1.3.2.1. Number of courses that include experiential learning through project work/field work/internship year-wise during last five years

1. affiliating university curriculum for courses having project work/field work/internship, attested by Principal.

SHIVAJI UNIVERSITY, KOLHAPUR.

Accredited By NAAC with 'A' Grade

Revised Syllabus For

B.A. Part-III

English

Syllabus to be implemented from

June, 2020 onwards.

Shivaji University, Kolhapur
B. A.III
Compulsory English
Ability Enhancement Compulsory Course (CBCS)
ENGLISH FOR COMMUNICATION
From June 2020 Onwards

Course Objectives:

- To enhance students' communication skills
- To impart employability skills to students
- To prepare students for competitive examinations
- To enable students to acquire professional skills such as media writing
- To enable students to learn manners and etiquettes required at workplace
- To enhance students' reading comprehension skills
- To create interest in English literature among students
- To inculcate human values and ethics in order to enable students' to become good citizens of the country

Course Outcomes: After the completion of the course, the students will be able to:

- Communicate in English, in oral and written modes, in their day-to-day lives as well as at workplaces.
- Face job interviews confidently and efficiently.
- Acquire soft skills required at workplaces and in real life.
- Learn group behavior and team work.
- Learn to value and respect others' opinions and views and develop democratic attitude.
- Face competitive examinations confidently and efficiently with adequate linguistic confidence.
- Acquire professional skills required in media writing such as writing editorials.
- Learn to appreciate and enjoy reading poetry and prose passages.
- Acquire human values and develop cultured outlook.

SEMESTER V AECC 5

MODULE I

A. Interview Skills
B. The Interview -V.V. John

MODULE II

A. Grammar for Competitive Examinations
B. The Lottery - Shirley Jackson

MODULE III

A. Writing Skills for Competitive Examinations
B. After Twenty Years - O' Henry

MODULE IV

A. I Shall Return To This Bengal - Jibananda Das
B.(i) Song of Youth - A. P. J. Abdul Kalam
(ii) The Orphan Girl - Henry Derezio

***Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR**

SEMESTER VI **AECC 6**

MODULE V

A. Group Discussion

B. The Lighthouse Keeper of Aspinwall - Henry Sienkiewicz

MODULE VI

A. Note Making and Note Taking

B. Three Questions - Leo Tolstoy

MODULE VII

A. Media Writing

B. Eight Rupees - Murli Das Melwani

MODULE VII

A. The Mystic Drum - Gabriel Okara

B. (i) Two Dead Soldiers- Jean Arasanayagam

(ii) Bora Ring - Judith Wright

***Note: Semester VI: 10 Marks for Internal Evaluation: STUDENTS' GROUP PROJECT**

Division of Teaching Hours 8 Modules x 15 Hours = 120 Hours

Shivaji University, Kolhapur
B. A.III
Compulsory English
Ability Enhancement Compulsory Course (CBCS)
ENGLISH FOR COMMUNICATION

***PATTERN OF QUESTION PAPER* (June 2020 Onwards)**

Semester V (Paper E) **Total Marks: 40**

Q. No	Sub Q.	Type of Question	Based on	Marks
Q. 1	A.	Four multiple choice questions with four alternatives to be set	Prose and Poetry	03
	B.	Answer in one word/phrase/sentence each.	Prose and Poetry	03
	C.	Two different **Vocabulary Exercises** to be set for 1 mark each	Prose and Poetry	02
Q.2	A.	Answer the following questions in 3-4 sentences each. (2 out of 3)	2 on Prose and 1 on Poetry	04
	B.	Write **Short Note** on the following in about 7-8 sentences each. (1 out of 2)	1 on Prose and 1 on Poetry	04
Q.3	--	Questions to be set on **Interview Skills (A or B)**	Module I A	08
Q.4	--	Question to be set on **Grammar for Competitive Examinations (A or B)**	Module II A	08
Q.5	--	Question to set on **Writing Skills for Competitive Examinations(A or B)**	Module III A	08

Semester VI (Paper F) **Total Marks: 40**

Q. No	Sub Q.	Type of Question	Based on	Marks
Q. 1	A.	Four multiple choice questions with four alternatives to be set	Prose and Poetry	03
	B.	Answer in one word/phrase/sentence each.	Prose and Poetry	03
	C.	Two different **Vocabulary Exercises** to be set for 1 mark each.	Prose and Poetry	02
Q.2	A.	Answer the following questions in 3-4 sentences each. (2 out of 3)	2 on Prose and 1 on Poetry	04
	B.	Write **Short Note** on the following in about 7-8 sentences each. (1 out of 2)	1 on Prose and 1 on Poetry	04
Q.3	--	Question to be set on **Group Discussion(A or B)**	Module V A	08
Q.4	--	Question to be set on **Note Making and Note Taking(A or B)**	Module VI A	08
Q.5	--	Question to set on **Media Writing(A or B)**	Module VII A	08

Shivaji University, Kolhapur
B. A. Part III
Special English
INTRODUCTION TO LITERARY CRITICISM (CBCS)
Discipline Specific Elective
Semester V (Paper VII) (DSE- E11) & Semester VI (Paper XII) (DSE- E136)
From June 2020 onwards

Course Objectives:

- To introduce students to the major trends in literary criticism.
- To familiarize students with the major critical concepts.
- To help students to study the original contributions made in the field of literary criticism.
- To acquaint students with the various literary and critical movements.
- To train students to write critical appreciation of poetry.

Course Outcomes:

- Students are able to understand the major trends in criticism.
- Students are able to interpret critical concepts.
- Students are able to study the original contributions to literary criticism.
- Students are acquainted with literary and critical movements.
- Students are able to understand the meaning and appreciate the poems critically.

Semester V(Paper VII) (DSE- E11)	
Module I	**Introduction to Literary Criticism:** 1. Nature of Criticism 2. Function of Criticism
Module II	**Classical Criticism:** 1. The Concept of Tragedy 2. The Ideal Tragic Hero (From **Aristotle's *Poetics***)
Module III	**Neo-classical Criticism:** Dr. Samuel Johnson's *Preface to Shakespeare* (1765)
Module IV	**Literary Terms:** 1. Symbolism 2. Realism 3. Humour 4. Paradox
Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR	
Semester VI (Paper XII) (DSE- E136)	
Module V	**Romantic Criticism:** William Wordsworth's Theory of Poetic Diction (From **William Wordsworth's *Preface to Lyrical Ballads***)
Module VI	**Victorian Criticism:** Matthew Arnold's Touchstone Method (From **Matthew Arnold's *The Study of Poetry***)
Module VII	**Modern Criticism:**

	T S Eliot's *Tradition and Individual Talent* (1919)
Module VIII	**Practical Criticism:** Poetry
Note: Semester VI: 10 Marks for Internal Evaluation: STUDENTS' GROUP PROJECT	

Division of Teaching Hours 8 Modules x 15 Hours = 120 Hours

Recommended Reading: Semester V and Semester VI

Abrams, M. H. *A Glossary of Literary Terms* (8th Edition). New Delhi: Akash Press, 2007.

Alexander, L. G. *Prose and Poetry Appreciation for Overseas Students*. London: Longman Green and Comp. Ltd., 1966.

Allex,Latter & Rachel, Teubner. *William Wordsworth's Preface to the Lyrical Ballads*. London: Macat Library, 2018.

Bliss, Perry. *A Study of Poetry*. Kindle Edition, 22 Feb., 2018.

Butcher, S. C. *Poetics.* New Delhi: Kalyani Publishers, 1978.

Bywater, Ingram. *Aristotle's Poetics*. Oxford: Atthe Clarendon Press, 1976.

Cuddon, J. A. *The Penguin Dictionary of Literary Terms and Literary Theory* (4th Edition). London and New York: Penguin, 2000.

Davis, Joseph, K. Pathea, R Broughton and Michael Wood. *Literature*. Illinois: Scott, Foresman and Comp. Glenviews, 1977.

Eliot, T.S. *The Sacred Wood – Essays on Poetry and Criticism*. (Seventh edition),1950.

Enright, D.J. & Ernst De Chickera. *English Critical Texts: 16th Century to 20th Century*.OUP, 1968.

Fyfe, Hamilton. *Aristotle's Art of Poetry*. London: OUP, 1940.

Gray, Martin. *A Dictionary of Literary Terms* (York Handbooks), Pearson Education, 2009.

Hudson, W. H. *An Introduction to the Study of Literature*. New Delhi: Atlantic, 2007.

Richards, I. A. *Practical Criticism: A Study of Literary Judgment.* New Delhi: UBS Publishers, 2002.

Scott James, R. A. *The Making of Literature*. Mumbai: Allied Publishers Pvt. Ltd., 1963.

Sherbo, Arthur(ed.). *The Yale edition of the works of Samuel Johnson*.Vol.7. New haven: Yale University Press,1968.

S. Ramaswami & V. S. Seturaman (ed.) *The English Critical Tradition: An Anthology of English Literary Criticism*, Volume 1,. New Delhi: Macmillan Publishers India Ltd. 1977/2009.

Seturaman, V. S., C. T. Indra and T. Siraman. *Practical Criticism*. Madras: Macmillan India Ltd., 1995.

Waugh, Patricia (ed.) *Literary Theory and Criticism: An Oxford Guide*. New York: Oxford University Press, 2006.

Wimsatt, W. K. and Cleanth Brooks. *Literary Criticism: A Short History*. New Delhi: Oxford and IBH Publishing Company Pvt. Ltd., 1957.

Wellek, Rene and Austin Warren. *Theory of Literature.* London: Jonathan Cape, 1949.

Shivaji University, Kolhapur
B. A. Part III
Special English
INTRODUCTION TO LITERARY CRITICISM (CBCS)
Discipline Specific Elective
Semester V (Paper VII) (DSE- E11)
PATTERN OF QUESTION PAPER
From June 2020 onwards

Total Marks: 40

Q1. Objective type Question
A) Multiple choice questions with four alternatives. 4
B) Answer the following questions in one word/phrase/sentence each. 4
(Q1 A and B to be set on topics covering **Module I to IV**)
(At least one item to be set on each Module)
Q2. Answer the questions in about 250-300 words each.
(A or B to be set on **Module I, II, and III**) 10
Q3. Answer the questions in about 250-300 words each.
(A or B to be set on **Module I, II, and III**) 10
Q3 A. Write short notes on the following: (Any 3 out of 5) 12
(3 to be set on **Module IV** and 2 on **Module I, II, III** not covered in question 2 and 3)

INTRODUCTION TO LITERARY CRITICISM (CBCS)
Semester VI (Paper XII) (DSE- E136)
PATTERN OF QUESTION PAPER
From June 2020 onwards

Total Marks: 40

Q1. Objective type Question
A) Multiple choice questions with four alternatives. 4
B) Answer the following questions in one word/phrase/sentence each. 4
(Q1. A and B to be set on topics covering **Module V to VII**)
(At least one item to be set on each Module)
. Q2. Answer in the questions 250-300 words each. 10
(A or B to be set on **Module V, VI, and VII**)
Q3. Answer the questions in about 250-300 words each. 10
(A or B to be set on **Module V, VI, and VII**)
Q4. Write critical appreciation of the given poem. 12
(with the help of points such as title, theme, content, devices, message, style, rhyme-scheme, diction, type of poem, tone, stanza-pattern, metre, etc. **(Based on Module VIII)**

EQUIVALENCE

Old Title	New Title
LITERARY CRITICISM AND LITERARY APPRECIATION	**INTRODUCTION TO LITERARY CRITICISM**

Shivaji University, Kolhapur

B. A.III

English Special

ENGLISH POETRY (CBCS)

Discipline Specific Elective

Semester V (Paper VIII) (DSE – E12) and Semester VI (Paper XIII) (DSE – E137)

(From June 2020 Onwards)

Course Objectives:

- To make students engaged and curious readers of poetry
- To introduce students to poetry from various cultures and traditions
- To make students understand that poetry gives intellectual, moral and linguistic pleasures
- To make students hear and read poems aloud and to memorize lines

Course Outcomes:

- Students will be able to trace the development of the poetry in English from the days of Shakespeare to the contemporary India.
- Students will be able to appreciate and analyze the poems properly.
- Students will have a fairly comprehensive view of the Western and Eastern poetic tradition and they will be able to relate it to various literary movements.
- Students will have an insight into poetry and they will be able to make a lively and interesting reading.

SEMESTER V (Paper VIII) (DSE – E12)			
MODULE NO.		TITLE OF THE MODULE	NAME OF THE POET
I.		**Topics For Background Readings:**	
	1.	Elizabethan Poetry	
	2.	Metaphysical Poetry	
	3.	Romantic Poetry	
II. Selections from Elizabethan Poetry:			
	1.	Sweet Warrior (Sonnet 57)	Edmund Spenser
	2.	Sonnet To The Moon	Sir Philip Sydney
	3.	Full Many A Glorious Morning… (Sonnet 33)	William Shakespeare
III. Selections from Metaphysical Poetry:			
	1.	The Sun Rising	John Donne
	2.	The Retreat	Henry Vaugham
	3.	The Collar	George Herbert
IV. Selections from Romantic Poetry:			
	1.	My Heart Leaps Up	William Wordsworth
	2.	The Rime of the Ancient Mariner	S. T. Coleridge
	3.	Ozymandias	P. B. Shelley
	4.	When We Two Parted	Lord Byron
***Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR**			

SEMESTER VI (Paper XIII) (DSE – E137)			
MODULE NO.		TITLE OF THE MODULE	NAME OF THE POET
V. Topics For Background Readings:			
	1.	Victorian Poetry	
	2.	Modern English Poetry	
	3.	Modern Indian English Poetry	
VI. Selections from Victorian Poetry:			
	1.	The Lady Of Shallot	Alfred Lord Tennyson
	2.	My Last Duchess	Robert Browning
	3.	Love Came Down At Christmas	Christiana Rossetti
VII. Selections from Modern English Poetry:			
	1.	No Second Troy	W. B. Yeats
	2.	The Hollow Men	T. S. Eliot
	3.	Tonight I Can Write	Pablo Neruda
VIII. Selections from Modern Indian English Poetry:			
	1.	The Professor	Nissim Ezekiel
	2.	A Hot Noon in Malabar	Kamala Das
	3.	A River	A. K. Ramanujan
	4.	A Kind of Happiness	Jayanta Mahapatra
***Note: Semester VI: 10 Marks for internal Evaluation: STUDENTS' GROUP PROJECT**			

Division of Teaching Hours: 8 Modules x 15 Hours each= 120 Hours

Recommended Reading: Semester V and Semester VI

Appelbaum, Stanley. *English Romantic Poetry: An anthology*. Dover Publications Inc. 1996.
Burrow, Colin. *Metaphysical Poetry.* Penguin Classics. 2006.
Chaudhuri, Roshinka. *A History of Indian Poetry in English.* Cambridge University press. 2016.
Chaudhuri, Sukanta. *Modern Indian Literature*, New Delhi: OUP, 2004.
Courthope, W.J. *A History of English Poetry*. Vol.I Macmillan, 1995.
Craig, W.J. (ed.). *The Complete works of William Shakespeare*. Oxford: OUP., 1905.
Fenton,James. *An Introduction to English Poetry*. New York: Farrar, Strauss and Giroux, 2004.
Gardner, Martin, *The Annotated Ancient Mariner,* New York:Clarkson Potter,1965.
Harold Bloom and Lionel Trilling. (ed.) *Romantic Prose and Poetry,* New York: OUP, 1973.
Mitra, Zinia(ed.). Indian *Poetry in English:Critical Essays*. New Delhi: PHI Learning Pvt Ltd.,2012.
Naik, M.K. *A History of Indian English Literature*. Delhi, 1982.
Narasimhaiah, C.D., (ed.) *An Anthology of Commonwealth Poetry,*Delhi: Macmillan, 1990.
Negri,Paul. *English Victorian poetry.* Dover Publications Inc. 1998
Ramanan, M.G. *Modern English Poetry: A Selection*. New Delhi:Orient Blackswan,2013.
Samuel Taylor Coleridge, *Biographia Literaria,* ed. George Watson. London: Everyman, 1993.

Shivaji University, Kolhapur

B. A.III

English Special

ENGLISH POETRY (CBCS)

Discipline Specific Elective

Semester V (Paper VIII) (DSE – E12)

PATTERN OF QUESTION PAPER **From June 2020 Onwards**

Marks: 40

Q1. A) Four multiple choice questions with four alternatives	(4)
B) Answer the following questions in one word/ phrase/sentence each.	(4)
(Q. 1 A and B to be set on **Module II, III and IV)**	
Q.2. Answer the following questions in about 250-300 words.	(10)
(A or B to be set on **Module I)**	
Q.3. Answer the following questions in about 250-300 words.	(10)
(A or B to be set on **Module II, III or IV)**	
Q.4. Write Short Notes in about 100-150 words each (3out of 4)	(12)
(Two be set on **Module I** and two be on **Module II, III or IV)**	

ENGLISH POETRY (CBCS)

Discipline Specific Elective

Semester VI (Paper XIII) (DSE – E137)

Marks: 40

Q1. A) Four multiple choice questions with four alternatives	(4)
B) Answer the following questions in one word/ phrase/sentence each.	(4)
(Q. 1 A and B to be set on **Module VI, VII and VIII)**	
Q.2. Answer the following questions in about 250-300 words.	(10)
(A or B to be set on **Module V)**	
Q.3. Answer the following questions in about 250-300 words.	(10)
(A or B to be set on **VI, VII or VIII)**	
Q.4. Write Short Notes in about 100-150 words each (3out of 4)	(12)
(Two be set on **Module V** and two be on **Module VI, VII or VIII)**	

EQUIVALENCE

Old Title	New Title
Understanding Poetry	**English Poetry**

Shivaji University, Kolhapur
B. A. Part III
Special English

ENGLISH DRAMA (CBCS)

Discipline Specific Elective
Semester V (Paper IX) ((DSE – E13) & Semester VI (Paper XIV) (DSE – E138)
From June 2020 onwards

Course Objectives:

- To make students understand different forms of drama
- To enable students to relate drama to their ideological or socio-political contexts
- To help students improve their creative and imaginative faculties through the reading of drama
- To enable students to know about various aspects of the drama

Course Outcomes:

- Students are able to understand different forms of drama.
- Students are able to relate drama to their ideological or socio-political contexts.
- Students are able to improve their creative and imaginative faculties through the reading of drama.
- Students are able to know about various aspects of the drama.

Semester V (Paper IX) ((DSE – E13)

MODULE I
Definition and Elements of Drama
MODULE II
Tragedy as a Form
MODULE III
The Importance of Being Earnest - Oscar Wilde
MODULE IV
Hamlet – William Shakespeare

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Prescribed Texts:

Wilde, Oscar. *The Importance of Being Earnest.* New Delhi: General Press, 2018.
Shakespeare, William. *Hamlet.* Penguin Books, 1980.

***Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR**

Semester VI (Paper XIV) (DSE – E138)

MODULE V
Types of Drama
MODULE VI
Comedy as a Form
MODULE VII
Nagmandala – Girish Karnad
MODULE VIII
Harvest – Manjula Padmanabhan

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods
Prescribed Texts:
Karnad, Girish. *Nagmandala.* Oxford University Press, 1990.
Padmanabhan, Manjula. *Harvest.* Delhi: Penguin, 1997.

***Note: Semester VI: 10 Marks for Internal Evaluation: STUDENTS' GROUP PROJECT**

Recommended Reading: Semester V and Semester VI

Aasand, Hardin L. *Stage Directions in Hamlet: New Essays and New Directions*. NJ: Fairleigh Dickinson University Press, 2003.
Babu, Munchi Sarat. *Indian Drama.* New delhi: Prestige Books, 1997.
Bhatt, S.K. *Indian English Drama: A Critical Study.* New Delhi: Sterling Publishers Pvt. Ltd., 1987.
Bloom, Harold. *The Importance of Being Earnest: Modern Critical Interpretations.* Chelsea House Pub., 1988.
Driver, T.F. *Drama and History*. New York: Columbia University Press, 1967.
Ddiya, Jaydipsinh. (ed.) *The Plays of Girish Karnad: Critical Perspectives*. New Delhi: Prestige Books, 1999.
Gargy, Balwant. *Folk Theatre of India*. Culcutta: Rupa & Co., 1991.
Gillespie, Michael Patrick. *The Importance of Being Earnest.*(Norton Critical Editions). W.W.Norton and Co., 2006.
Hibbard, G.R. (ed.) *Hamlet*. OUP: 1988.
Hirsh, James. Shakespeare and the History of Soliloquies. NJ: Farleigh Dickinson University Press, 2003.
Joshi, R.G. *Myth in Indian Drama.* Delhi: B.R. Publishing Corporation, 1984.
Kumar, Nand. *Indian English Drama: A Study in Myths*. New Delhi: Sarup and sons, 2003.
MacCary, Thomas. *Hamlet: A Guide to the Play*. London: Greenwood Press, 1988.
Martin, James. *The Meaning of the 21st Century.* New York: Riverhead Penguin, 2007.
Priestley, J.B. *The Art of the Dramatist*. London: Heinemann, 1957.
Rajkumar, K. *Socio-Political Realities in Harvest*. Purna:RHI,Mahmul, 2012.
Robertson, Ronald. *Globalization: Social Theory and Global Culture*. London: Sage, 1992.
Sen,B. *The Importance of Being Earnest.* Unique Publishers,2015.
Styan, J.L. *The Elements of Drama*. Cambridge: Cambridge University Press, 1967.
Vaidyanathan, G. *The Importance of Being Earnest.* New Delhi: Narain Publications, 2018.
Worthen, W.B. (ed.). *Anthology of Drama* (Fourth edition). London: Cengage Learning EMEA, 2004.

Shivaji University, Kolhapur
B. A. Part III
Special English

ENGLISH DRAMA (CBCS)

Discipline Specific Elective
Semester V (Paper IX) ((DSE – E13)

PATTERN OF QUESTION PAPER **(From June 2020 onwards)**

Marks: 40

Q1. A) Four multiple choice questions with four alternatives (4)
B) Answer the following questions in one word/ phrase/sentence each. (4)
(Q. 1 A and B to be set on **Module III and IV**)
Q.2. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module I and II**)
Q.3. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module III and IV**)
Q.4. Write Short Notes in about 100-150 words each (3out of 4) (12)
(Two be set on **Module I and II** and two be on **Module III and IV**)

ENGLISH DRAMA (CBCS)

Discipline Specific Elective
Semester VI (Paper XIV) (DSE – E138)

PATTERN OF QUESTION PAPER **(From June 2020 onwards)**

Marks: 40

Q1. A) Four multiple choice questions with four alternatives (4)
B) Answer the following questions in one word/ phrase/sentence each. (4)
(Q. 1 A and B to be set on **Module VII and VIII**)
Q.2. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **Module V and VI**)
Q.3. Answer the following questions in about 250-300 words. (10)
(A or B to be set on **VII and VIII**)
Q.4. Write Short Notes in about 100-150 words each (3out of 4) (12)
(Two be set on **Module V and VI** and two be on **Module VII and VIII**)

EQUIVALENCE

Old Title	New Title
Understanding Drama	**English Drama**

Shivaji University, Kolhapur
B. A. Part III Special English
ENGLISH NOVEL (CBCS)
Discipline Specific Elective
Semester V (Paper X) ((DSE – E14) & Semester VI (Paper XV) (DSE – E139)
From June 2020 onwards

Course Objectives:

- To make students understand different forms of novel.
- To enable students to relate novels to their ideological or socio-political contexts.
- To help students to improve their creative and imaginative faculties through the reading of novels.
- To enable students to know about various aspects of the novel.

Course Outcomes:

- Students are able to understand different forms of novel.
- Students are able to relate novels to their ideological or socio-political contexts.
- Students are able to improve their creative and imaginative faculties through the reading of novels.
- Students are able to know about various aspects of the novel.

SEMESTER V (Paper X) (DSE – E14)

MODULE I
Rise and Development of the Novel
MODULE II
Aspects of the Novel
MODULE III
The Old Man and the Sea – Ernest Hemingway
MODULE IV
The Power and the Glory – Graham Greene

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Prescribed Texts:

Hemingway, Ernest. *The Old Man and the Sea.* New York: Simon & Schuster, 1952.
Greene, Graham. *The Power and the Glory.* New York: Time Reading Special Edition. 1940, 1962.

***Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR**

SEMESTER VI (Paper XV) (DSE – E139)

MODULE V
Historical and Psychological Novel
MODULE VI
Satirical Novel and Epistolary novel
MODULE VII
Animal Farm: A Fairy Tale - George Orwell
MODULE VIII
The Guide - R. K. Narayan

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Prescribed Texts:

Orwell, George. *Animal Farm: A Fairy Tale*. New York: Signet Classic, 1996.

Narayan, R. K. *The Guide*. US: Viking Press, 1958.

***Note: Semester VI: 10 Marks for internal Evaluation: STUDENTS' GROUP PROJECT**

Suggested Reading: for Semester V and Semester VI

Auden,W.H. *The Enchafed Flood: The Romantic Econography of the Sea*. New York: Random, 1950.

Abrams, M. H. *A Glossary of Literary Terms* (8th Edition) New Delhi, Akash Press – 2007

Bender, Bert. *Sea Brothers: The Tradition of American Sea Fiction from Moby-Dick to the Present.* Philadelphia: University of Pennsylvania Press, 1988.

Bloom, Harold. *Ernest Hemingway's The Old Man and the Sea: Modern Critical Interpretations.* Cheasea House Publications, 2008.

Bradbury, Malcolm. *The Novel Today*. Glasgow: F. C. Paperbacks, 1982.

Brooks and Warren. *Understanding Fiction*. Prentice Hall, 1959.

Dedria, Bryfonski & Hall, Sharon. *Twentieth Century Literary Criticism: George Orwell.* Michigan: Book Tower, 1979.

Edel, Leon. *The Psychological Novel: 1900-1950*. Ludhiana: Kalyani, 1997.

Forster, E. M. *Aspects of Novel*. London. 1949.

Hynes, Samuel, ed. *Graham Greene: A Collection of Critical Essays.* New Jersy: Prentice Hall.Inc. 1973.

Jones, David P. *Graham Greene.* Edinburgh: Oliver and Boyd. 1963.

Kerala, Calling. *From Eric Blair to George Orwell, Biography.* London: Sage, 2003.

Kermode, Frank. *Sense of an Ending*. OUP, 1967.

Lall, Pamji. *Graham Greene: The Power and the Glory: A Critical Study.* New Delhi: Roma Brothers India Pvt. Ltd. 2005.

Lewis,R.w.B. & Conn, Petr J.ed. *Graham Greene: The Power and the Glory: Text and Criticism.* New York: The Viking Press, 1970.

Lubbock, Percy. *The Craft of Fiction*. London: Jonahan Cape, 1965.

Matz, Jesse. *The Modern Novel*: A Short Introduction. Oxford Blackwell, 2004.

Meyers, Jeffery. *George Orwell: The Critical Heritage*. Routledge, 1997.

Rimmon-Kennan, Shlomith. *Narrative Fiction*. London and New York: Routledge, 2005.

Roy, Ruby. *A Critical Study of R.K. Narayan's Swami and Friends and The Guide*. Delhi: Kalpaz Publications, 2015.

Rees, R. J. *Introduction to English Literature*. London: Macmillan, 1966/1968.

Singh, P.K. *The Novels of R. K. Narayan :A Critical Study.* New Delhi: Atlantic Publishers.

Stade, George, ed. *Six Contemporary British Novelists.* New York: Colombia University Press, 1976.

Subramaniam, K.S. *Graham Greene: A Study of Graham Greene's Works.* Bareilly: Prakash Book Depot, 1978.

Vinson, James, ed. *Contemporary Novelists*. London: St. James Press, 1972.

Watt, Ian.. *Rise of the Novel*. London: Penguin, 1957.

Woodcock, George. *20th Century Fiction*. London: The Macmillan Press Ltd., 1983.

Shivaji University, Kolhapur
B. A. Part III
Special English

ENGLISH NOVEL (CBCS)

From June 2020 onwards
PATTERN OF QUESTION PAPER FOR
(Semester V Paper X DSE – E14)

Marks: 40

Q1. A) Four multiple choice questions with four alternatives	(4)
B) Answer the following questions in one word/ phrase/sentence each.	(4)
(Q. 1 A and B to be set on **Module III and IV**)	
Q.2. Answer the following questions in about 250-300 words.	(10)
(A or B to be set on **Module I and II**)	
Q.3. Answer the following questions in about 250-300 words.	(10)
(A or B to be set on **Module III and IV**)	
Q.4. Write Short Notes in about 100-150 words each (3out of 4)	(12)
(Two be set on **Module I and II** and two be on **Module III and IV**)	

PATTERN OF QUESTION PAPER FOR
(Semester VI Paper XV DSE – E139)

Marks: 40

Q1. A) Four multiple choice questions with four alternatives	(4)
B) Answer the following questions in one word/ phrase/sentence each.	(4)
(Q. 1 A and B to be set on **Module VII and VIII**)	
Q.2. Answer the following questions in about 250-300 words.	(10)
(A or B to be set on **Module V and VI**)	
Q.3. Answer the following questions in about 250-300 words.	(10)
(A or B to be set on **VII and VIII**)	
Q.4. Write Short Notes in about 100-150 words each (3out of 4)	(12)
(Two be set on **Module V and VI** and two be on **Module VII and VIII**)	

EQUIVALENCE

Old Title	New Title
Understanding Novel	**English Novel**

Shivaji University, Kolhapur
B.A. III
English Special
LANGUAGE AND LINGUISTICS (CBCS)
Discipline Specific Elective
Semester V –Paper XI (DSE - E15) & Semester VI – Paper XVI (DSE - E140)
From June 2020 onwards

LANGUAGE AND LINGUISTICS
Semester V –Paper XI (DSE -E 15)

Course Objectives:

- To orient students to the concept of communication.
- To make the students familiar with varieties of the English language.
- To acquaint students with different levels of the study of language.
- To study the basic units of grammar.

Course Outcomes:

- Students know the concept of communication.
- Students are familiar with varieties of the English language.
- Students know different levels of study of the English language.
- Students know basic units of grammar.

Semester V –Paper XI DSE - E 15

MODULE I

Language and Communication

i. Definitions and characteristics of language

ii. Human and Animal communication systems (Special reference to Hockett's 7 characteristics of language)

MODULE II

Phonology

MODULE III

Morphology

MODULE IV

Words

***Note: Semester V: 10 Marks for Internal Evaluation: STUDENTS' SEMINAR**

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Reference Books :

Balasubramaniam, T. *A Textbook of English Phonetics for Indian Students*, Delhi: McMillan, 1981.

Bansal, R.K. & Harrison, J.B., *Spoken English,* Hyderabad: Orient Longman, 2000.

Hockett, C.F., *A Course in Modern Linguistics*, MacMillan, . 1963.

Hudson, Richard, *Sociolinguistics,* Cambridge: Cambridge University Press, 1996.

Jones, Daniel, *English Pronouncing Dictionary,* ELBS Edition.

Leech et al, *English Grammar Today: a New Introduction*, Hyderabad: McMillan, 2010.

Lyons, John, *Language and Linguistics: An Introduction,* Cambridge: Cambridge University Press, 1981.

Quirk, R., Greenbaum, S., Leech, G. &Svartvik, J., *A Comprehensive Grammar of English*, New Delhi: Pearson, 2010.

Quirk, Randolph &Greenbaum, Sidney, *A University Grammar of English*, New Delhi: Pearson, 2015.

Radford, A., Atkinson, M., Britain, D., Clahsen, H. & Spencer, A., *Linguistics: An Introduction*, Cambridge: Cambridge University Press, 1999.

Trask, R. L, *Key Concepts in Language and Linguistics*, London: Routledge, 1999.

Verma, S.K. &Krishnaswamy, N., *Modern Linguistics,* Hyderabad: Oxford University Press, 1989.

Velayudhan, S. &Mohanan, K. P., *An Introduction to the Phonetics and Structure of English*, New Delhi: Somaiya Pub. Pvt. Ltd., 1977

QUESTION PAPER PATTERN

From June 2020 onwards

LANGUAGE AND LINGUISTICS (CBCS)
Discipline Specific Elective
Semester V –Paper XI (DSE - E15)

Q. 1	Objective type	
	a) Three term labels	(3)
	b) Transcription of words with primary stress	(3)
	c) Conversion of the given transcriptions into the conventional spellings	(2)
Q.2	a) Write short notes (2/3) (to be set on **Module I**)	(10)
	b) Morphological Analysis giving labels (2/4)	(4)
Q.3	a) Identification of word formation/morphological processes	(4)
	d) Identification of word classes	(4)
Q.4.	Write short notes (2/4) (2 each to be set on **Module II & IV)**	(10)

Shivaji University, Kolhapur
B.A. III
English Special
LANGUAGE AND LINGUISTICS (CBCS)
Discipline Specific Elective
Semester VI – Paper XVI (DSE - E140)
From June 2020 onwards

Course Objectives:

- To acquaint students with structures and functions of words and phrases.
- To enable students to know and identify elements and types of clauses.
- To study Subordination and Coordination.
- To study different ways of structuring clauses.

Course Outcomes:

- Students know words and phrases.
- Students know and identify elements and types of clauses.
- Students know types of sentences.
- Students know the different ways of structuring clauses

.

Semester VI – Paper XVI (DSE - E140)

MODULE V

Phrases

MODULE VI

Clauses

MODULE VII

Subordination and Coordination

MODULE VIII

Basic and Derived Structures

i) Inversion / Fronting
ii. Negation
iii. Interrogation
iv. Exclamation
v. Omission of Certain Elements
(Relative Pronouns, Comparative Clauses, Tag Questions)
vi. Passivisation
vii. Subject Raising
viii. Style Transformation

Note: Semester VI: 10 Marks for Internal Evaluation: STUDENTS' GROUP PROJECT

Division of Teaching Hours: 4 Modules X 15 Periods = 60 Periods

Reference Books :

Crystal, David, *Linguistics*, London: Penguin Books Ltd., 1974.

Hockett, C.F., *A Course in Modern Linguistics*, MacMillan, 1963.

Hudson, Richard, *Sociolinguistics,* Cambridge: Cambridge University Press, 1996.

Leech et al, *English Grammar Today: A New Introduction*, Hyderabad: McMillan, 2010.

Lyons, John, *Language and Linguistics: An Introduction,* Cambridge: Cambridge University Press, 1981.

Palmer, F. G., *Grammar*, London: Penguin Books Ltd., 1973.

Quirk, R., Greenbaum, S., Leech, G. &Svartvik, J., *A Comprehensive Grammar of English*, New Delhi: Pearson, 2010.

Quirk, Randolph &Greenbaum, Sidney, *A University Grammar of English*, New Delhi: Pearson, 2015.

Radford, A., Atkinson, M., Britain, D., Clahsen, H. & Spencer, A., *Linguistics: An Introduction*, Cambridge: Cambridge University Press,1999.

Verma, S.K. &Krishnaswamy, N., *Modern Linguistics,* Hyderabad: Oxford University Press, 1989.

QUESTION PAPER PATTERN

From June 2020 onwards

LANGUAGE AND LINGUISTICS (CBCS)
Discipline Specific Elective
Semester VI – Paper XVI (DSE - E140)

Q. 1	a) Identify elements of clause (S, P, O, C, A)	(4/6)	(4)
	b)Transformation of sentence (to be set on **Module VIII**)	(4/6)	(4)
Q.2	a) Write short notes. (2 each to be set on **Module V & VI**)	(2/4)	(10)
	b) Give form and function labels to the underlined phrases.	(4/6)	(4)
Q.3	a) Write short notes (To be set on **Module VII**)	(2/3)	(10)
	b) Identify the subordinate clauses and state their form and function.	(4/6)	(4)
Q. 4.	Do as directed. (to be set on **Module VIII**)	(4/6)	(4)

EQUIVALENCE

OLD TITLE	NEW TITLE
THE STRUCTURE AND FUNCTION OF MODERN ENGLISH	LANGUAGE AND LINGUISTICS

SHIVAJI UNIVERSITY, KOLHAPUR

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Accredided by NAAC 'A' Grade

Revised Syllabus for

Bachelor of Arts

B.A. Part-III - MARATHI

CHOICE BASED CREDIT SYSTEM

(Syllabus will be implemented from June, 2020)

शिवाजी विद्यापीठ, कोल्हापूर
SHIVAJI UNIVERSITY, KOLHAPUR

मराठी अभ्यास मंडळ

Board of Studies in Marathi

पसंतीवर आधारित श्रेयांक पद्धती

Choice Based Credit System

बी.ए. भाग-३ (मराठी) : B.A. Part-III (Marathi)

अभ्यासक्रम : Syllabus

Introduced from June 2020 onwards

समकक्षता / Equivalence

		जुना अभ्यासक्रम		नवा अभ्यासक्रम
सत्र क्र. Sem.	अभ्यास-पत्रिका क्र. Paper No.	अभ्यासपत्रिकेचे नाव	अभ्यास-पत्रिका क्र. Paper No.	अभ्यासपत्रिकेचे नाव
V	VII	काव्यशास्त्र	VII	साहित्यविचार
V	VIII	भाषाविज्ञान आणि मराठी भाषा	VIII	मराठी भाषा व भाषाविज्ञान
V	IX	मराठी वाङ्मयाचा इतिहास	IX	मध्ययुगीन मराठी वाङ्मयाचा इतिहास (प्रारंभ ते इ.स.१५००)
V	X	मराठी भाषा : उपयोजन आणि सर्जन	X	मराठी भाषा व अर्थार्जनाच्या संधी
V	XI	वाङ्मयप्रवाहांचे अध्ययन (ग्रामीण साहित्य)	XI	वाङ्मयप्रवाहाचे अध्ययन : मध्ययुगीन
VI	XII	काव्यशास्त्र	XII	साहित्यविचार
VI	XIII	भाषाविज्ञान आणि मराठी भाषा	XIII	मराठी भाषा व भाषाविज्ञान
VI	XIV	मराठी वाङ्मयाचा इतिहास	XIV	मध्ययुगीन मराठी वाङ्मयाचा इतिहास (इ.स.१५०० ते १८००)
VI	XV	मराठी भाषा : उपयोजन आणि सर्जन	XV	मराठी भाषा व अर्थार्जनाच्या संधी
VI	XVI	वाङ्मयप्रवाहांचे अध्ययन (दलित साहित्य)	XVI	वाङ्मयप्रकाराचे अध्ययन : ललित गद्य (व्यक्तिचित्रे)

सूचना : १. सत्र पाच (V) साठी विद्यापीठाने प्रत्येक अभ्यासपत्रिकेनुरूप अंतर्गत मूल्यमापनासाठी १० गुणांसाठी सेमिनार सुचविला आहे. सदर सेमिनारसाठी त्या त्या अभ्यासपत्रिकेच्या अभ्यासक्रमानंतर सेमिनार विषय दिले आहेत. त्यापैकी एका विषयावर प्रत्येक विद्यार्थ्याने सादरीकरण करणे आवश्यक आहे. त्यामध्ये विषयानुसार उद्दिष्टे, प्रास्ताविक, विषयविवेचन, निष्कर्ष आणि संदर्भ या सूत्रानुरूप सादरीकरण गरजेचे आहे. ज्या विषयावर सेमिनार दिला आहे त्याची टिपणे विद्यार्थी व संबंधित विषय शिकविणाऱ्या शिक्षकाच्या स्वाक्षरीसह महाविद्यालयाच्या विभागात जतन करून ठेवणे आवश्यक आहे.

२. सत्र सहा (VI) साठी विद्यापीठाने प्रत्येक अभ्यासपत्रिकेनुरूप अंतर्गत मूल्यमापनासाठी १० गुणांचा गटप्रकल्प (Group Project) सूचविला आहे. सदर गटप्रकल्पासाठी त्या त्या अभ्यासपत्रिकेच्या अभ्यासक्रमानंतर गटप्रकल्प विषय सुचविले आहेत. त्यापैकी एका विषयावर गटप्रकल्प सादर करणे आवश्यक. गटप्रकल्प तयार करताना शीर्षक, उद्दिष्टे, प्रास्ताविक, गृहीतके, विषयाचे महत्त्व, विषयविवेचन, निष्कर्ष आणि संदर्भ या क्रमाने गटप्रकल्प तयार करावा. एका गटप्रकल्पासाठी कमाल ५ विद्यार्थी मर्यादा असावी. ज्या विषयावर गटप्रकल्प तयार केला आहे; त्यावर गटप्रकल्पकांची व संबंधित विषय शिकविणाऱ्या शिक्षकांची स्वाक्षरी घेऊन सदर प्रकल्प विभागात जतन करून ठेवावेत.

३. सेमिनार व गटप्रकल्पसंदर्भात विषयाची निवड करताना विद्यापीठाने सूचित केलेल्या विषयाबरोबर त्या त्या अभ्यासपत्रिकेनुरूप आणखी काही नावीन्यपूर्ण विषयांची निवड करण्यास स्वातंत्र्य दिले आहे.

शिवाजी विद्यापीठ, कोल्हापूर
SHIVAJI UNIVERSITY, KOLHAPUR
मराठी अभ्यास मंडळ
Board of Studies in Marathi
पसंतीवर आधारित श्रेयांक पद्धती
Choice Based Credit System

Structure of Programme

Revised syllabus B. A. Part III (MARATHI)

Introduced from June 2020 onwards

Sr.No.	सत्र क्र. Sem.	अभ्यासपत्रिकेचे नाव	अभ्यास-पत्रिका क्र. Paper No.	Worklaod	Credits	Total Credits	Theory Marks	Term work/ Seminar
1	V	साहित्यविचार	VII	4 lectures/ week	4	20	40	10
2	V	मराठी भाषा व भाषाविज्ञान	VIII	4 lectures/ week	4		40	10
3	V	मध्ययुगीन मराठी वाङ्मयाचा इतिहास (प्रारंभ ते इ.स.१५००)	IX	4 lectures/ week	4		40	10
4	V	मराठी भाषा व अर्थार्जनाच्या संधी	X	4 lectures/ week	4		40	10
5	V	वाङ्मयप्रवाहाचे अध्ययन : मध्ययुगीन	XI	4 lectures/ week	4		40	10
Sr.No.	सत्र क्र. Sem.	अभ्यासपत्रिकेचे नाव	अभ्यास-पत्रिका क्र. Paper No.	Worklaod	Credits	Total Credits	Theory Marks	Term work/ Group project
6	VI	साहित्यविचार	XII	4 lectures/ week	4	20	40	10
7	VI	मराठी भाषा व भाषाविज्ञान	XIII	4 lectures/ week	4		40	10
8	VI	मध्ययुगीन मराठी वाङ्मयाचा इतिहास (इ.स.१५०० ते १८००)	XIV	4 lectures/ week	4		40	10
9	VI	मराठी भाषा व अर्थार्जनाच्या संधी	XV	4 lectures/ week	4		40	10
10	VI	वाङ्मयप्रकाराचे अध्ययन : ललितगद्य (व्यक्तिचित्रे)	XVI	4 lectures/ week	4		40	10

शिवाजी विद्यापीठ, कोल्हापूर

SHIVAJI UNIVERSITY, KOLHAPUR

मराठी अभ्यास मंडळ

Board of Studies in Marathi

पसंतीवर आधारित श्रेयांक पद्धती

Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semister No. V : अभ्यासपत्रिका क्र. VII

Discipline Specific Elective (DSE-E1)

विद्याशाखीय विशेष निवड (DSE-E1)

साहित्यविचार

उद्दिष्टे :

१. पौर्वात्य, पाश्चात्त्य व आधुनिक भारतीय साहित्यशास्त्राचे स्वरूप समजून घेणे.

२. ललित व ललितेतर साहित्याचे स्वरूप समजून घेणे.

३. साहित्य प्रयोजनांचे आकलन करून घेणे.

४. साहित्याची निर्मितिप्रक्रिया आणि त्याचे स्वरूप आकलन करून घेणे.

५. भाषेतील अलंकार समजून घेणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	साहित्याचे स्वरूप ■ साहित्याच्या व्याख्या ● **पौर्वात्य** – भामह, मम्मट, आनंदवर्धन, विश्वनाथ **पाश्चात्त्य** – वर्डस्वर्थ,कोर्ट्हॉप,मॅथ्यू अर्नोल्ड, कार्लाइल ● **आधुनिक** – विनोबा भावे, अ. वा. कुलकर्णी, गंगाधर गाडगीळ, वि. ना. ढवळे, ■ ललित व ललितेतर साहित्य ■ ललित साहित्यातून व्यक्त होणाऱ्या अनुभवांचे विशेष– संवेदनात्मकता, भावनात्मकता, वैचारिकता, सेंद्रियता, सूचकता, विशिष्टता, विश्वात्मकता	१५	१

विभाग २ Module 2	**साहित्याचे प्रयोजन** ● प्रयोजन म्हणजे काय ? ● प्रयोजन आणि परिणाम यातील फरक ■ साहित्याची प्रयोजने : १) यश किंवा कीर्ती २) व्यवहारज्ञान ३) आनंद ४) उद्‌बोधन ५) आत्माविष्कार ६) जिज्ञासापूर्ती ७) जीवनानुभूती ८) इच्छापूर्ती अथवा स्वप्नरंजन ९) पलायनवाद (Escapism)	१५	१
घटक ३ Module 3	**साहित्यनिर्मितीची कारणे** ● साहित्यनिर्मितीचे स्वरूप ● साहित्यनिर्मितीची कारणे १) प्रतिभा – स्वरूप व वैशिष्ट्ये (प्रतिभाव्यापार, प्रतिभेचे अलौकिकत्व, अपूर्वनिर्मितिक्षम प्रतिभा, प्रतिभा ही वेडाची बहीण) २) बहुश्रुतता ३) अभ्यास ४) भावनात्मकता ५) संवेदनशीलता ६) उत्प्रेक्षा ७) चमत्कृती ८) स्वास्थ्य (शारीरिक, मानसिक) ९) साहित्यिकाचा जीवनविषयक दृष्टिकोण	१५	१
घटक ४ Module 4	**अलंकार** १) अतिशयोक्ती २) स्वभावोक्ती ३) दृष्टान्त ४) उपमा ५) अनुप्रास ६) रूपक (व्याख्या, स्वरूप आणि उदाहरणे अपेक्षित)	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	अलंकार (चार पैकी दोन)	१० गुण

सूचना :

१. विभाग चार वर वस्तुनिष्ठ प्रश्न असणार नाहीत.

२. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

- विविध साहित्य प्रवाहातील कोणत्याही एका साहित्यकृतीचे किंवा अनुवादित साहित्यकृतीचे परीक्षण करून सादरीकरण करणे.
- कोणत्याही भाषेतील एका चित्रपट वा नाटकाचे परीक्षण करून सादरीकरण करणे.

मूलभूत वाचन :

१. जोग, रा. श्री. — *अभिनव काव्यप्रकाश,* व्हीनस प्रकाशन, पुणे, आवृत्ती ७ वी, १९७५

२. गाडगीळ, स. रा. — *काव्यशास्त्रप्रदीप,* व्हीनस प्रकाशन, पुणे, आवृत्ती ४ थी, जानेवारी, १९९३

३. गोविलकर, लीला — *भारतीय साहित्यविचार,* स्नेहवर्धन, पुणे, २००३

४. वाळंबे, मो. रा. — *सुगम मराठी व्याकरण,* नितीन प्रकाशन, पुणे

५. देशपांडे, अ. ना. (संपा.) — *विनोबांची साहित्यदृष्टी,* परमधाम प्रकाशन, पवनार, वर्धा, १९७५

६. कुलकर्णी, अ. वा. — *साहित्यविचार,* प्रतिमा प्रकाशन, पुणे, आ.दु. १९९७

७. गाडगीळ, गंगाधर — *खडक आणि पाणी,* पॉप्युलर प्रकाशन, मुंबई, १९६०.

८. ढवळे, वि. ना. — *साहित्याचे तत्त्वज्ञान,* कॉन्टिनेन्टल प्रकाशन, पुणे

पूरक वाचन :

१. उपासे, शिवशंकर — *काव्यशास्त्र परिचय,* फडके प्रकाशन, कोल्हापूर, २०१३

२. कंगले, र. पं. — *प्राचीन काव्यशास्त्र,* मौज प्रकाशन, मुंबई, १९७४

३. देशमुख, मा. गो. — *मराठीचे साहित्यशास्त्र,* (ज्ञानेश्वर ते रामदास)

४. डॉ. नगेंद्र (अनुवादक : शैलजा करंदीकर) — *भारतीय काव्यशास्त्राचे मूळ प्रश्न,* सुविचार, नागपूर, पुणे, १९६७

संदर्भ ग्रंथ :

१. जाधव, उदय — *काव्यशास्त्र : आकलन आणि आस्वाद,* लोकपाल पब्लिकेशन, औरंगाबाद प्रथमावृत्ती, ५ सप्टेंबर, २०१३

२. पुंडे, दत्तात्रय व तावरे, स्नेहल (संपा.) — *साहित्य विचार,* स्नेहवर्धन प्रकाशन, पुणे, प्रथमावृत्ती, फेब्रुवारी, १९९५

३. पाटील, म. सु. — *भारतीयांचा साहित्यविचार,* चेतश्री प्रकाशन, अमळनेर

४. वासमकर, वि. दा. — *मराठीतील कलावादी समीक्षा,* अक्षरदीप प्रकाशन, कोल्हापूर, आ. प. २०१८

५. करंदीकर, गो. वि. — *ॲरिस्टॉटलचे काव्यशास्त्र,* पॉप्युलर प्रकाशन, मुंबई

६. जाधव, मा. मा. — अक्षरगाथा (मराठी साहित्यविचार विशेषांक) मासिक, नांदेड, एप्रिल, २०१४

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मराठी अभ्यास मंडळ

Board of Studies in Marathi

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Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semister No. 5 : अभ्यासपत्रिका क्र. VIII

Discipline Specific Elective (DSE-E2)

विद्याशाखीय विशेष निवड (DSE-E2)

मराठी भाषा व भाषाविज्ञान

उद्दिष्टे :

१. भाषोत्पत्तीचा अभ्यास करणे.

२. भाषाविज्ञानाचा परिचय करून घेणे.

३. भाषाविज्ञान आणि मराठी भाषा यांचा सहसंबंध जाणून घेणे.

४. स्वनविचार, रूपविचार व वाक्यविचारांचा परिचय करून घेणे.

५. मराठी भाषेविषयी विद्यार्थ्यांची आवड विकसित करणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	भाषोत्पत्ती विचार ● भाषेची उत्पत्ती – ईश्वरनिर्मित, राजनिर्मित, समाजनिर्मित ● भाषेच्या उत्पत्तीच्या उपपत्ती/सिद्धांत १. इंगित (Gesture) २. मुखाभिनय (Oral Gesture) ३. अनुकरण (Bow-Bow) ४. रणन (Ding Dong) ५. भावनाभिव्यक्ती (Pooh-Pooh) ६. श्रमपरिहार (Yo-he-Yo) ७. प्रेमगानमूलक (Sing-Song) ८. संपर्क (Contact) ९. क्रीडासक्ती (Play-Way) १०. समन्वय उपपत्ती/सिद्धांत	१५	१
विभाग २ Module II	भाषेचे स्वरूप, व्याख्या आणि वैशिष्ट्ये ● भाषा म्हणजे काय ? ● भाषेच्या व्याख्या : कृ. पां. कुलकर्णी, ना. गो. कालेलकर, श्री. न. गजेंद्रगडकर ● भाषेचे स्वरूप : समाजव्यवहाराचे साधन, ध्वनिमाध्यमता, प्रतीकात्मकता, संकेतबद्धता, भाषा – एक पद्धती, भाषा मानवी आहे. ● सी. एफ. हॉकेटने सांगितलेली भाषेची सात वैशिष्ट्ये दुहेरीपण, निर्मितिक्षमता, कार्यकारण संबंधाचा अभाव, यादृच्छिकता, अदलाबदलीची शक्यता, विशिष्टीकरण, स्थलकालातीतता, सांस्कृतिक संक्रमण या शिवाय – सामाजिक संस्था, अर्जित भाषा, परिवर्तनशीलता, रैखिकता इ. वैशिष्ट्यांचा विचार	१५	१

विभाग ३ Module III	स्वनिम व रूपिम विचार (स्थूल परिचय) अ. स्वनिम विचार १. स्वन २. स्वनिम ३. स्वनांतर (संकल्पना,स्वरूप,प्रकार) ब. रूपिम विचार १. रूप २. रूपिम ३. रूपिकांतर (संकल्पना,स्वरूप,प्रकार)	१५	१
विभाग ४ Module IV	वाक्यविचार ● पदबंध व वाक्याचे स्वरूप ● वाक्याचे प्रकार केवलवाक्य व त्याचे प्रकार, मिश्रवाक्य व त्याचे प्रकार, संयुक्त वाक्य व त्याचे प्रकार, वाक्याचे पृथक्करण	१५	१

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना :

१. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

१. स्वन–स्वनिम, रूप–रूपिम पैकी कोणत्याही एका घटकाच्या अनुषंगाने प्रात्यक्षिकांसह सादरीकरण अपेक्षित.

२. कोणत्याही एका साहित्यकृतीच्या निवडक भागातील वाक्यांचे प्रकार, पृथक्करण, विश्लेषणासह सादरीकरण अपेक्षित.

मूलभूत वाचन :

१. जोशी, प्र. न. — *सुबोध भाषाशास्त्र,* स्नेहवर्धन प्रकाशन, पुणे

२. गवळी, अनिल — *भाषाविज्ञान आणि मराठी भाषा,* हिरण्यकेशी प्रकाशन, कोल्हापूर

३. धोंगडे, रमेश — *भाषा आणि भाषाविज्ञान,* दिलीपराज प्रकाशन, पुणे

४. कानडे, मु. श्री. (संपा.) — *मराठीचा भाषिक अभ्यास,* स्नेहवर्धन प्रकाशन, पुणे

५. गजेंद्रगडकर, श्री. न. — *भाषा आणि भाषाशास्त्र,* व्हीनस प्रकाशन, पुणे

६. हिरेमठ, राजशेखर — *मराठी व्याकरण परिचय,* मेहता पब्लिशिंग हाऊस, पुणे

७. Hocket C.F. — A course in Modern Linguistics, Oxford, New York, 1958

पूरक वाचन :

१. कुलकर्णी, कृ. पां. — *मराठी भाषा : उद्‌गम आणि विकास,* मेहता पब्लिशिंग हाऊस, पुणे

२. मालशे, मिलिंद — *आधुनिक भाषाविज्ञान : सिद्धांत आणि उपयोजन,* लोकवाङ्‌मयगृह,मुंबई

३. कुलकर्णी, सुलक्षणा व कुबेर, वसंत — *भाषाविज्ञान परिचय,* फडके प्रकाशन, कोल्हापूर

४. दामले, मो. के. — *शास्त्रीय मराठी व्याकरण,* दामोदर सावळाराम आणि मंडळी, पुणे

संदर्भ ग्रंथ :

१. मालशे, पुंडे, सोमण (संपा.) — *भाषाविज्ञानपरिचय,* पद्मगंधा प्रकाशन, पुणे

२. पुंडे, द. दि. — *सुलभ भाषाविज्ञान,* स्नेहवर्धन प्रकाशन, पुणे

३. कदम, महेंद्र — *मराठीचे वर्णनात्मक भाषाविज्ञान,* स्नेहवर्धन प्रकाशन, पुणे

४. काळे, कल्याण/सोमण, अंजली (संपा.) — *आधुनिक भाषाविज्ञान,* प्रतिमा प्रकाशन, पुणे

५. पाटील, व्ही. एन. — *सुलभ भाषाविज्ञान व मराठी व्याकरण,* प्रशांत पब्लिकेशन्स, जळगाव, आ.दु. २, २०१६

६. भांड, बाबा व मगर, राजेंद्र — *भाषा आणि साहित्य, माझी भूमिका : सयाजीराव गायकवाड,* महाराजा सयाजीराव गायकवाड संशोधन व प्रशिक्षण संस्था, औरंगाबाद,२०२०

७. लामतुरे, प्रज्ञा — *ग्रामीण बोलीभाषेचे वैभव,* संस्कृती प्रकाशन, पुणे, २०१२

८. जाधव, मा. मा. (संपा.) — *अक्षरगाथा* (मराठी भाषा विशेषांक), मासिक, नांदेड, ऑक्टोबर, २०१३

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अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semister No. 5 : अभ्यासपत्रिका क्र. IX

Discipline Specific Elective (DSE-E3)

विद्याशाखीय विशेष निवड (DSE-E3)

मध्ययुगीन मराठी वाङ्मयाचा इतिहास (प्रारंभ ते इ.स.१५००)

उद्दिष्टे :

१. मध्ययुगीन मराठी वाङ्मयाचा कालिक अभ्यास करणे.

२. मध्ययुगीन मराठी वाङ्मयाचा स्थूल परिचय करून घेणे.

३. मध्ययुगीन मराठी वाङ्मयाचे स्वरूप, वैशिष्ट्ये अभ्यासणे.

४. मध्ययुगीन मराठी वाङ्मयातील महत्त्वाचे ग्रंथकार आणि ग्रंथ यांचा स्थूल परिचय करून घेणे.

५. मध्ययुगीन मराठी वाङ्मयाच्या गद्य, पद्य रचनेचे विशेष अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	■ **मराठी वाङ्मयाचा प्रारंभकाळ ते इ.स. १२०० पर्यंत** अ) विवेकसिंधूपूर्वकालीन रचना कुवलयमाला, मानसोल्लास, राजमतिप्रबोध, अमरनाथ संवाद, गोरक्षगीता इ. ब) मराठीतील आद्य ग्रंथकार मुकुंदराज यांची रचना विवेकसिंधू, पवनविजय, परमामृत क) मराठीतील आद्य कवयित्री महदंबा यांची रचना धवळे (पूर्वार्ध व उत्तरार्ध), मातृकी रुक्मिणीस्वयंवर	१५	१
विभाग २ Module II	■ **इ. स. १२०० ते १३०० (स्थूल कालखंड)** अ) महानुभावीय गद्य वाङ्मय म्हाइंभट – लीळाचरित्र, श्री. गोविंदप्रभूचरित्र व इतर रचना केसोबास – सूत्रपाठ, दृष्टांतपाठ, स्मृतिस्थळ	१५	१

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग २ Module II	ब) महानुभावीय पद्य वाङ्मय **सातीग्रंथ** (ग्रंथ व ग्रंथकार स्थूल परिचय) नरेंद्र – रुक्मिणी स्वयंवर भास्करभट्ट बोरीकर – शिशुपालवध, उद्धवगीता किंवा एकादशस्कंध दामोदर पंडित – वछाहरण पंडित विश्वनाथ – ज्ञानप्रबोध रवळोव्यास – सह्याद्रिवर्णन नारायणपंडित – श्री ऋद्धिपूरवर्णन	१५	१
विभाग ३ Module III	इ. स. १३०० ते १४०० (स्थूल कालखंड) अ) ज्ञानेश्वरांचे वाङ्मयीन कार्य ज्ञानेश्वरी, अमृतानुभव, चांगदेवपासष्टी, हरिपाठाचे अभंग व इतर रचना ब) नामदेवांची अभंगरचना क) सावता माळी, गोरोबा कुंभार, मुक्ताबाई, सेना महाराज, नरहरी सोनार, चोखामेळा, जनाबाई, कान्होपात्रा यांच्या रचना	१५	१
विभाग ४ Module IV	इ. स. १४०० ते १५०० (स्थूल कालखंड) अ) अन्य संप्रदायातील प्रमुख ग्रंथकार आणि त्यांची ग्रंथरचना सत्यमालनाथ, चोंभा (नाथ संप्रदाय) शांतलिंग आणि मन्मथशिवलिंग (लिंगायत संप्रदाय) गुणकीर्ती व जिनदासनामा (जैन मराठी कवी) नृसिंह सरस्वती आणि दासोपंत (दत्त संप्रदाय) अज्ञानसिद्ध व बहिराजातवेद (नागेश संप्रदाय) शेख महंमद आणि हुसेन अंबरखान (मुस्लीम मराठी कवी) फादर स्टिफन्स, फादर क्रुवा (ख्रिस्ती मराठी कवी)	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना :

१. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

१) मध्ययुगीन मराठी वाङ्मयातील कोणत्याही एका ग्रंथकाराच्या रचना विशेषावर सादरीकरण.

२) कोणत्याही एका संत कवीच्या काव्यातील सामाजिकतेवर सादरीकरण.

३) कोणत्याही एका संत कवयित्रीच्या कवितेतील आत्मनिष्ठा यावर आधारित सादरीकरण.

मूलभूत वाचन :

१. नसिराबादकर, ल. रा. — *प्राचीन मराठी वाङ्मयाचा इतिहास,* फडके प्रकाशन, कोल्हापूर
२. पठाण, यू. म. — *महानुभाव साहित्य संशोधन खंड १,* मराठवाडा विद्यापीठ प्रकाशन, औरंगाबाद
३. देशपांडे, अ. ना. — *प्राचीन मराठी वाङ्मयाचा इतिहास खंड १ ते ४*
४. पांगारकर, ल. रा. — *प्राचीन मराठी वाङ्मयाचा इतिहास खंड १ ते ३,* महाराष्ट्र साहित्य परिषद प्रकाशन, पुणे
५. पसारकर, शे. दे. — *वेलू गेला गगनावरी,* सुविद्या प्रकाशन, सोलापूर

पूरक वाचन :

१. शेणोलीकर, ह. श्री. — *प्राचीन मराठी वाङ्मयाचे स्वरूप,* व्हीनस प्रकाशन, पुणे
२. पांगारकर, ल. रा. — *मराठी वाङ्मयाचा इतिहास खंड १ व २,*
३. तुळपुळे, शं. गो. — *मराठी वाङ्मयाचा इतिहास,* महाराष्ट्र साहित्य परिषद, पुणे
४. मांडवकर, भाऊ — *संत नामदेव दर्शन,* सेवा प्रकाशन, अमरावती
५. इनामदार, हे. वि. (संपा.) — *संत नामदेव काव्यसंभार आणि संत परिवार*
६. उपासे, शिवशंकर — *महाराष्ट्र भूषण सहा संत साहित्यिक,* फडके प्रकाशन, कोल्हापूर, २०१२
७. उपासे, शिवशंकर (संपा.) — *शांतलिंगकृत कर्णहंस,* प्रका. शरण संस्कृती अध्ययन केंद्र, सिद्ध संस्थान मठ, निडसोसी, ता. हुक्केरी, जि. बेळगाव
८. पसारकर, शे. दे. (संपा.) — *श्री मन्मथशिवलिंगकृत परमरहस्य,* शैवभारती शोध प्रतिष्ठान, वाराणसी, २००१
९. केळुसकर, कृष्णराव — *संत तुकाराम,* साकेत प्रकाशन, औरंगाबाद
१०. फाटक, न. र. — *श्री एकनाथ : वाङ्मय आणि कार्य,* मौज प्रकाशन गृह, मुंबई
११. परमार्ग सेवक श्री बाळकृष्णशास्त्री महानुभाव — *महानुभावपंथ,* प. पू. मधुकरशास्त्री कवीश्वर, पंचकमिटी संस्थान, श्री देवदेवेश्वर, माहूर, आ. आठवी, २०१४

संदर्भ ग्रंथ :

१. देऊळगावकर, चंद्रकांत (संपा.) — मन्मथस्वामी व्यक्ती आणि वाङ्मय, प्रका. शैवभारती शोध प्रतिष्ठान, जंगमवाडी मठ, वाराणसी
१. पाटील, तानाजी — *संत साहित्यातील सामाजिकता,* विश्वकर्मा पब्लिकेशन, पुणे
२. सुंठणकर, बा. र. — *महाराष्ट्रीय संतमंडळीचे ऐतिहासिक कार्य,* बेळगाव
३. सरदार, गं. बा. — *संत वाङ्मयाची सामाजिक फलश्रुती,* म. सा. प. पुणे
४. जाधव, रा. ग. — *आनंदाचा डोह,* प्राज्ञ पाठशाळा मंडळ, वाई
५. जाधव, रा. ग. — *वागर्थ,* प्रतिमा प्रकाशन, पुणे
६. कामत, अशोक व बडवे, सतीश (संपा.) — *संत नामदेवविषयक अभ्यास,* आळंदी
७. देशमुख, उषा — *मांदियाळी,* माया प्रकाशन, नागपूर
८. पाटील, सदाशिव — *तुकाराम आणि कबीर,* दर्या प्रकाशन, पुणे
९. घोणसे, शामा — *वीरशैवांचे मराठी–हिंदी वाङ्मय : एक अभ्यास,* शैवभारती शोध प्रतिष्ठान, जंगमवाडी मठ, वाराणसी
१०. प्रियोळकर, अ. का. — *मुसलमानांची जुनी मराठी कविता*
११. ढेरे, रा. चिं. — *मुसलमान मराठी संतकवी,* पद्मगंधा प्रकाशन, पुणे
१२. पठाण, यू. म. — *मुसलमान (सुफी) संतांचे मराठी साहित्य*
१३. मोरजे, गंगाधर — *मराठी ख्रिस्ती वाङ्मय, फादर स्टिफन्स ते १९६०,* अहमदनगर
१४. उपाध्ये, बाबुराव — *संत गोरा कुंभार : वाङ्मय दर्शन,* स्नेहवर्धन प्रकाशन, पुणे
१५. इर्लेकर, सुहासिनी — *संत कवी आणि कवयित्री : एक अनुबंध,* स्नेहवर्धन प्रकाशन, पुणे
१६. अक्कोळे, सुभाषचंद्र — *प्राचीन मराठी जैन साहित्य,* सुविचार प्रकाशन, नागपूर
१७. पाटंगणकर, विद्यासागर — *मराठी संत कवयित्रींचा इतिहास,* साहित्य अकादमी, नवी दिल्ली
१८. होनमाने, धनंजय — *तंजावरची मराठी कीर्तनपरंपरा,* स्नेहवर्धन, पुणे, २०१७

शिवाजी विद्यापीठ, कोल्हापूर

SHIVAJI UNIVERSITY, KOLHAPUR

मराठी अभ्यास मंडळ

Board of Studies in Marathi

पसंतीवर आधारित श्रेयांक पद्धती

Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semister No. V : अभ्यासपत्रिका क्र. X

Discipline Specific Elective (DSE-E4)

विद्याशाखीय विशेष निवड (DSE-E4)

मराठी भाषा व अर्थार्जनाच्या संधी

पाठ्यपुस्तक : मराठी भाषा व अर्थार्जनाच्या संधी (संपादन)

शिवाजी विद्यापीठ प्रकाशन, कोल्हापूर

उद्दिष्टे :

१. सर्जनशील लेखनप्रक्रिया समजून घेणे.

२. वैचारिक लेखनाचे स्वरूप अभ्यासणे.

३. शोधनिबंध व प्रकल्पलेखन कौशल्य समजून घेणे.

४. आंतरजालावरील मराठी लेखनपद्धती अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	सर्जनशील लेखन ■ सर्जनशील लेखन – संकल्पना व स्वरूप ● कथा – संकल्पना, स्वरूप ● कथेचे घटक ● प्रात्यक्षिकासह कथालेखन	१५	१
विभाग २ Module II	वैचारिक लेखन ● वैचारिक लेखन : संकल्पना व स्वरूप ● वैचारिक लेखनाची पद्धत ● वैचारिक लेखनाचे प्रकार ● प्रात्यक्षिकासह वैचारिक लेखन	१५	१

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग ३ Module III	शोधनिबंध व प्रकल्पलेखन (स्थूल परिचय) ● संशोधन : संकल्पना, स्वरूप, महत्त्व ● संशोधनपर लेखनप्रकार परिचय १. शोधनिबंध – स्वरूप व पद्धती २. संशोधन प्रकल्प – स्वरूप व पद्धती ३. प्रबंधिका ४. प्रबंध ● संशोधनपर लेखनाची पथ्ये व भाषा	१५	१
विभाग ४ Module IV	आंतरजालावरील (Internet) मराठी ● आंतरजालावरील मराठीविषयक लेखनाचे स्वरूप ● नोंदी लेखन, विश्वकोश, विकिपीडिया इ. ● आंतरजालावरील मराठी संकेतस्थळांचा परिचय १. राज्य मराठी विकास संस्था २. महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळ ३. भाषा संचालनालय ४. मराठी भाषा विभाग, महाराष्ट्र शासन ५. मराठी साहित्य परिषद, पुणे ६. विश्वकोश मंडळ ७. इतर संकेतस्थळे – साहित्य अकादमी, नॅशनल बुक ट्रस्ट, भारतीय भाषा संस्थान, म्हैसूर इ. ● प्रात्यक्षिकासह आंतरजालावर मराठीविषयक लेखन	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. प्रश्न क्र. ४ मध्ये ४ पैकी २ प्रश्न उपयोजनावर आधारित असतील.

२. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

१. भाषा, साहित्य, संस्कृती व माध्यमविषयक कोणत्याही एका विषयावर शोधनिबंधाचे सादरीकरण करणे.

मूलभूत वाचन :

१. जोशी, सुधा — *कथा संकल्पना आणि समीक्षा,* मौज प्रकाशन, मुंबई, २००२

२. सारंग, विलास — *सर्जनशोध आणि लिहिता लेखक,* मौज प्रकाशन, मुंबई

३. मालशे, मिलिंद (संपा.) — *शोधनिबंधाची लेखनपद्धती* (सुधारित आवृत्ती) लोकवाङ्मय गृह, मुंबई

४. पाटील, आनंद — *सृजनात्मक लेखन,* पद्मगंधा प्रकाशन, पुणे, २००९

५. काळे, कल्याण, पुंडे, द. दि. — *व्यावहारिक मराठी,* निराली प्रकाशन, पुणे, २००७

६. वेलणकर, जयंत — *प्रबंध कसा लिहावा,* साहित्य प्रसारक केंद्र, नागपूर

७. कऱ्हाडे, सदा — *संशोधन : सिद्धांत आणि पद्धती,* लोकवाङ्मय गृह, मुंबई

८. चुनेकर, सु. रा. व पठारे, रंगनाथ (संपा.) — *संशोधन स्वरूप आणि पद्धती,* शि. प्र. संस्था, संगमनेर

९. वरखेडे, रमेश नारायण व वरखेडे, मंगला रमेश — *संशोधनाचे पद्धतिशास्त्र,* ॲग्रामण्ये इन्स्टिट्यूट ऑफ एज्युकेशन, एक्सलन्स, पुणे

१०.रोकडे, सुहास — *संगणक व माहिती तंत्रज्ञान,* नाथे प्रकाशन, पुणे

पूरक वाचन :

१. नसिराबादकर, ल. रा. — *व्यावहारिक मराठी,* फडके प्रकाशन, कोल्हापूर

२. रेगे, मे. पुं. (संपा.) — *नवभारत* (मासिक), व्यावहारिक मराठी विशेषांक, प्राज्ञ पाठशाळा मंडळ, वाई, ऑगस्ट–सप्टेंबर, १९८१

३. गवस, राजन; शिंदे, अरुण व पाटील, गोमटेश्वर — *भाषिक सर्जन आणि उपयोजन,* दर्या प्रकाशन, पुणे, २०१२

४. गोविलकर, लीला पाटणकर, जयश्री — *व्यावहारिक मराठी,* स्नेहवर्धन पब्लिशिंग हाऊस, पुणे, २००७

५. शेख, यास्मिन — *मराठी लेखन मार्गदर्शिका,* राज्य मराठी विकास संस्था व शुभदा सारस्वत प्रकाशन, पुणे, १९९९/सुधारित तिसरी आवृत्ती, राज्य मराठी विकास संस्था, मुंबई, डिसें.२०१७

६. शिकारपूरकर, दीपक — *दिव्यांगमित्र संगणक,* उत्कर्ष प्रकाशन, पुणे

७. शेख, यास्मिन — मराठी हस्तलेखन कोश, दुसरी आवृत्ती, हर्मिस प्रकाशन, पुणे, २०१५

संदर्भ ग्रंथ :

१. तौर, पृथ्वीराज — *मराठी भाषिक कौशल्ये विकास,* अथर्व पब्लिकेशन्स, धुळे, २०१८

२. जोशी, प्रभाकर व वले, वासुदेव — *उपयोजित मराठी भाग १,* प्रशांत पब्लिकेशन्स, जळगाव, २०१७

३. सारंग, विलास — *सर्जनशोध आणि लिहिता लेखक,* मौज प्रकाशन, मुंबई

४. पाटील, आनंद — *सृजनात्मक लेखन,* पद्मगंधा प्रकाशन, पुणे

५. लोखंडे, शशिकांत — *नवी जाणीव,* लोकवाङ्मय गृह, मुंबई, २०१२

६. गवळी, अनिल — *मराठी भाषा : आज आणि उद्या,* दर्या प्रकाशन, पुणे, २०१८

७. गवळी, अनिल व मोरे, नंदकुमार — *भाषासंवाद,* सायन पब्लिकेशन, पुणे, २०१३

८. कांबळे, विनोद — *सर्जननोंदी,* वाचनकट्टा प्रकाशन, प्रा. लि., कोल्हापूर, २०१९

९. वरखेडे, मंगला — प्रकल्प अभ्यास, नाशिक

शिवाजी विद्यापीठ, कोल्हापूर

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Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-५ : Semister No. V : अभ्यासपत्रिका क्र. XI

Discipline Specific Elective (DSE-E5)

विद्याशाखीय विशेष निवड (DSE-E5)

वाङ्मय प्रवाहाचे अध्ययन : मध्ययुगीन

पाठ्यपुस्तक : दृष्टांतपाठ-निवडक दृष्टांत (संपादन)
शिवाजी विद्यापीठ प्रकाशन, कोल्हापूर

उद्दिष्टे :

१. मध्ययुगीन महाराष्ट्र व महानुभाव पंथ यांचा परिचय करून घेणे.
२. महानुभाव वाङ्मयाच्या प्रेरणा व स्वरूप समजून घेणे.
३. महानुभावीय ग्रंथकार केसोबास यांचा परिचय करून घेणे.
४. दृष्टांतपाठातील आशयस्वरूप व अभिव्यक्ती विशेष अभ्यासणे.
५. दृष्टांतपाठातील भाषिक वैभवाचा परिचय करून घेणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	● मध्ययुगीन महाराष्ट्र आणि महानुभावीय गद्याच्या प्रेरणा व स्वरूप ● महानुभाव गद्य ग्रंथकार केसोबास यांचा परिचय ● दृष्टांतपाठाचे स्वरूप	१५	१
विभाग २ Module II	■ दृष्टांतपाठातील आशयसूत्रे ● सामाजिकता ● सांस्कृतिकता ● प्रादेशिकता ● पंथीय निष्ठा ● तत्त्वज्ञान व मूल्यविचार	१५	१
विभाग ३ Module III	■ दृष्टांतपाठातील अभिव्यक्ती विशेष ● निवेदन/कथनशैली ● व्यक्तिचित्रणे ● घटना, प्रसंगवर्णने ● प्रतिमा व प्रतीके ● रचनाविशेष	१५	१
विभाग ४ Module IV	■ दृष्टांतपाठातील भाषावैभव ● शब्दसौष्ठव ● अल्पाक्षरत्व ● सुलभ रचनाविशेष ● म्हणी,वाक्प्रचार,उखाणे ● अलंकार वैभव ● व्याकरणिक विशेष	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. विभाग एकवर वस्तुनिष्ठ प्रश्न असणार नाहीत.

२. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

सेमिनार विषय :

मध्ययुगीन मराठी वाङ्मयातील कोणत्याही एका साहित्यकृतिआधारे सामाजिक, सांस्कृतिक, मूल्यविचार, भाषाविशेष इत्यादींपैकी कोणत्याही एका विषयानुषंगाने सादरीकरण करणे.

मूलभूत वाचन :

१. तुळपुळे, शं. गो. (संपा.) *दृष्टांतपाठ, केशिराज संकलित,* व्हीनस प्रकाशन, पुणे

२. कोलते, वि. भि. *महानुभाव तत्त्वज्ञान,* अरुण प्रकाशन, मलकापूर

३. कोलते, वि. भि. *महानुभाव आचारधर्म,* अरुण प्रकाशन, मलकापूर

४. राजनकर, सुहास *दृष्टांतपाठ : अन्वय आणि चिकित्सा,* ऋचा प्रकाशन, नागपूर

५. कुंदप, कोमल कन्हैया *चक्रधर निरुपन दृष्टांतपाठ विवेचन,* सातारा

पूरक वाचन :

१. पठाण, यू. म. *महानुभाव साहित्य संशोधन खंड १,* मराठवाडा विद्यापीठ प्रकाशन, औरंगाबाद

२. पंजाबी, माधव (संपा.) *श्री. च. पाणी व्यासकृत दृष्टांत अन्वय व्याख्यान*

३. आवलगावकर, रमेश *महानुभावांची अन्वयस्थळे,* चंद्रकांत प्रकाशन, पुणे

४. ढेरे, रा. चिं. *प्राचीन मराठीच्या नवधारा,* मोघे प्रकाशन, कोल्हापूर

संदर्भ ग्रंथ :

१. पानसे, मु. ग. *यादवकालीन महाराष्ट्र,* मुंबई मराठी ग्रंथ संग्रहालय, मुंबई

२. बोरगांवकर, वसंत *प्राचीन मराठी चरित्रलेखन,* कॉन्टिनेन्टल प्रकाशन, पुणे

३. तुळपुळे, शं. गो. *यादवकालीन मराठी भाषा,* व्हीनस प्रकाशन, पुणे

४. देशमुख, उषा *मराठी साहित्याचे आदिबंध,* लोकवाङ्मयगृह, मुंबई

५. ढेरे, रा. चिं. *महाराष्ट्राचा देव्हारा,* विश्वकर्मा साहित्यालय, पुणे

६. पाठक, अरुणचंद्र *स्थानपोथी : एक पुरातत्वीय अभ्यास,* म.रा.साहित्य संस्कृती मंडळ, मुंबई

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Choice Based Credit System

बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semister No. 6 : अभ्यासपत्रिका क्र. XII

Discipline Specific Elective (DSE-E126)

विद्याशाखीय विशेष निवड (DSE-E126)

साहित्यविचार

उद्दिष्टे :

१. शब्दशक्तींचे आकलन करून घेणे.

२. साहित्यातील रसाचे स्वरूप व रसप्रक्रिया समजून घेणे.

३. निर्मितीच्या आनंदाची मीमांसा करणे.

४. व्यवहार भाषा, शास्त्रभाषा आणि साहित्यभाषा यांतील भेद समजून घेणे.

५. साहित्यभाषेचे आकलन करून घेणे.

६. भाषेतील छंद व वृत्ते यांचा अभ्यास करणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	**शब्दशक्ती** ■ शब्दशक्ती म्हणजे काय ? १) **अभिधा**–व्याखा, स्वरूप व प्रकार (योग, रूढी, योगरूढी) २) **लक्षणा** – व्याख्या, स्वरूप ● लक्षणेस आवश्यक गोष्टी अ) मुख्यार्थबाध ब) मुख्यार्थ–लक्ष्यार्थ संबंध क) रूढी व प्रयोजन ● लक्षणेचे महत्त्व ३) **व्यंजना** – व्याख्या, स्वरूप ● व्यंजनेचे मुख्य दोन प्रकार अ) शाब्दी व्यंजना ब) आर्थी व्यंजना ● व्यंजनेचे साहित्यातील महत्त्व	१५	१

विभाग २ Module 2	अ) रसविचार ● रस म्हणजे काय ? ● स्थायिभाव व रस ● भरताचे रससूत्र ब) काव्यानंदमीमांसा ● काव्यानंदमीमांसा म्हणजे काय ? ● कवीचा आनंद १) क्रीडानंद २) निर्मितीचा आनंद ३) आत्माविष्कारानंद ● रसिकाचा आनंद १) ज्ञानानंद २) जिज्ञासापूर्ती ३) पुन:प्रत्ययाचा आनंद ● करुणरसानंद १) केवलानंदवाद २) विरेचन (कॅथार्सिस)	१५	१
घटक ३ Module 3	साहित्याची भाषा १) व्यवहारभाषा, शास्त्रभाषा व साहित्यभाषा : साम्यभेद २) साहित्याचे माध्यम भाषा ३) साहित्य भाषेचे सौंदर्य ४) साहित्य भाषेची विविधता	१५	१
घटक ४ Module IV	छंद व वृत्ते अ) छंद – १) ओवी २) अभंग ३) मुक्तच्छंद ब) वृत्ते – १) भुजंगप्रयात २) वसंततिलका ३) दिंडी (व्याख्या, स्वरूप व उदाहरणे अपेक्षित)	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	छंद व वृत्ते (चार पैकी दोन)	१० गुण

शिवाजी विद्यापीठ, कोल्हापूर

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बी.ए. भाग-३ : B.A. Part-III

अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semister No. 6 : अभ्यासपत्रिका क्र. XIII

Discipline Specific Elective (DSE-E127)

विद्याशाखीय विशेष निवड (DSE-E127)

मराठी भाषा व भाषाविज्ञान

उद्दिष्टे :

१. मराठी भाषेची वर्णव्यवस्था समजून घेणे.

२. ध्वनी व अर्थपरिवर्तनाची कारणे व प्रकार यांची माहिती करून घेणे.

३. प्रमाणभाषेचे स्वरूप व विशेष अभ्यासणे.

४. बोलींचे स्वरूप व विशेष समजून घेणे.

५. मराठी भाषेबद्दलची विद्यार्थ्यांची आवड विकसित करणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	मराठीची वर्णमाला ● ध्वनी व वर्ण, मराठीची वर्णमाला, पारंपरिक स्वर व त्यांचे वर्गीकरण ● स्वरांचे ध्वनिशास्त्रदृष्ट्या व उच्चारण स्थानानुसार विश्लेषण ● स्वरांचे प्रकार हस्व, दीर्घ, सिद्ध, साधित, सजातीय, विजातीय ● मराठीची स्वर संख्या (पारंपरिक व नवीन) ● मराठीतील व्यंजन विचार ● व्यंजनांचे प्रकार १. स्पर्श व्यंजने २. कठोर व मृदू व्यंजने ३. अल्पप्राण व महाप्राण ४. अनुनासिके ५. तालव्य व्यंजने ६. अंतःस्थ व्यंजने ७. उष्म व्यंजने ८. संयुक्त व्यंजने ९. मूर्धन्य ● मराठीची व्यंजन संख्या (पारंपरिक व नवीन) ● मराठीची वर्ण संख्या निश्चितीकरण	१५	१

विभाग २ **Module II**	मराठीचे ध्वनिपरिवर्तन ● भाषेची उच्चारप्रक्रिया ● ध्वनिपरिवर्तन म्हणजे काय? ● व्याख्या आणि विशेष निरपवाद, नियमित, अज्ञेय, सार्वत्रिक ध्वनिपरिवर्तन ● कारणे जित – जेते संबंध, भिन्न भाषिक संबंध, आळस, अनुकरणाची अपूर्णता, वागेंद्रियातील दोष, श्रवणेंद्रियातील दोष, उच्चारशीघ्रता, अज्ञान, आघात, उच्चारसौकर्य, आहार, भौगोलिकता, वर्गसिद्धान्त, लोकभ्रम, सादृश्यता ● प्रकार अंत्यस्वनलोप, एकस्वनीकरण, आद्यस्वनागम, मध्यस्वनागम, अंत्यस्वनागम, सान्निध परिणाम, समानस्वनलोप, विसदृशीकरण, घोषीकरण, अघोषीकरण, मात्राभेद, सदृशता, अतिशुद्धी, दुष्प्रयोग, स्वनविपर्यय ● ध्वनिपरिवर्तनाचा मराठी भाषेवरील परिणाम	१५	१
विभाग ३ **Module III**	मराठीचे अर्थपरिवर्तन ● अर्थपरिवर्तन म्हणजे काय ? ● व्याख्या आणि स्वरूप अर्थ म्हणजे निर्देश, प्रतिमा, संकल्पना व विचार ● अर्थपरिवर्तनाची कारणे साम्यतत्त्व, रूपक – लक्षणाजन्य शब्द, बदलते समाजजीवन, अशुभतापरिहार, ग्राम्यतापरिहार, अतिशयोक्ती, शब्दसिद्धी, अतिपरिचयातून सभ्यता, अत्यादरदर्शन, सांस्कृतिक आदान ● अर्थपरिवर्तनाचे प्रकार – अर्थविस्तार, अर्थसंकोच, अर्थप्रशस्ती, अर्थच्युती, अर्थापकर्ष, अर्थान्तर, अर्थभ्रंश, अर्थादेश, अर्थभेद, अर्थसार ● अर्थपरिवर्तनाचा मराठी भाषेवरील परिणाम	१५	१
विभाग ४ **Module IV**	प्रमाण मराठी भाषा आणि तिच्या बोली ● प्रमाण मराठी : संकल्पना, स्वरूप, विशेष ● बोली : संकल्पना, स्वरूप, विशेष ● मराठीच्या बोली : अहिराणी, वऱ्हाडी, चंदगडी, मालवणी या निवडक बोलींचे स्वरूप व विशेष	१५	१

सूचना :

१. विभाग चार वर वस्तुनिष्ठ प्रश्न असणार नाहीत.

२. गटप्रकल्पासाठी अंतर्गत मूल्यमापनाकरिता प्रती विद्यार्थ्यास दहा गुण आहेत.

गटप्रकल्प विषय : साहित्यनिर्मितिप्रक्रिया संदर्भात कोणत्याही एका साहित्यिकाची मुलाखत घेणे.

मूलभूत वाचन :

१. जोग, रा. श्री. — *अभिनव काव्यप्रकाश,* व्हीनस प्रकाशन, पुणे, आवृत्ती ७ वी, जानेवारी, १९७५

२. गाडगीळ, स. रा. — *काव्यशास्त्रप्रदीप,* व्हीनस प्रकाशन, पुणे, आवृत्ती ४ थी, जानेवारी, १९९३

३. वाटवे, के. ना. — *रसविमर्श,* नवीन किताबखाना, पुणे, १९४२

४. वाळंबे, मो. रा. — *सुगम मराठी व्याकरण लेखन,* नितीन प्रकाशन, पुणे

५. नेमाडे, भालचंद्र — *साहित्याची भाषा,* साकेत प्रकाशन, औरंगाबाद, आ. दु. १९९८

पूरक वाचन :

१. जोशी, पं. महादेवशास्त्री — *सुलभ काव्याशास्त्र,* एस. जगन्नाथ आणि कं., पुणे

२. उपासे, शिवशंकर — *काव्यशास्त्र परिचय,* फडके प्रकाशन, कोल्हापूर, २०१३

३. जाधव, उदय — *काव्यशास्त्र : आकलन आणि आस्वाद,* लोकपाल पब्लिकेशन, औरंगाबाद, प्रथमावृत्ती, ५ सप्टेंबर २०१३

४. शिरवाडकर, के. रं. — *साहित्यवेध,* मेहता पब्लिशिंग हाऊस, पुणे, प्रथमावृत्ती, जानेवारी, १९९८

संदर्भ ग्रंथ :

१. कुरुंदकर, नरहर — *रससूत्र,* इंद्रायणी साहित्य, पुणे.

२. सोनार, ब. लु. — *भारतीय साहित्य विचार,* प्रज्ञा, अमळनेर, १९८८

३. मोरे, मोरेश्वर सखाराम — *मराठी व्याकरण,* चित्रशाळा, पुणे, १९७०

४. वासमकर, वि. दा. — *मराठीतील कलावादी समीक्षा,* अक्षरदीप प्रकाशन, कोल्हापूर, आ. प. २०१८

५. तुकदेव, रोहिणी — *ओवी छंद : रूप आणि आविष्कार,* प्रतिमा प्रकाशन, पुणे

६. हिरेमठ, राजशेखर — *मराठी व्याकरण परिचय,* मेहता पब्लिशिंग हाऊस, पुणे, १९८८

७. जाधव, मा. मा. — *अक्षरगाथा* (मराठी साहित्यविचार विशेषांक), मासिक, नांदडे, एप्रिल, २०१४

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. विभाग एकवर वस्तुनिष्ठ प्रश्न असणार नाही.

२. अंतर्गत मूल्यमापनाकरिता सेमिनारसाठी दहा गुण आहेत.

गटप्रकल्प विषय :

१. आपल्या परिसरातील कौटुंबिक, सांस्कृतिक, कृषिविषयक, औद्योगिक क्षेत्रात जी बोलीभाषा बोलली जाते त्या बोलीभाषेतील शब्द, वाक्य, वाक्प्रचार, म्हणी, उखाणे यांचे संकलन आणि विश्लेषणासह गटप्रकल्प अपेक्षित.

२. आपल्या परिसरातील लोककथा, लोकगीते यांचे संकलन करून त्यातील भाषिक विशेषांच्या विश्लेषणावर आधारित गटप्रकल्प अपेक्षित.

मूलभूत वाचन :

१. कुलकर्णी, कृ. पां. — *मराठी भाषा : उद्गम आणि विकास,* मेहता पब्लिशिंग हाऊस, पुणे
२. कानडे, मु. श्री. (संपा.) — *मराठीचा भाषिक अभ्यास,* स्नेहवर्धन प्रकाशन, पुणे
३. गजेंद्रगडकर श्री. न. — *भाषा आणि भाषाशास्त्र,* व्हीनस प्रकाशन, पुणे
४. कुलकर्णी कृ. पां. — *शब्द : उद्गम आणि विकास*
५. जोगळेकर गं. ना. — *अभिनव भाषाविज्ञान,* सुविचार प्रकाशन, पुणे
६. जोशी, प्र. न. — *सुबोध भाषाशास्त्र,* स्नेहवर्धन प्रकाशन, पुणे
७. दामले, मो. के. — *शास्त्रीय मराठी व्याकरण,* दामोदर सावळाराम आणि मंडळी, पुणे
८. कालेलकर, ना. गो. — *ध्वनिविचार,* मौज प्रकाशन, मुंबई
९. पोतदार, अनुराधा — *मराठीचा अर्थविचार,* पुणे विद्यापीठ प्रकाशन, पुणे
१०. कालेलकर, ना. गो. — *भाषा आणि संस्कृती,* मौज प्रकाशनगृह, मुंबई
११. देवी, गणेश व जाखडे, अरुण (संपा.) — *भारतीय भाषेचे लोकसर्वेक्षण,* पद्मगंधा प्रकाशन, पुणे

पूरक वाचन :

१. हिरेमठ, राजशेखर — *मराठी व्याकरण परिचय,* मेहता पब्लिशिंग हाऊस, पुणे
२. गवळी, अनिल — *भाषाविज्ञान आणि मराठी भाषा,* हिरण्यकेशी प्रकाशन, कोल्हापूर
३. कुलकर्णी, सुलक्षणा व कुबेर, वसंत — *भाषाविज्ञान परिचय,* फडके प्रकाशन, कोल्हापूर

संदर्भ ग्रंथ :

१. पुंडे, द. दि. — *सुलभ भाषाविज्ञान,* स्नेहवर्धन प्रकाशन, पुणे
२. कदम, महेंद्र — *मराठीचे वर्णनात्मक भाषाविज्ञान,* स्नेहवर्धन प्रकाशन, पुणे
३. कालेलकर, ना. गो. — *भाषा, इतिहास आणि भूगोल,* मौज मुंबई
४. शेख, यास्मिन — *मराठी लेखन मार्गदर्शिका,* राज्य मराठी विकास संस्था, मुंबई
५. हिरेमठ, राजशेखर — *मराठी व्याकरण परिचय,* मेहता पब्लिशिंग हाऊस, पुणे
६. लामतुरे, प्रज्ञा — *ग्रामीण बोलीभाषेचे वैभव,* संस्कृती प्रकाशन, पुणे
७. जंबाले, विठ्ठल — *ग्रामीण कादंबरी : मराठवाडी बोलीचे स्वरूप,* चिन्मय प्रकाशन, औरंगाबाद
८. पाटील, व्ही. एन. — *सुलभ भाषाविज्ञान,* प्रशांत पब्लिकेशन्स, जळगाव, २०१६
९. भांड, बाबा व मगर, राजेंद्र — *भाषा आणि साहित्य : माझी भूमिका : सयाजीराव गायकवाड,* महाराजा सयाजीराव गायकवाड संशोधन व प्रशिक्षण संस्था, औरंगाबाद
१०. केळकर, तन्मय (अनु.) — *पंजाबच्या भाषा आणि लिपीची समस्या : शहीद भगतसिंग,* प्रका. भाषाविकास संशोधन संस्था, कोल्हापूर

शिवाजी विद्यापीठ, कोल्हापूर

SHIVAJI UNIVERSITY, KOLHAPUR

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अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semister No. 6 : अभ्यासपत्रिका क्र. XIV

Discipline Specific Elective (DSE-E128)

विद्याशाखीय विशेष निवड (DSE-E128)

मध्ययुगीन मराठी वाङ्मयाचा इतिहास (इ.स.१५०० ते इ.स.१८००)

उद्दिष्टे :

१. मध्ययुगीन मराठी वाङ्मयाचा कालिक अभ्यास करणे.

२. मध्ययुगीन मराठी वाङ्मयाचा स्थूल परिचय करून घेणे.

३. पंडित कवी व त्यांची रचना यांचा परिचय करून घेणे.

४. बखर वाङ्मय आणि शाहिरी वाङ्मय यांचे स्वरूप, विशेष अभ्यासणे.

५. मध्ययुगीन मराठी गद्य, पद्य रचनेचे विशेष अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	इ. स. १५०० ते इ.स. १६०० एकनाथांची साहित्य संपदा चतु:श्लोकी भागवत, एकनाथी भागवत, भावार्थ रामायण, गवळणी, भारुडे इत्यादी रचना	१५	१
विभाग २ Module II	इ. स. १६०० ते इ. स. १७०० (स्थूल कालखंड) अ) तुकारामांची अभंगरचना ब) रामदासांची ग्रंथरचना करुणाष्टके, रामायणे, मनाचे श्लोक, दासबोध, स्फुट प्रकरणे	१५	१
विभाग ३ Module III	इ. स. १६०० ते इ. स. १८०० (स्थूल कालखंड) निवडक पंडित कवींच्या काव्याचा अभ्यास १) मुक्तेश्वर २) वामन पंडित ३) रघुनाथ पंडित ४) श्रीधर ५) मोरोपंत	१५	१
विभाग ४ Module IV	इ. स. १५०० ते इ.स. १८०० (स्थूल कालखंड) अ) बखर वाङ्मय शिवपूर्वकालीन बखरी, शिवकालीन बखरी, पेशवेकालीन बखरी-स्वरूप, विशेष ब) शाहिरी वाङ्मय (लावणी व पोवाडा) १) अनंत फंदी २) परशराम ३) राम जोशी ४) प्रभाकर ५) होनाजी बाळा	१५	१

शिवाजी विद्यापीठ, कोल्हापूर

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अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semister No. 6 : अभ्यासपत्रिका क्र. XV

Discipline Specific Elective (DSE-E129)

विद्याशाखीय विशेष निवड (DSE-E129)

मराठी भाषा व अर्थार्जनाच्या संधी

पाठ्यपुस्तक : मराठी भाषा व अर्थार्जनाच्या संधी (संपादन)
शिवाजी विद्यापीठ प्रकाशन, कोल्हापूर

उद्दिष्टे :

१. प्रसारमाध्यमांतील अर्थार्जनाच्या संधी आणि भाषिक कौशल्ये यांचा परिचय करून घेणे.
२. स्पर्धा परीक्षांमध्ये मराठी भाषा विषयाचे महत्त्व समजून घेणे.
३. उद्योग व सेवा क्षेत्रात मराठी भाषेद्वारे अर्थार्जनप्राप्ती संदर्भात ज्ञान संपादन करणे.
४. मुद्रित शोधनाची पद्धत अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	प्रसारमाध्यमांतील अर्थार्जनाच्या संधी व भाषिक कौशल्ये ■ मुद्रित माध्यमे (Print Media) १. संपादन २. स्तंभलेखन ३. जाहिरात लेखन ४. शब्दांकन (नावीण्यपूर्ण उपक्रम, व्यक्तींचे अनुभव व मानपत्र) ■ आकाशवाणी १. निवेदन २. संहिता लेखन (कृषी, महिला व शैक्षणिक विषयक) ३. बातमी लेखन ■ चित्रवाणी १. निवेदन २. संहिता लेखन (साहित्य, युवा व मनोरंजन विषयक) ३. बातमी लेखन	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. गटप्रकल्पासाठी अंतर्गत मूल्यमापनाकरिता प्रती विद्यार्थ्यास दहा गुण आहेत.

गटप्रकल्प विषय :

* आपल्या परिसरातील कोणत्याही ग्रंथालयातील किंवा ग्रंथालयाबाहेरील मध्ययुगीन मराठी ग्रंथकार आणि ग्रंथ यांची सूची तयार करावी.

* मध्ययुगीन मराठी वाङ्मयातील निवडक शब्दांचा शब्दसंग्रह करणे आणि त्यांचे वर्गीकरण व विश्लेषण करणे.

मूलभूत वाचन :

१. नसिराबादकर, ल. रा. — *प्राचीन मराठी वाङ्मयाचा इतिहास,* फडके प्रकाशन, कोल्हापूर
२. देशपांडे, अ. ना. — *प्राचीन मराठी वाङ्मयाचा इतिहास खंड १ ते ४,* व्हीनस प्रकाशन, पुणे
३. पांगारकर, ल. रा. — *प्राचीन मराठी वाङ्मयाचा इतिहास खंड १ ते ३,*महाराष्ट्र साहित्य परिषद,पुणे
४. मंचरकर, र. बा. — *धर्म संप्रदाय आणि मध्ययुगीन मराठी वाङ्मय,* प्रतिमा प्रकाशन, पुणे
५. गवळी, अनिल — *सर्वात्मभावी तुकाराम,* सायन पब्लिकेशन प्रा. लि. पुणे
६. सपकाळे, प्रकाश — *संत तुकाराम,* प्रशांत पब्लिकेशन्स, जळगाव
७. वाटवे, के. ना. (संपा.) — *प्राचीन मराठी पंडिती काव्य.*
८. फाटक, न. र. — *श्री एकनाथ वाङ्मय दर्शन आणि कार्य,* मौज प्रकाशन गृह, मुंबई
९. सरदेशमुख, त्र्यं. वि. — *रामदास : प्रतिमा आणि बोध,* अस्मिता प्रकाशन, पुणे
१०. हेरवाडकर, र. वि. — *मराठी बखर,* व्हीनस प्रकाशन, पुणे
११. अदवंत, म. ना. — *पैंजण,* साहित्य प्रसार केंद्र, नागपूर
१२. सहस्त्रबुद्धे, म. ना. — *मराठी शाहिरी वाङ्मय,* ठोकळ प्रकाशन, पुणे
१३. खरात, महेश (संपा.) — *लोकसाहित्य : जीवन आणि संस्कृती,*(प्रा.विश्वनाथ शिंदे गौरवग्रंथ), सायन पब्लिकेशन, पुणे

पूरक वाचन :

१. तुळपुळे, शं. गो. (संपा.) — *मध्ययुगीन मराठी वाङ्मयाचा इतिहास,* म. सा. प., पुणे
२. तुळपुळे , शं. गो. (संपा.) — *मराठी वाङ्मयाचा इतिहास,* महाराष्ट्र साहित्य परिषद, पुणे
३. उपासे, शिवशंकर — *मराठी काव्यातील शिवदैवत दर्शन, आख्यानकाव्य व स्फुटकाव्य : १३ ते १८ वे शतक,* शैवभारती शोध प्रतिष्ठान, जंगमवाडी मठ, वाराणसी
४. पाटील, तानाजी — *संत साहित्यातील सामाजिकता,* विश्वकर्मा प्रकाशन, पुणे
५. हेरवाडकर, र. वि. — *मराठी बखर*

संदर्भ ग्रंथ :

१. बडवे, सतीश — *मध्ययुगीन साहित्याविषयी,* मीरा, औरंगाबाद
२. फाटक, न. र. — *श्री. रामदास, वाङ्मय आणि कार्य*
३. माटे, श्री. म. — *संत, पंत आणि तंत,* ठोकळ प्रकाशन, पुणे
४. होनमाने, धनंजय — *तंजावरची मराठी कीर्तनपरंपरा,* स्नेहवर्धन, पुणे
५. होनमाने, धनंजय — *पंत प्रतिनिधींची कीर्तनाख्याने,* दर्या प्रकाशन, पुणे
६. ग्रामोपाध्ये, गं. ब. — *मराठी बखर गद्य,* व्हीनस बुक स्टॉल, पुणे
७. शिंदे, विश्वनाथ — *शाहिरी वाङ्मयाच्या धारा,* प्रतिमा प्रकाशन, पुणे
७. केळकर, य. न. — *मराठी शाहीर आणि शाहिरी वाङ्मय,* पुणे विद्यापीठ, पुणे
९. मोरजे, गंगाधर — *मऱ्हाटी लावणी वाङ्मय,* मोघे प्रकाशन, कोल्हापूर
१०. वर्दे, श्री. म. — *मराठी कवितेचा उष:काल किंवा मराठी शाहीर,*मुंबई मराठी साहित्य संघ,मुंबई

विभाग २ Module II	उद्योग व सेवाक्षेत्रातील अर्थार्जनाच्या संधी व भाषिक कौशल्ये ■ उद्योग व सेवाक्षेत्र आणि मराठी भाषा ■ उद्योग व सेवाक्षेत्रातील अर्थार्जन संधी – १. विपणन (Marketing) साठी संवाद कौशल्ये २. ग्राहक सेवा केंद्र (Call Centers) ३. अनुवाद ४. मराठी टंकलेखन, युनिकोड व पीपीटी (Power Point Presentation) परिचय	१५	१
विभाग ३ Module III	मुद्रितशोधन १. मुद्रितशोधन : संकल्पना, स्वरूप, प्रकार व महत्त्व २. महाराष्ट्र शासनाचे प्रमाणलेखनविषयक १८ नियम, अपवाद, उदाहरणे, विरामचिन्हे ३. मुद्रित शोधनाची पद्धत : सांकेतिक खुणा, त्याचे स्पष्टीकरण, पहिले वाचन व पुढील मुद्रितशोधन, संगणकीय मुद्रितशोधन ४. मुद्रितशोधनाचे प्रात्यक्षिक कार्य :वर्तमानपत्र, नियतकालिक, ग्रंथ, छापील मजकूर, लेख इ.	१५	१
विभाग ४ Module IV	स्पर्धा परीक्षांसाठी मराठी १. स्पर्धा परीक्षांचे स्वरूप : सरळसेवा, कम्बाईन, राज्यसेवा, संघ लोकसेवा आयोग २. स्पर्धा परीक्षांमधील मराठीचे स्वरूप : अभ्यासक्रम परिचय ३. स्पर्धा परीक्षेसाठी कौशल्ये : वाचन, नोट्स (टिपणे), लेखन, हस्ताक्षर, वेळेचे व्यवस्थापन, गटचर्चा,संदर्भ साहित्य ४. मुलाखतीची पूर्वतयारी व तंत्रे (मुलाखत कशी द्यावी)	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना : १. गटप्रकल्पासाठी अंतर्गत मूल्यमापनाकरिता प्रती विद्यार्थ्यास दहा गुण आहेत.

गटप्रकल्प विषय :

१. राष्ट्रीय, शैक्षणिक, सांस्कृतिक, सामाजिक, कृषी, आरोग्य, भाषा व साहित्य क्षेत्रातील ताज्या घडामोडी यापैकी एका विषयावर आकाशवाणी किंवा चित्रवाणीसाठी संहितालेखन.

२. उद्योग व सेवाक्षेत्रे आणि प्रसारमाध्यमे यांना भेटी देऊन तेथील भाषिक उपयोजनावर आधारित प्रकल्प तयार करणे.

मूलभूत वाचन :

१. काणे, पुष्पा — *नभोवाणी कार्यक्रम : तंत्र आणि मंत्र*, इंडिया बुक कंपनी, पुणे

२. भागवत, यशोदा — *बोलका कॅमेरा*, मौज प्रकाशन, पुणे

३. राजाध्यक्ष, विजया (संपा.) — *मराठी वाङ्मय कोश*, साहित्य आणि संस्कृती मंडळ, मुंबई

४. मोरे, सदानंद व लिंबाळे, शरणकुमार — *प्रबोधनपर वैचारिक वाङ्मय*, य. च. म. मु. विद्यापीठ, नाशिक

५. रेगे, मे. पुं. व इतर — *मराठी विचारवंत आणि आपण*, मौज प्रकाशन गृह, मुंबई

६. शेख, यास्मिन — *मराठी लेखन मार्गदर्शिका*, राज्य मराठी विकास संस्था, मुंबई

७. फडके, अरुण — *मराठी लेखन–कोश*, अंकुर प्रकाशन, ठाणे

८. धायगुडे, य. ए. — *मुद्रितशोधन*, दि पूना प्रेस ओनर्स असो. लि. पुणे

९. खोपकर, अरुण — *चित्रव्यूह*, लोकवाङ्मय गृह, प्रकाशन, मुंबई

१०. वरखेडे, रमेश — *सायबर संस्कृती*, इन्स्टिट्यूट ऑफ नॉलेज इंजिनिअरिंग, नाशिक

११. कांबळे, अमर — *स्पर्धा परीक्षेला सामोरे जाताना*, निर्मिती संवाद प्रकाशन, कोल्हापूर

१२. कांबळे, अमर — *मुलाखत कौशल्य*, निर्मिती संवाद प्रकाशन, कोल्हापूर

पूरक वाचन :

१. कुंभार, प्रकाश — *उपयोजित भाषाविज्ञान आणि प्रसारमाध्यमे*, अक्षरदालन, कोल्हापूर

२. जोशी, प्रभाकर — *उपयोजित मराठी*, प्रशांत पब्लिकेशन्स, जळगाव

३. तौर, पृथ्वीराज — *मराठी भाषिक कौशल्ये विकास*, अथर्व पब्लिकेशन्स, धुळे

४. फडके, अरुण — *शुद्धलेखन मार्गप्रदीप*, अंकुर प्रकाशन, ठाणे

५. दीक्षित, विजय — *चित्रपट : एक कला*, रेणुका प्रकाशन, नाशिक

६. इनामदार, एस. डी. — *माध्यम*, एस. डी. प्रकाशन, पुणे

संदर्भ ग्रंथ :

१. देशपांडे, वि. भा. व जोगळेकर, सुषमा (संपा.) — *मराठी कलाभिरुची*, कॉन्टिनेन्टल प्रकाशन, पुणे

२. पचिंद्रे, श्रीराम — *मुलाखत आणि शब्दांकन*, अनुबंध प्रकाशन, पुणे

३. ढोले, विश्राम — *प्रसारमाध्यमे आणि प्रयोगकला*, लोकवाङ्मय गृह, मुंबई

४. शिंदे, अरुण — *सत्यशोधकीय नियतकालिके*, कृष्णा संशोधन व विकास अकादमी,मंगळवेढा

५. जोशी, प्रभाकर व वले, वासुदेव — *उपयोजित मराठी*, प्रशांत पब्लिकेशन्स, जळगाव

६. रेगे, मे. पुं. (संपा.) — *नवभारत (मासिक)*, व्यावहारिक मराठी विशेषांक, प्राज्ञ पाठशाळा मंडळ, वाई (ऑगस्ट–सप्टेंबर १९८१)

७. भालके, रामचंद्र व इतर — *प्रबोधनपर साहित्य : स्वरूप आणि संकल्पना*, य.च.म.मु. विद्यापीठ, नाशिक

८. चपळगावकर, नरेंद्र — *मराठीतील वैचारिक साहित्य : लेखक आणि समाज*, नवभारत, जून २०१६ वर्ष २९, अंक ९

९. चौसाळकर, अशोक — *विचारवंत आणि समाज*, युनिक ॲकॅडमी, पुणे

१०. गावडे, गोपाळ — *मामा वरेरकर : प्रयोगाची नांदी*, मनोकामना प्रकाशन, इस्लामपूर, २०१७

११. कांबळे, विनोद — *सर्जननोंदी*, वाचनकट्टा प्रकाशन, प्रा. लि., कोल्हापूर, २०१९

शिवाजी विद्यापीठ, कोल्हापूर

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मराठी अभ्यास मंडळ

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अभ्यासक्रम : Syllabus

June, 2020 onward

सत्र-६ : Semister No. 6 : अभ्यासपत्रिका क्र. XVI

Discipline Specific Elective (DSE-E-130)

विद्याशाखीय विशेष निवड (DSE-E-130)

वाङ्मय प्रकाराचे अध्ययन : ललित गद्य (व्यक्तिचित्रे)

पाठ्यपुस्तक : मुलखावेगळी माणसं (संपादन)

शिवाजी विद्यापीठ प्रकाशन, कोल्हापूर

उद्दिष्टे :

१. ललित गद्य वाङ्मयप्रकाराचे स्वरूप अभ्यासणे.

२. व्यक्तिचित्र संकल्पना व स्वरूप समजून घेणे.

३. प्रवाहानुरूप मराठीतील व्यक्तिचित्रांचे स्वरूप अभ्यासणे.

४. 'मुलखावेगळी माणसं'मधील व्यक्तिविशेषांचे आकलन करून घेणे.

५. 'मुलखावेगळी माणसं'मधील शैक्षणिक,सामाजिक,सांस्कृतिक,राजकीय पर्यावरण आणि कौटुंबिक भावविश्व अभ्यासणे.

६. 'मुलखावेगळी माणसं'मधील ग्रामीण व उपेक्षितांच्या जीवनाचे आकलन करून घेणे.

७. 'मुलखावेगळी माणसं'मधील अभिव्यक्ती, निवेदनशैली व भाषाविशेष अभ्यासणे.

अभ्यासक्रम

अ. क्र. Sr. No.	घटक Topic	अध्यापन तासिका Teaching Hours	श्रेयांक Credit
विभाग १ Module I	ललित गद्य : संकल्पना व स्वरूप व्यक्तिचित्रे : संकल्पना, स्वरूप/वैशिष्ट्ये आणि वाटचाल व्यक्तिचित्र लेखनासाठी आवश्यक गुण	१५	१
विभाग २ Module II	१. रामा मैलकुली – व्यंकटेश माडगूळकर २. मृत्यूचे चुंबन घेणारा महाकवी – प्र. के. अत्रे ३. निळू मांग – अण्णाभाऊ साठे ४. मोरणी – विभावरी शिरूरकर	१५	१
विभाग ३ Module III	५. जमीला जावद – हमीद दलवाई ६. यंकटअण्णा – व. वा. बोधे ७. दगडूमामा – उत्तम कांबळे ८. मुंबईचा चित्रकार – अरुण खोपकर	१५	१
विभाग ४ Module IV	९. हीरा – इंद्रजित भालेराव १०. बाबा मास्तर – दि. बा. पाटील ११. दादासाहेब वस्ताद – सयाजीराजे मोकाशी १२. डोकेवाला संशोधक : दादाजी रामजी खोब्रागडे – व्ही.एन.शिंदे	१५	१

* प्रश्नपत्रिकेचे स्वरूप व गुणविभागणी *

Pattern of Question Paper

एकूण गुण – ४० : Total Marks-40

प्रश्न १	योग्य पर्याय निवडा	०५ गुण
प्रश्न २	अंतर्गत विकल्पासह दीर्घोत्तरी प्रश्न	१५ गुण
प्रश्न ३	अंतर्गत विकल्पासह लघूत्तरी प्रश्न (तीन पैकी दोन)	१० गुण
प्रश्न ४	टिपा लिहा (चार पैकी दोन)	१० गुण

सूचना :

१. विभाग एक वर वस्तुनिष्ठ प्रश्न असणार नाहीत.

२. गटप्रकल्पासाठी अंतर्गत मूल्यमापनाकरिता प्रती विद्यार्थ्यास दहा गुण आहेत.

गटप्रकल्प विषय :

आपल्या परिसरातील शैक्षणिक, सामाजिक, सांस्कृतिक, कला, क्रीडा, आरोग्य, राजकीय इत्यादी समाजजीवनाच्या कोणत्याही क्षेत्रातील व्यक्तींची व्यक्तिचित्रे लिखित स्वरूपात प्रती प्रकल्पनुरूप ५ (किमान एका प्रकल्पकास एक नुसार) तयार करून ती एकत्रित जमा करावीत.

मूलभूत वाचन :

१. वास्कर, आनंद (संपा.) *वाङ्मयप्रकार संकल्पना (डॉ.विजय निंबाळकर गौरवग्रंथ),* अन्वय प्रकाशन,पुणे

२. चौघुले, वि. शं. *मुक्तगद्य : संकल्पना आणि उपयोजन,* मॅजेस्टिक प्रकाशन, मुंबई, २००८

३. शिंदे, रणधीर *ललित गद्य ते मुक्तगद्य (लेख),* दै. महाराष्ट्र टाईम्स, २९–१२–२०१३

४. मालशे, मिलिंद *साहित्य प्रकाराची संकल्पना (लेख),* साहित्य : अध्यापन आणि प्रकार, (संपा.) श्री. पु. भागवत, सुधीर रसाळ, मौज प्रकाशन, मुंबई, १९८७

५. हातकणंगलेकर, जहागीरदार, पवार, गो. मा. *मराठी साहित्य : प्रेरणा आणि स्वरूप,* पॉप्युलर प्रकाशन, मुंबई, १९८६

६. पुरोहित, के. ज. *लघुनिबंध,* साहित्य अकादमी, नवी दिल्ली

पूरक वाचन :

१. माडगूळकर, व्यंकटेश *माणदेशी माणसं,* मेहता पब्लिशिंग हाऊस, पुणे, पुनर्मुद्रण, २०१८

२. अत्रे, प्र. के. *मृत्यूचे चुंबन घेणारा महाकवी : साने गुरूजी,* पार्श्व पब्लिकेशन, कोल्हापूर,१९६२

३. साठे, अण्णाभाऊ *बरबाद्या कंजारी,* श्रमिक प्रतिष्ठान, कोल्हापूर, लोकावृत्ती, २०१०

४. शिरूरकर, विभावरी *दोघांचे विश्व आणि इतर काही कथा,* कॉन्टिनेन्टल प्रकाशन, पुणे, १९५७

५. दलवाई, हमीद *जमीला जावद आणि इतर कथा,* साधना प्रकाशन, पुणे, २०१६

६. बोधे, व. वा. *गावाकडची माणसं,* अक्षरबंध प्रकाशन, पुणे, २००७

७. कांबळे, उत्तम *कावळे आणि माणसं,* मनोविकास प्रकाशन, पुणे, आ.दु., २०१०

८. खोपकर, अरुण *चित्रव्यूह,* लोकवाङ्मय गृह, मुंबई

९. भालेराव, इंद्रजित *गाई घरा आल्या,* प्रतिभास प्रकाशन, परभणी

१०. पाटील, दि. बा. *भली माणसं,* मनोकामना प्रकाशन, इस्लामपूर, २०१३

११. मोकाशी, सयाजीराजे *पंधरा ऑगस्ट,* मुक्तरंग प्रकाशन, लातूर, २०१६

१२. शिंदे, व्ही. एन. *हिरव्या बोटांचे किमयागार,* तेजस प्रकाशन, कोल्हापूर, २०१९

संदर्भ ग्रंथ :

१. जोशी, प्र. न. *मराठी वाङमयाचा विवेचक इतिहास,* अर्वाचीन काळ (१८०० ते १९८०), स्नेहवर्धन प्रकाशन, पुणे

२. भागवत, श्री. पु. *साहित्य अध्यापन आणि प्रकार (प्रा. वा. ल. कुलकर्णी गौरवग्रंथ),* मौज प्रकाशन गृह, मुंबई

SHIVAJI UNIVERSITY, KOLHAPUR

Revised syllabus for
Bachelor of Arts (Part – III)

SEMESTERV & VI

ECONOMICS

Syllabus to be implemented from June 2020 onwards

Equivalance B.A.III Economics Sem- V

Sem No.	Paper No.	Title of Old Paper	Sem No.	Discipline	Title of New Paper
V	VII	Micro Economics	V	Economics Course - 7	Principles of Micro Economics- I
V	VIII	Research Methodology in Economics (Part I)	V	Economics Course- 10	Research Methodology in Economics- I
V	IX	History of Economic Thoughts (Part I)	V	Economics Course - 11	History of Economic Thoughts- I
V	X	Economics of Development	V	Economics Course - 8	Economics of Development
V	XI	International Economics (Part I)	V	Economics Course - 9	International Economics- I

Equivalance B.A.III Economics Sem- VI

Sem No.	Paper No.	Title of Old Paper	Sem No.	Economics Course	Title of New Paper
VI	XII	Market and Pricing	VI	Economics Course- 12	Principles of Micro Economics- II
VI	XIII	Research Methodology in Economics (Part II)	VI	Economics Course- 15	Research Methodology in Economics- II
VI	XIV	History of Economic Thoughts (Part II)	VI	Economics Course- 16	History of Economic Thoughts- II
VI	XV	Economics of Planning	VI	Economics Course- 13	Economics of Planning
VI	XVI	International Economics (Part II)	VI	Economics Course- 14	International Economics- II

Structure of Course
Revised syllabus of B.A. Part III (Economics)

Sr. No.	Semester	Title of the Paper	Discipline	Distribution of Credit	Workload	Total Credits	Theory Marks	Term work seminar
1	V	Principles of Micro Economics- I	Economics Course- 7	4	4 Lectures / week	20	40	10
2	V	Economics of Development	Economics Course- 8	4	4 Lectures / week		40	10
3	V	International Economics- I	Economics Course- 9	4	4 Lectures / week		40	10
4	V	Research Methodology in Economics- I	Economics Course- 10	4	4 Lectures / week		40	10
5	V	History of Economic Thoughts- I	Economics Course- 11	4	4 Lectures / week		40	10
Sr. No.	**Semester**	**Title of the Paper**	**Discipline**	**Distribution of Credit**	**Workload**	**Total Credits**	**Theory Marks**	**Term work Group Project**
6	VI	Principles of Micro Economics- II	Economics Course- 12	4	4 Lectures / week	20	40	10
7	VI	Economics of Planning	Economics Course- 13	4	4 Lectures / week		40	10
8	VI	International Economics- II	Economics Course- 14	4	4 Lectures / week		40	10
9	VI	Research Methodology in Economics- II	Economics Course- 15	4	4 Lectures / week		40	10
10	VI	History of Economic Thoughts- II	Economics Course- 16	4	4 Lectures / week		40	10

6. Kindleberger, C.P. (1965), *Economic Development*, 3e, McGraw Hill, New York.
7. Meier, Gerald M. and James E. Rauch (2005), *Leading Issues in Economic Development*, 6e, Oxford University Press, New Delhi.
8. Myint, Hla (1965), *The Economics of Underdeveloped Countries*, Preager, New York.
9. Myint, Hla (1971), *Economic Theory and Under Developed Countries*, Oxford University Press, New York.
10. Thirlwal, A.P. (1999), (6th Edition), *Growth and Development*, Macmillan, London.
11. Bhagwati, J. and P. Desai (1970), *India : Planning for Industrialization*, Oxford University Press, London.
12. Boserup, Ester (1981), *Population and Technological Change : A Study of Long Term Change*, Chicago University Press, Chicago.
13. Brahmananda, P.R. and C.N. Vakil (1956), *Planning for an Expanding Economy,* Vora and Co., Bombay.
14. Puri V. K. And S. K. Misra (2016), *Economics of Development and Planning*, Himalaya Publishing House.
15. Datta Gaurav and Ashwini Mahajan (2016), *Indian Economy*, S. Chand Publishing, New Delhi
16. Todaro Michael P. And Stephen C. Smith (2017), *Economic Development,* Pearson Education.
17. Chakravarti, Sukhamoy (1982), *Alternative Approaches to the Theory of Economic Growth,* Oxford University Press, Delhi.
18. Chakravarty, Sukhamoy (1987), *Development Planning : The Indian Experience,* Clarendon Press, Oxford.
19. Jhingan, M.L. (2005) *The Economics of Development and Planning* , Vrinda Publications Ltd. Delhi
20. Lekhi, R.K. (2005) *Economics of Development and Planning*, Kalyani Publishers, Delhi.
21. Patil, J. F. (et al) (2005) *Economics of Growth and Development* (Marathi) , Phadake Publishers, Kolhapur.
22. Patil, J.F. & Tamhankar, P.J. (1990) *Economics of Development and Planning* (Marathi), Continental Publishers, Pune.
23. Kavimandan (1975), *Economics of Development and Planning* (Marathi), Mangesh Prakashan , Nagpur

B. A. III Economics (Semester V) (CBCS Pattern)

Principles of Micro Economics- I

(Elective Course- 7) DSE E-71

Course Outcomes: After successful completion of this course, the students will be able to:

- Explain what economics is and explain why it is important
- Understand consumer decision making and consumer behaviour
- Define the concept of utility and satisfaction
- Derive revenue and cost figures as well as curves
- Understand producer decision making and producer behaviour

Module- I Introduction to Micro Economics **(Teaching Hours- 15, Credits- 01)**

1.1 Meaning, nature and scope
1.2 Importance and limitations
1.3 The Economic Problem- Scarcity and Choice; concept of opportunity cost
1.4 Framework of economic analysis- Concept, module, parameters

Module- II Consumer's Behaviour **(Teaching Hours- 15, Credits- 01)**

2.1 Utility- concept, total and marginal utility
2.2 Cardinal utility approach: law of diminishing marginal utility
2.3 Ordinal utility approach: meaning and properties of indifference curve
2.4 Consumer's equilibrium and consumer's surplus

Module- III Demand and Supply Analysis **(Teaching Hours- 15, Credits- 01)**

3.1 Law of demand, demand function, determinants of demand
3.2 Elasticity of demand: price, income, cross and substitution
3.3 Measurement and importance
3.4 Law of supply, supply function and elasticity

Module- IV Theory of Production **(Teaching Hours- 15, Credits- 01)**

4.1 Law of variable proportions and law of returns to scale
4.2 Economies and diseconomies of scale
4.3 Revenue- total, marginal and average revenue
4.4 Cost concepts and their relationship, cost curves- short run and long run

BASIC READING LIST:

1. Dominic Salvator (2012) – Principles of Micro Economics, 5th edition, Oxford University Press, Oxford.
2. John B. Taylor & Akila Weerapana, (2011) 'Principles of Economics', 7th Edition, Cengage Learning, India, New Delhi.

3. Koutsoyiannis, A. (1979), Modern Microeconomics, 2nd Edition, Macmillan Press, London.
4. Lipsey Richard G., (latest edition), An Introduction to Positive Economics, Weidenfeld & Nicolson, London.
5. Lipsey, R.G. and K.A. Chrystal (latest edition), Principles of Economics (IX Ed.), Oxford University Press, Oxford.
6. Mankiw, N. Gregory (2008),Principles of Microeconomics, 5th Edition, Cengage Learning India, New Delhi.
7. Mansfield, E (latest edition), Microeconomics (9th Ed) W.W. Norton and Company, New York.
8. Pindyek and Rubinfield (latest edition)- Micro Economics, Pearson Education, New Delhi.
9. Ray, N.C. (latest edition), An introduction to Microeconomics, Macmillan company of India Ltd.
10. Samuelson, P.A. and W.D. Nordaus (latest edition), Economics, Tata McGraw Hill, New Delhi.
11. Stonier, A.W. and D.C. Hague (latest edition), A Textbook of Economic Theory, ELBS and Logman Group, London.
12. Varian, Hall (1992): Microeconomic Analysis, Third Edition, W. W. Norton & Company, Inc, New York.

B. A. III Economics (Semester V) (CBCS Pattern)
Economics of Development

(Elective Course- 8) DSE – E - 72

Course Outcomes: After successful completion of this course, the students will be able to:

- Identify the dimensions of development
- Distinguish the fundamental and contemporary development debate
- Know the theories of economic development
- Realise the role of state in economic development

Module- I: Basic concepts of economic development (Teaching Hours- 15, Credits- 01)

1.1 Meaning of economic development- Distinction between economic development and growth
1.2 Indicators of economic development
1.3 Obstacles to economic development
1.4 Sustainable and green development

Module- II: Developing and developed countries (Teaching Hours- 15, Credits- 01)

2.1 Underdevelopment and characteristics
2.2 Factors affecting economic development
2.3 Features of economic growth
2.4 Developmental status of Indian economy

Module- III: Theories of economic development (Teaching Hours- 15, Credits- 01)

3.1 Classical approach to development- Ricardian Theory
3.2 Myrdal's theory of economic development
3.3 Rostow's stages of economic growth
3.4 Theory of balanced and unbalanced growth

Module- IV: Resources for economic development (Teaching Hours- 15, Credits- 01)

4.1 Capital formation, Technology and economic development
4.2 Human capital and economic development
4.3 FDI, FIIs, Portfolio and Aid
4.4 Role of state in economic development

BASIC READING LIST:

1. Adelman, Irma (1962), *Theories of Economic Growth and Development*, Stanford University Press, Stanford.
2. Behrman, S. and T.N. Srinivasan (1995), *Handbook of Development Economics*, Vol. 1to 3, Elsevire, Amsterdam. Economics 31
3. Ghatak, Subrata (1986), *Introduction to Development Economics*, Allen and Unwin, London.
4. Hayami, Yujiro and Yoshihisa Godo (1997), *Development Economics*, Oxford University Press, New York.
5. Higgins, Benjamin (1980), *Economic Development*, Norton, New York.

B. A. III Economics (Semester V) (CBCS Pattern)
International Economics- I
(Elective Course- 9) DSE – E 73

Course Outcomes: After successful completion of this course, the students will be able to:

- Explain international trade
- Understand the measurement of gains from international trade
- Distinguish different rates of exchange
- Measure the terms of trade

Module- I: Trade and Trade Theories **(Teaching Hours- 15, Credits- 01)**

1.1 Importance of the study of International Economics

1.2 Inter-regional and international trade: similarities and dissimilarities.

1.3 Ricardian theory of international trade

1.4 Hecksher – Ohlin Theory

Module- II: Gains from International Trade **(Teaching Hours- 15, Credits- 01)**

2.1 Gains from international trade and their measurement

2.2 Trade as an engine of economic growth.

2.3 Terms of trade: meaning, concepts and application

2.4 Factors affecting terms of trade

Module- III: Exchange Rate **(Teaching Hours- 15, Credits- 01)**

3.1 Meaning of exchange rate, Purchasing Power Parity theory

3.2 Fixed Exchange Rate – meaning, merits and demerits

3.3 Flexible Exchange Rate – meaning, merits and demerits

3.4 Floating Exchange Rate – meaning, merits and demerits

Module- IV: Tariffs and Quotas **(Teaching Hours- 15, Credits- 01)**

4.1 Free Trade: meaning, arguments for and against

4.2 Trade Protection Policy: meaning, arguments for and against.

4.3 Tariffs:meaning, types and effects

4.4 Quotas:meaning, types and effects.

BASIC READING LIST:

1 Aggarwal, M. R. (1979), Regional Economic Cooperation in South Asia, S. Chand and Co., New Delhi.

2 Bhagwati, J. (Ed.) (1981), International Trade, Selected Readings, Cambridge University Press, Mass.

3 Crockett. A. (1982), International Money: Issue and Analysis, ELBS and Nelson, London.

4 Greenaway. D. (1983), International Trade Policy, MacMillan Publishers Ltd., London.

5 Heller, H. R. (1968), International Monetary Economics, Prentice Hall. India.

6 Joshi V. and I.M.D. Little (1998), India's Economic Reforms, 1999-2001, Oxford

7 Kenan, P.B. (1994), The International Economy, Cambridge University Press, London.

8 Kindlberger, C. P. (1973), International Economics, R.D. Irwin, Homewood.

9 Krugman, P. R. and M. Obstgeld (1994), International Economics: Theory and Policy, Glenview, Foresman.

10 Mithani D.M. (Reprint-2009) International Economics, Himalaya Publishing House, New Delhi.

11 Nayyar,D. (1976) : India's Exports and Export Policies in the 1960s, Cambridge University Press, Cambridge.

12 Panchmukhi, V. R. (1978), Trade Policies of India: A Quantitative Analysis, Concept University Press, Delhi.

13 Patel, S. J. (1995), Indian Economy Towards the 21st Century, University Press Ltd., India.

14 RuddarDatt& K.P.M. Sundaram, (2018), Indian Economy, S. Chand & Co. Ltd., New Delhi

15 Salvatore, D. L. (1997), International Economics, Prentice- Hall, Upper Saddle River, N. J.

16 Singh, M. (1964), India Export Trends and the Prospects for Self-sustained Growth, Oxford University Press, Oxford.

17 Sodersten, Bo (1991), International Economics, MacMillan Press Ltd. London

B. A. III Economics (Semester V) (CBCS Pattern)

Research Methodology in Economics- I

(Elective Course- 10) DSE – E 74

Course Outcomes: After successful completion of this course, the students will be able to:

- Get acquainted with the basic concepts of research and its methodologies.
- Select and define appropriate research problem and parameters.

Module- I: Introduction to research in economics (Teaching Hours- 15, Credits- 01)

1.1 Meaning, definitions and objectives of research

1.2 Types of research

1.3 Significance of research

1.4 Areas of economic research

Module- II: Literature review and research design (Teaching Hours- 15, Credits- 01)

2.1 Literature review- meaning, need, how to carry out a literature review?

2.2 Research design- steps in research design

2.3 Features of good research design

2.4 Importance of research design

Module- III: Hypothesis and concept (Teaching Hours- 15, Credits- 01)

3.1 Meaning and definition, kinds of hypothesis

3.2 Features of hypothesis

3.3 Importance of hypothesis

3.4 Concept- meaning, conceptualization, formal and operational definition of concept

Module- IV: Data collection (Teaching Hours- 15, Credits- 01)

4.1 Primary and secondary data

4.2 Primary data collection methods- observation, questionnaire, interview

4.3 Sources of secondary data

4.4Importance of data collection

BASIC READING LIST:

1. Goode and Hatt(1981), Methods in Social Research, McGraw Hill International Book Company, New Delhi.
2. Kerliger F.N.(1983), Foundation of Behavioural Research, Surjeet Publication,Delhi.
3. Young P. V. (1960), Scientific Social Survey and Research, Asia Publication House,Mumbai.

4. Kothari C.R. (1993), Research Methodology-Methods and Techniques, Wiley Eastern Ltd.,New Delhi.
5. Lundbrg G.A.(1960), Social Research, Longmans Green and Company, New York.
6. Herekar P .M.(2019), Research Methodology and Project Work, Phadake Prakashan,Kolhapur.
7. Settiz Claire,Jahoda Marie and Others(1959), Research Methods in SocialResearch,Dryden New York.
8. Takur Dvendra(1997), Research Methodology in Social Sciences, Deep and Deep Publication,New Delhi.
9. Gupta S.P.and Gupta M.P.(2005), Business Statistics, Sultan Chand & Sons, New Delhi
10. Gupta C.B.(1996), An Introduction to Methods, Vikas Publication House,New Delhi.
11. देशमुख राम (जून 2005) : 'मूलभूत सांख्यिकी', विद्या प्रकाशन, नागपूर.
12. पाटील ज.फा., पठाण के.जी., ताम्हणकर पी.जे., संतोष यादव (2012) : 'अर्थशास्त्रीय संशोधनाची तोंडओळख', (सुधारित आवृत्ती), कॉन्टिनेंटल प्रकाशन, पुणे.
13. आगलावे प्रदीप (जानेवारी 2000) : 'संशोधन पध्दतीशास्त्र व तंत्रे', विद्या प्रकाशन, नागपूर.
14. खैरनार दिलीप (फेब्रुवारी 2009) : 'प्रगत सामाजिक संशोधन पध्दती व सांख्यिकी', डायमंडपब्लिकेशन्स, पुणे.
15. भांडारकर पु.ल. (1987) : 'सामाजिक संशोधन पध्दती', महाराष्ट्र विद्यापीठ ग्रंथनिर्मिती मंडळ, नागपूर.

B. A. III Economics (Semester V) (CBCS Pattern)

History of Economic Thoughts- I

(Elective Course- 11) DSE – E 75

Course Outcomes: After successful completion of this course, the students will be able to:

- Understand the basic economic ideas of various economic thinkers of the world
- Understand the development of economic thoughts

Module-I: Origin of Economic Thoughts (Teaching Hours- 15, Credits- 01)

1.1 Early economic thought, rise of mercantilism, features of Mercantilism
1.2 Meaning and causes of emergence of Physiocracy
1.3 The concept of natural order and primacy of agriculture
1.4 Tableau economique

Module- II: Classical Economic Thoughts (Teaching Hours- 15, Credits- 01)

2.1 Adam Smith: Division of labour, theory of value and canons of taxation
2.2 David Ricardo: Theory of Value and views on distribution
2.3 Thomas Malthus: Theory of Population
2.4 Theory of Gluts

Module- III: Economic Thoughts of Fredrick List (Teaching Hours- 15, Credits- 01)

3.1 Criticism on Classical School
3.2 Stages of Economic growth
3.3 Concept of Nationalism
3.4 Theory of Protectionism

Module- IV: Economic Thoughts of Karl Marx (Teaching Hours- 15, Credits- 01)

4.1 The Concept of Scientific Socialism and Meterialist approach
4.2 The Theory of Value
4.3 Theory of Surplus Value
4.4 Concept of Falling rate of profit

BASIC READING LIST:

1. Dandekar V.M.and N.Nath (1971), Poverty in India, Indian school of political Economy, Pune.
2. Ganguli B. N. (1977): Indian Economic Thought - A 19th Century Perspectives,Tata Mc Grow Hill, New Delhi.
3. Rath Nilkanth(1995) V.M.Dandekar Social Scientist with a Difference : Journal of Indian School of Political Economy.Oct-Dec.1995, Vol-7 No-4.
4. Seshadri G.B.(1997): Economic Doctrines, Publishing Corporation, New Delhi.
5. चा.भ.खैरमोडे (१९७८) – डॉ.भीमराव रामजी आंबेडकर, खंड १ ला , खंड २ रा खंड ७ वा, प्रताप प्रकाशन.

6. गांधी मो.क.(१९९७) -मराठी अनुवाद सीताराम पुरोषोत्तम पटवर्धन'सत्याचे प्रयोग अथवा आत्मकथा पाचवी आवृत्ती.
7. डॉ.जे.एफ.पाटील (२०१५)– आर्थिक विचारांचा इतिहास, फडके प्रकाशन, कोल्हापूर.
8. इंगळे बी.डी. (२०११) आर्थिक विचारांचा इतिहास, अरुणा प्रकाशन, लातूर.
9. प्रा.रायखेलकर,डॉ.दामजी (२०११) – आर्थिक विचारांचा इतिहास, विद्या बुक पब्लिशर्स,औरंगाबाद.
10. प्रा.डॉ.अनिलकुमार वावरे, प्रा.संजय धोंडे, व डॉ.अनिल सत्रे (२०१४)– आर्थिक विचारांचा इतिहास, एज्युकेशनल पब्लिशर्स अॅन्ड डिस्ट्रिब्युटर्स,औरंगाबाद.
11. प्रा.रा.म.गोखले - आर्थिक विचारांचा इतिहास
12. डॉ.विजय कविमंडन - आर्थिक विचारांचा इतिहास

B. A. III Economics (Semester VI) (CBCS Pattern)

Principles of Micro Economics- II

(Elective Course- 12) DSE E 196

Course Outcomes: After successful completion of this course, the students will be able to:

- Identify the market structure
- Analyse the economic behaviour of individual firms and markets
- Analyse a firm's profit maximising strategies under different market conditions
- Understand the factor pricing

Module- I Perfect Competition **(Teaching Hours- 15, Credits- 01)**

1.1 Meaning and characteristics
1.2 price and outputdetermination under perfect competition
1.3 Equilibrium of the firm and industry in the short run
1.4 Equilibrium of the firm and industry in the long run

Module- II Monopoly **(Teaching Hours- 15, Credits- 01)**

2.1 Meaning and characteristics
2.2 Price discrimination and degrees
2.3 Equilibrium of a monopoly firm in the short run and long run
2.4 Monopoly and capacity loss

Module- III Imperfect Competition **(Teaching Hours- 15, Credits- 01)**

3.1 Meaning and characteristics
3.2 Price- output determination
3.3 Product differentiation
3.4 Oligopoly and duopoly- meaning and characteristics

Module- IV Factor Pricing **(Teaching Hours- 15, Credits- 01)**

4.1 Marginal productivity theory
4.2 Modern theory of rent
4.3 Classical and Keynesian theory of interest
4.4 Risk and uncertainty theory of profit

BASIC READING LIST:

1. Dominic Salvator (2012) – Principles of Micro Economics, 5th edition, Oxford University Press, Oxford.
2. John B. Taylor & Akila Weerapana, (2011) 'Principles of Economics', 7th Edition, Cengage Learning, India, New Delhi.

3. Koutsoyiannis, A. (1979), Modern Microeconomics, 2nd Edition, Macmillan Press, London.
4. Lipsey Richard G., (latest edition), An Introduction to Positive Economics, Weidenfeld & Nicolson, London.
5. Lipsey, R.G. and K.A. Chrystal (latest edition), Principles of Economics (IX Ed.), Oxford University Press, Oxford.
6. Mankiw, N. Gregory (2008),Principles of Microeconomics, 5th Edition, Cengage Learning India, New Delhi.
7. Mansfield, E (latest edition), Microeconomics (9th Ed) W.W. Norton and Company, New York.
8. Pindyek and Rubinfield (latest edition)- Micro Economics, Pearson Education, New Delhi.
9. Ray, N.C. (latest edition), An introduction to Microeconomics, Macmillan company of India Ltd.
10. Samuelson, P.A. and W.D. Nordaus (latest edition), Economics, Tata McGraw Hill, New Delhi.
11. Stonier, A.W. and D.C. Hague (latest edition), A Textbook of Economic Theory, ELBS and Logman Group, London.
12. Varian, Hall (1992): Microeconomic Analysis, Third Edition, W. W. Norton & Company, Inc, New York.

B. A. III Economics (Semester VI) (CBCS Pattern)
Economics of Planning
(Elective Course- 13) DSE – E 197

Course Outcomes: After successful completion of this course, the students will be able to:

- Get acquainted with economic planning and its importance in development
- Get acquianted with development of planning and planning machinery in India
- Evaluate sectoral performance of the Indian economy
- Compare and analyse Indian models of economic development

Module- I: Introduction to economic planning (Teaching Hours- 15, Credits- 01)

1.1 Meaning, Case for and against economic planning
1.2 Genesis of planning
1.3 Types of planning
1.4 Conditions of success of planning

Module- II: Issues in economic planning (Teaching Hours- 15, Credits- 01)

2.1 The choice of techniques: labour and capital intensive
2.2 Capital output ratio: Importance and factors affecting COR
2.3 Input output analysis
2.4 Project evaluation

Module- III: Planning in India- I (Teaching Hours- 15, Credits- 01)

3.1 Evolution of planning in India
3.2 Objectives and evaluation of planning
3.3 Planning Commission and National Development Council
3.4 NITI Ayog- Need for establishment, organization, objectives and work

Module- IV: Planning in India- II (Teaching Hours- 15, Credits- 01)

4.1 Plan models in Indian plans
4.2 Agricultural development under plans
4.3 Industrial development under plans
4.4 Services sector development under plans

BASIC READING LIST:

1. Behrman, S. and T.N. Srinivasan (1995), *Handbook of Development Economics*, Vol. 1to 3, Elsevire, Amsterdam. Economics 31
2. Hayami, Yujiro and Yoshihisa Godo (1997), *Development Economics*, Oxford University Press, New York.
3. Kindleberger, C.P. (1965), *Economic Development*, 3e, McGraw Hill, New York.
4. Meier, Gerald M. and James E. Rauch (2005), *Leading Issues in Economic Development*, 6e, Oxford University Press, New Delhi.
5. Myint, Hla (1971), *Economic Theory and Under Developed Countries*, Oxford University Press, New York.
6. Thirlwal, A.P. (1999), (6th Edition), *Growth and Development*, Macmillan, London.

7. Bhagwati, J. and P. Desai (1970), *India : Planning for Industrialization*, Oxford University Press, London.
8. Brahmananda, P.R. and C.N. Vakil (1956), *Planning for an Expanding Economy,* Vora and Co., Bombay.
9. Puri V. K. And S. K. Misra (2016), *Economics of Development and Planning*, Himalaya Publishing House.
10. Datta Gaurav and Ashwini Mahajan (2016), *Indian Economy*, S. Chand Publishing, New Delhi
11. Chakravarty, Sukhamoy (1987), *Development Planning : The Indian Experience,* Clarendon Press, Oxford.
12. Jhingan, M.L. (2005) *The Economics of Development and Planning* , Vrinda Publications Ltd. Delhi
13. Lekhi, R.K. (2005) *Economics of Development and Planning*, Kalyani Publishers, Delhi.
14. Patil, J. F. (et al) (2005) *Economics of Growth and Development* (Marathi) , Phadake Publishers, Kolhapur.
15. Patil, J.F. & Tamhankar, P.J. (1990) *Economics of Development and Planning* (Marathi), Continental Publishers, Pune.

B. A. III Economics (Semester VI) (CBCS Pattern)

International Economics- II

(Elective Course- 14) DSE – E 198

Course Outcomes: After successful completion of this course, the students will be able to:

- Distinguish between balance of trade and balance of payments
- Analyse the balance of payments
- Understand the various types of foreign capital
- Analyse the impact of international institutions on Indian economy

Module- I: Balance of Trade and Balance of Payments(Teaching Hours- 15, Credits- 01)

1.1 Balance of Trade and Balance of Payments

1.2 Importance of Balance of Payments

1.3 Disequilibrium in Balance of Payments: Causes and Consequences

1.4 Measures to correct disequilibrium in Balance of Payments

Module- II: Foreign Trade of India since 1991 (Teaching Hours- 15, Credits- 01)

2.1 Volume, composition and direction

2.2 Exim Policy of 2014-19

2.3 Trade administration of India

2.4 Convertibility of Rupee: Meaning and types.

Module- III: Foreign Capital in India (Teaching Hours- 15, Credits- 01)

3.1 Need for Foreign Capital

3.2 Types of Foreign Capital

3.3 Foreign Capital Policy of Government of India

3.4 Trends in Foreign Direct Investment in India

Module- IV: International Institutions and India (Teaching Hours- 15, Credits- 01)

4.1 IMF: Objectives and Functions

4.2 IBRD: Objectives,Functions

4.3 ADB: Objectives, Functions

4.4 WTO: Objectives, Functions

BASIC READING LIST:

1 Aggarwal, M. R. (1979), Regional Economic Cooperation in South Asia, S. Chand and Co., New Delhi.

2 Bhagwati, J. (Ed.) (1981), International Trade, Selected Readings, Cambridge University Press, Mass.

3 Crockett. A. (1982), International Money: Issue and Analysis, ELBS and Nelson, London.

4 Greenaway. D. (1983), International Trade Policy, MacMillan Publishers Ltd., London.

5 Heller, H. R. (1968), International Monetary Economics, Prentice Hall. India.

6 Joshi V. and I.M.D. Little (1998), India's Economic Reforms, 1999-2001, Oxford

7 Kenan, P.B. (1994), The International Economy, Cambridge University Press, London.

8 Kindlberger, C. P. (1973), International Economics, R.D. Irwin, Homewood.

9 Krugman, P. R. and M. Obstgeld (1994), International Economics: Theory and Policy, Glenview, Foresman.

10 Mithani D.M. (Reprint-2009) International Economics, Himalaya Publishing House, New Delhi.

11 Nayyar,D. (1976) : India's Exports and Export Policies in the 1960s, Cambridge University Press, Cambridge.

12 Panchmukhi, V. R. (1978), Trade Policies of India: A Quantitative Analysis, Concept University Press, Delhi.

13 Patel, S. J. (1995), Indian Economy Towards the 21st Century, University Press Ltd., India.

14 RuddarDatt& K.P.M. Sundaram, (2018), Indian Economy, S. Chand & Co. Ltd., New Delhi

15 Salvatore, D. L. (1997), International Economics, Prentice- Hall, Upper Saddle River, N. J.

16 Singh, M. (1964), India Export Trends and the Prospects for Self-sustained Growth, Oxford University Press, Oxford.

17 Sodersten, Bo (1991), International Economics, MacMillan Press Ltd. London

B. A. III Economics (Semester VI) (CBCS Pattern)

Research Methodology in Economics- II

(Elective Course- 15) DSE – E - 199

Course Outcomes: After successful completion of this course, the students will be able to:

- Understand the sampling techniques as a method of data collection
- Use techniques of data analysis in research
- Write a research report and thesis
- Write a research proposal (grants)

Module- I: Sampling (Teaching Hours- 15, Credits- 01)

1.1 Meaning and nature

1.2 Types of sampling

1.3 Criteria of good sampling

1.4 Optimum size of sampling

Module- II: Processing and representation of data (Teaching Hours- 15, Credits- 01)

2.1 Classification of data

2.2 Tabulation of data

2.3 Percentage

2.4 Graphs and diagrams

Module- III: Techniques of data analysis (Teaching Hours- 15, Credits- 01)

3.1 Need and importance of data analysis

3.2 Measures of central tendency: mean, mode, median (direct method)

3.3 Measures of variation: range, standard deviation (direct method)

3.4 Correlation- meaning and importance, Karl Pearson's coefficient of correlation

Module- IV: Interpretation of data and report writing(Teaching Hours- 15, Credits- 01)

4.1 Interpretation of data: meaning

4.4 Report writing: meaning, steps, precautions

4.5 Properties of good report writing

4.4 Writinga good research proposal

BASIC READING LIST:

1. Goode and Hatt (1981), Methods in Social Research, McGraw Hill International Book Company, New Delhi.
2. Kerliger F.N.(1983), Foundation of Behavioural Research, Surjeet Publication,Delhi.
3. Young P. V.(1960), Scientific Social Survey and Research, Asia Publication House,Mumbai.
4. Kothari C.R. (1993), Research Methodology-Methods and Techniques, Wiley Eastern Ltd.,New Delhi.
5. Lundbrg G.A.(1960), Social Research, Longmans Green and Company, New York.
6. Herekar P .M.(2019), Research Methodology and Project Work, Phadake Prakashan,Kolhapur.
7. Settiz Claire,Jahoda Marie and Others(1959), Research Methods in SocialResearch,Dryden New York.
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9. Gupta S.P.and Gupta M.P.(2005), Business Statistics, Sultan Chand & Sons, New Delhi
10. Gupta C.B. (1996), An Introduction to Methods, Vikas Publication House,New Delhi.
11. देशमुख राम (जून 2005) : 'मूलभूत सांख्यिकी', विद्या प्रकाशन, नागपूर.
12. पाटील ज.फा., पठाण के.जी., ताम्हणकर पी.जे., संतोष यादव (2012) : 'अर्थशास्त्रीय संशोधनाची तोंडओळख', (सुधारित आवृत्ती), कॉन्टिनेंटल प्रकाशन, पुणे.
13. आगलावे प्रदीप (जानेवारी 2000) : 'संशोधन पध्दतीशास्त्र व तंत्रे', विद्या प्रकाशन, नागपूर.
14. खैरनार दिलीप (फेब्रुवारी 2009) : 'प्रगत सामाजिक संशोधन पध्दती व सांख्यिकी', डायमंड पब्लिकेशन्स, पुणे.
15. भांडारकर पु.ल. (1987) : 'सामाजिक संशोधन पध्दती', महाराष्ट्र विद्यापीठ ग्रंथनिर्मिती मंडळ, नागपूर.

B. A. III Economics (Semester VI) (CBCS Pattern)

History of Economic Thoughts- II

(Elective Course- 16) DSE – E 200

Course Outcomes: After successful completion of this course, the students will be able to:

- Understand the economic concepts and theories of Neo-Classical and Indian thinkers.
- Understand the development of economic thoughts

Module- I: Neo- Classical Economic Thought – Alfred Marshall
(Teaching Hours- 15, Credits- 01)

1.1 Theory of Value
1.2 The concept of representative firm
1.3 Consumer's surplus, elasticity of demand
1.4 Quasi rent

Module- II: Indian Economic Thought (Teaching Hours- 15, Credits- 01)

2.1 Mahatma Phule: Views on agriculture and education
2.2 Rajarshi Shahu Maharaj: Policy for agriculture development and co-Operation
2.3 Dr. Babasaheb Ambedkar: Views on money, agriculture and development policy
2.4 Dadabhai Nauroji: Drain theory

Module- III: Mahatma Gandhi (Teaching Hours- 15, Credits- 01)

3.1 Concept of village development
3.2 Importance of decentralization
3.3 Basic principle of development: swadeshi
3.4 Concept of Gram Swarajya

Module- IV: Economic Thoughts of Modern Indian Economist
(Teaching Hours- 15, Credits- 01)

4.1 Gopal Krishna Gokhale's views on public finance
4.2 D. R. Gadgil: Views on co-operative development and decentralization of power, co-operative commonwealth
4.3 V. M. Dandekar: Views on poverty
4.4 Amartya Sen: Concept of social choice, choice of techniques, Sen's views on poverty and public action

BASIC READING LIST:

1. Dandekar V.M.and N.Nath (1971), Poverty in India, Indian school of political Economy, Pune.

2. Ganguli B. N. (1977): Indian Economic Thought - A 19th Century Perspectives,Tata Mc Grow Hill, New Delhi.

3. Rath Nilkanth(1995) V.M.Dandekar Social Scientist with a Difference : Journal of Indian School of Political Economy.Oct-Dec.1995, Vol-7 No-4.
4. Seshadri G.B.(1997): Economic Doctrines, Publishing Corporation, New Delhi.
5. चा.भ.खैरमोडे (१९७८) – डॉ.भीमराव रामजी आंबेडकर, खंड १ ला , खंड २ रा खंड ७ वा, प्रताप प्रकाशन.
6. गांधी मो.क.(१९९७) -मराठी अनुवाद सीताराम पुरोपोत्तम पटवर्धन'सत्याचे प्रयोग अथवा आत्मकथा पाचवी आवृत्ती.
7. डॉ.जे.एफ.पाटील (२०१५)– आर्थिक विचारांचा इतिहास, फडके प्रकाशन, कोल्हापूर.
8. इंगळे बी.डी. (२०११) आर्थिक विचारांचा इतिहास, अरुणा प्रकाशन, लातूर.
9. प्रा.रायखेलकर,डॉ.दामजी (२०११) – आर्थिक विचारांचा इतिहास, विद्या बुक पब्लिशर्स,औरंगाबाद.
10. प्रा.डॉ.अनिलकुमार वावरे, प्रा.संजय धोंडे, व डॉ.अनिल सत्रे (२०१४)– आर्थिक विचारांचा इतिहास, एज्युकेशनल पब्लिशर्स अॅन्ड डिस्ट्रिब्युटर्स,औरंगाबाद.
11. प्रा.रा.म.गोखले - आर्थिक विचारांचा इतिहास
12. डॉ.विजय कविमंडन - आर्थिक विचारांचा इतिहास

SHIVAJI UNIVERSITY, KOLHAPUR

Revised Syllabus for

Bachelor of Arts (Part- III)

SEMESTER V & VI

HISTORY

(Syllabus to be implemented from June 2020 onwards)

EQUIVALANCE OF B.A. III HISTORY SEMESTER- V

Semester	Paper No	Title of Old Paper (June 2015)	Semester	Course No	Title of New Course (June 2020)
V	Paper No. VII	History of Ancient India (From Prehistory to 3rd c. BC)	V	Course No. VII	Early India (from beginning to 4th c. BC)
V	Paper No. VIII	Political History of Medieval India (1206 to 1707 A.D.)	V	Course No. VIII	History of Medieval India (1206-1526 AD)
V	Paper No. IX	India Since Independence –I	V	Course No. IX	Age of Revolutions
V	Paper No. X	History of the Marathas (1707-1818)	V	Course No. X	Political History of the Marathas
V	Paper No. XI	Introduction to Historiography	V	Course No. XI	History: Its Theory

EQUIVALANCE OF B.A. III HISTORY SEMESTER VI

Semester	Course No	Title of Old Paper	Semester	Course No	Title of New Course
VI	Paper No. XII	History of Ancient India (From 3 c. BC to 7th c. AD)	VI	Course No. XII	Ancient India (From 4th c. BC to 7th c. AD)
VI	Paper No. XIII	Socio-Economic and Cultural History of Medieval India (1206 to 1707 A.D.)	VI	Course No. XIII	History of Medieval India (1526-1707 AD)
VI	Paper No. XIV	India Since independence- II	VI	Course No. XIV	Making of the Modern World (16th to 19th Century)
VI	Paper No. XV	Modern Maharashtra (1960 to 2000)	VI	Course No. XV	Polity, Economy and Society under the Marathas
VI	Paper No. XVI	Applications of History	VI	Course No. XVI	Methods and Applications of History

STRUCTURE OF PROGRAMME

REVISED SYLLABUS B.A. PART III (HISTORY)

Sr.No	Semester	Title of Course	Course No.	Credit	Workload	Total Credits	Theory Marks	Term Work/ Seminar
1	V	Early India (from beginning to 4th c. BC)	Course No. VII	04	4 lectures/ Week	20 Credits	40	10
2	V	History of Medieval India (1206-1526 AD)	Course No. VIII	04	4 lectures/ Week		40	10
3	V	Age of Revolutions	Course No. IX	04	4 lectures/ Week		40	10
4	V	Political History of the Marathas	Course No. X	04	4 lectures/ Week		40	10
5	V	History: Its Theory	Course No. XI	04	4 lectures/ Week		40	10
Sr.No	Semester	Title of Course	Course No.	Credit	Workload	Total Credits	Theory Marks	Term Work/ Group Project
6	VI	Ancient India (From 4th c. BC to 7th c. AD)	Course No. XII	04	4 lectures/ Week	20 Credits	40	10
7	VI	History of Medieval India (1526-1707 AD)	Course No.XIII	04	4 lectures/ Week		40	10
8	VI	Making of the Modern World (16th to 19th Century)	Course No. XIV	04	4 lectures/ Week		40	10
9	VI	Polity, Economy and Society under the Marathas	Course No. XV	04	4 lectures/ Week		40	10
10	VI	Methods and Applications of History	Course No. XVI	04	4 lectures/ Week		40	10

B.A. Part -III, (History)

Semester –V, Course VII DSE E-61

Paper VII : Early India (from beginning to 4th c. BC)

Course Objectives: This course explores the major historical developments in India from the beginning to the 4rd Century B.C. It traces the history of the Indian subcontinent from the Paleolithic period to the establishment of the Mauryan state. The student will be introduced to the political, social, economic and religious developments in India during this formative period. This course will help the students to understand how India came to be. They will know the facts about the early period of Indian history up to the 4thcentury B.C. They will get an introduction to the beginnings of India's political, socio-economic and cultural dynamics and understand the legacy of Ancient India.

Course Outcomes:

After studying the course the student will be able to …

1) Understand the transition of humans in India from Hunters to Farmers
2) Explain the transition from Early to Later Vedic period.
3) Clarify the causes for the first and second urbanizations
4) Give an account of the teachings of Gautama Buddha and Vardhamana Mahavira
5) Describe the rise and growth of the Mauryan Empire
6) Explain the salient features of Ashoka's Dhamma

Module I:The Beginning

a) The Hunter-Gatherers: Paleolithic and Mesolithic
b)The Early Farmers: Neolithic and Chalcolithic
c) The First Urbanization: Harappan Civilization
d)The Megalithic Nomads: Burial types, nature of remains

Module II: The Vedic Age and Epics

a) Vedic literature
b) Transition from Early to Later Vedic period: Polity and Economy
c)Transition from Early to Later Vedic period: Society and Religion
d) The Epics: Ramayana and Mahabharata

Module III: The Second Urbanization

a) Nature of second urbanization
b) Emergence of Regional States (16 Maha-janapadas)
c) Gautama Buddha- His teachings
d) Vardhamana Mahavira- His teachings

Module IV: The Mauryan Empire

a) Sources: Arthashastra and Indica
b) Chandragupta Maurya and Ashoka
c)Mauryan administration
d) Ashoka's Dhamma

Select Reference Books:

- Allchin, B. G.; Allchin, B.; Allchin, R.; Yoffee, N.; Alcock, S.; Dillehay, T. et al. (1982): The Rise of Civilization in India and Pakistan: Cambridge University Press (Cambridge World Archaeology).
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- Singh, U. (2009): A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century (PB): Pearson India.
- Thapar, R. (2004): Early India: From the Origins to AD 1300: University of California Press.
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- थापर रोमिला दी पेंग्वीन हिस्टरी ऑफ अर्ली इंडिया, के सागर पब्लिकेशन्स; पुणे, २०१८
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- ढवळीकर, मधुकर केशव., आर्यांच्या शोधात, राजहंस प्रकाशन; पुणे, २०१२
- ढवळीकर, मधुकर केशव, कोण होते सिंधू लोक ?, राजहंस प्रकाशन प्रा लि; पुणे, २०१६
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B.A. Part III

Semester V, Course No: VIII DSE E-62

History of Medieval India (1206-1526 AD)

Course Objectives: This course covers the important period of Medieval Indian History. It was during this period that the Sultans established their rule in India. They introduced fundamental changes in polity, society, religion and culture of India. The course will acquaint the with various sources of medieval Indian history. They will get knowledge about the activities of major rulers and the policies followed by them. The students will know about the agricultural condition, development of trade and industry as well as the social, religious and architectural milieu of the period.

Course Outcomes:

After studying the course the student will be able to…

1) Describe the different types of historical sources available for writing the history of medieval India

2) Explain the contributions of medieval rulers like Allaudin Khilji, Muhammad-bin-Tuqhlaq, Krishnadevraya, and Mahmud Gavan

3) Give an account of the administration and economy of the Delhi sultanate and Vijayanagar Empire

4) Elucidate the significant developments which took place in religion, society and culture

Module I - Sources:

a) Literary: Tarikh-i- Firozshahi, Amuktamalyada

b) Archaeological (excluding Monuments)

c) Account of Foreign Travelers: Ibn Battuta, Domingo Paes

Module II - Major Rulers

a)Allaudin Khilji: Internal policy and reforms

b) Muhammad - bin- Tughlaq : Experiment of Token Currency

c) Krishnadevraya: Military success and cultural contribution

d) Mahmud Gavan: Contribution to Bahmani Kingdom

Module III - Administration and Economy(Delhi Sultanate and Vijaynagar)

a) Administration : Central and Provincial

b) Agriculture and Land Revenue

c) Industry and Trade

Module IV) Religion, Society and Culture:

a) Sufi Order: Chishti Silsila; Bhakti Movement: Sant Kabir; Sikh Religion: Guru Nanak

b) Society: Hindu and Muslim

c)Architecture: Delhi Sultanate, Vijaynagar and Bahamani.

Select Reference Books:

- Rizvi, S.A.A., The Wonder that was India, Part II, Rupa, Delhi,2002
- Chitnis, K.N., Glimpses of Medieval Indian Ideas and Institutions, 1974

- Chitnis K. N. Socio- Economic Aspects of Medieval India, Poona, 1979
- Mehta, Jaswant Lal, Advanced Study in the History of Medieval India, Volume I to III, Sterling, New Delhi, 1981.
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- जदूनाथ सरकार, औरंगजेब, डायमंड प्रकाशन, पुणे, २००६

B.A. Part III

Semester V, Course No: IX DSE E-63

Age of Revolutions

Course Objectives: This course introduces the students to the pathbreaking events of global history. The students will study the accounts of the causes and consequences of the transformative revolutions which changed the history of mankind. They brought about sudden big changes not only in the country in which they happened but also the world in general. Most of them left a lasting effect on the thought and the socio-political and cultural conditions of mankind. The course has been framed to make the students aware of the change and impact of these revolutionary events.

Course Outcomes:

After studying the course the student will be able to…

1) Explain the causes and consequences of the Reformation
2) Give an account of the role played by Martin Luther
3) Explain the salient features of the Industrial revolution
4) Given an account of the American revolution
5) Explain the causes, effects and major events of French Revolution
6) Explain the role of major leaders of the French Revolution

Module I: Reformation (16th Century)

a) Causes
b) Role of Martin Luther
c) Consequences

Module II: Industrial Revolution (18th Century)

a) Causes
b) Major Developments
c) Effects

Module III: American Revolution (1776)

a) Causes
b) Important events
c) Impact

Module IV: French Revolution (1789)

a) Causes
b) Important events and major leaders
c) Impact on the world

Select Reference books:

- Arun Bhattacharjee, World Revolutions, Ashish Publishing House, New Delhi, 1988
- L. Mukherjee, A Study of Modern Europe and the World, Calcutta, 2011
- John Merriman, A History pf Modern Europe; From the Renaissance to the Present, W.W. Norton and Company, 2009
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- प्रा. ना. गो. भवरे, डॉ. मु. बा. देवपुजारी, अमेरिकाचा इतिहास, पायल प्रकाशन, नागपूर १९७३
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- मदन मार्डीकर, आधुनिक युरोपचा इतिहास इ.स. १७८१ ते १९४५,विद्या बुक्स, २००५
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- देसाई दत्ता, आधुनिकतेचे आगमन: युरोपकेंद्री इतिहासाचा जागतिक विचार, द युनिक अकॅडमी; पुणे, २०१५
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B.A. Part - III
Semester V, Course No. X DSE E-64
Political History of the Marathas

Course Objectives: The course is designed to study the political condition of Marathas after 1707. The Maratha polity was transformed into the largest political entity of India in the eighteenth century. The course introduces the students to the political developments which led to the expansion of Maratha power in the eighteenth century. It also explores the causes and events which led to the eventual decline of Maratha power.

Course Outcomes:

After studying the course the student will be able to…

1) Describe the political conditions of the Marathas upto the year 1740
2) Explain the role of Balaji Bajirao.
3) Explain the causes and effects of the Battle of Panipat.
4) Understand the political condition of the Marathas after 1761.
5) Critically analyze the causes for the decline of Maratha power.

Module I: Political condition up to 1740

a. Release of Shahu; Struggle between Shahu and Maharani Tarabai.
b. Balaji Vishwanath : Delhi Campaign, Maratha Confederacy
c. Bajirao Peshwa: Northern Policy, Relations with Nizam

Module II: Balaji Bajirao and Battle of Panipat(1761)

a. Relations with Angre
b. Conflict with Raghuji Bhosale
c. Battle of Panipat-1761

Module: III Political condition after 1761

a. Madhavrao Peshwa
b. Mahadji Shinde
c. Nana Phadnavis

Module IV: Decline of the Maratha Power

a. Peshwa Bajirao II
b. Second and Third Anglo- Maratha War
c. Causes for the decline of Maratha power

Select Reference books :

- अप्पासाहेब पवार (संपा) : ताराबाई कालीन कागदपत्रे, खंड १, शिवाजी विद्यापीठ, २०१८
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- प्र.न.देशपांडे : मराठी सत्तेचा उदय आणि उत्कर्ष, स्नेहवर्धन पब्लिशिंग हाऊस, पुणे, २००१
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- जयसिंगराव पवार : महाराणी ताराबाई, तारारणी विद्यापीठ प्रकाशन, १९७५
- जयसिंगराव पवार मराठी साम्राज्याचा उदय आणि अस्थ, कोल्हापूर , १९९३
- त्र्यं.श.शेजवलकर, श्री शिवछत्रपती- संकल्पित शिवचरित्राची प्रस्तावना, आराखडा. व साधने, मराठा मंदीर प्रकाशन, मुंबई, १९६४.
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- गो. स. सरदेसाई, मराठी रियासत, १ ते ८ खंड , पॉप्युलर प्रकाशन, पुणे
- V.G. Dighe, Peshwa Bajirao and Maratha expansion, Karnatak Publishing House, Bombay, 1944
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- S.R. Sharma- The founding of Maratha freedom, Orient Longmans, Bombay, 1964
- H.N. Sinha – Rise of the Peshwas, The Indian Press (Publications) Ltd, Allahabad, 1954
- S.N.Sen-, Anglo Maratha Relations 1785-1796, Macmillan , Madras, 1974
- P.C.Gupta, Bajirao II and East India Company, Allied Publications Private Limited, Calcutta, 1964
- Brij Kishore, Tarabai and his Times , Bombay , 1963
- G.S. Sardesai- New History of Maratha's Vols I,II and III, Bombay, 1948

B.A. Part III:
Semester V, Course No. XI DSE E-65
History: Its Theory

(Field visit to any important historical place, monuments and record offices is essential)

Course Objectives:

This course has been designed to impart knowledge of the discipline of history to the students. The students will learn the nature and scope of the discipline. They will have a clear understanding of the nature of the evidence collected from primary and secondary sources. They will be introduced to the process of presenting and writing history. They will know the methods of writing history.

Course Outcomes:

After studying the course the student will be able to…

1) Understand the definition and scope of the subject of History
2) Know the process of acquiring historical data
3) Explain the process of presenting and writing history
4) Understand the methods of writing history

Module I: History: Definition and Scope

a) Meaning, Scope and Nature
b) Types of History
c) Interdisciplinary Approach

Module II: Acquisition of Historical Data

a) Sources: Nature and Types
b) Methods of Data Collection
c) Methods of Critical Enquiry

Module III: Process of presenting and writing history

a) Steps of Historical Research
b) Data Analysis and Interpretation
c) Presentation

Module IV: Methods of History writing

a) Notetaking
b) Footnotes and Endnotes
c) Index, Appendix, Bibliography

Select Reference books:

- B. Shaik, Ali., History, Its Theory and Method, Macmillan India Ltd, Madras, 1978
- Carr, E. H., What is History, Palgrave Publishers Ltd., Macmillan, 1986
- Chitnis, K. N., Research Methodology in History, Poona, 1979

- Bajaj, S. K., Research Methodology in History, Anmol Publications Pvt. Ltd., New Delhi, 1998
- Collingwood, R. G., The Idea of History, Oxford University Press, Oxford 1978
- Gottschalk, Louis., Understanding History, New York, Second Edition, 1969
- Majumdar, R. C., Historiography in Modern India, Bombay, 1970.
- कोठेकर, शांता., इतिहास तंत्र आणि तत्त्वज्ञान, श्री साईनाथ प्रकाशन, नागपूर, २००५
- गायकवाड, आर. डी., सरदेसाई, बी. एन. आणि हनमाने, व्ही. एन. इतिहासलेखन पद्धत व ऐतिहासिक स्मारके यांचा अभ्यास, फडके प्रकाशन, कोल्हापूर, १९८८
- गद्रे, प्रभाकर., इतिहास लेखनाच्या परंपरा, श्री मंगेश प्रकाशन, नागपूर, २००४
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- सरदेसाई, बी. एन., इतिहासलेखन परिचय, फडके प्रकाशन, कोल्हापूर, २००६
- देशमुख, प्रशांत., इतिहासाचे तत्त्वज्ञान, विद्या बुक्स पब्लिशर्स, औरंगाबाद, २००५
- लेले, वि. गो., (अनुवादक) इतिहास म्हणजे काय? कॉन्टिनेन्टल प्रकाशन, पुणे, १९९४
- आठवले, सदाशिव., इतिहासाचे तत्त्वज्ञान, प्राज्ञपाठशाला, वाई, १९६७
- आगलावे, प्रदीप., सामाजिक सनोधन, पदधती शास्त्र व तंत्र, साईनाथ प्रकाशन, नागपूर, २०१९
- देव, प्रभाकर., इतिहस ऐक शास्त्र, कल्पना प्रकाशन नांदेड, १९९७

SEMESTER VI

B.A. Part III

Semester VI, Course No. XII DSE E-186

Ancient India (From 4th c. BC to 7th c. AD)

Course Objectives: This course explores the history of India from the 4th century BC to the 7th century A.D. It takes a panoramic survey of the historical developments during this crucial period of Indian history. The course studies the eventful changes which took place under the Satavhana, Kushanas, Guptas, Vakatakas , Chalukyas and Pallavas. The students will be introduced to the incomparably vivid picture of India which prevailed during the ancient period. They will be acquainted with not only the glory of Ancient India but also the social inequality and social evils which have shaped India in the past.

Course Outcomes:

After studying the course the student will be able to…

1) Know the political ,economic and religious developments which took place in early historic India

2) Explain the role played by Major Satavahana, Kushana, Gupta and Vakataka Kings

3) Give an account of the developments in the Post-Gupta period

4) Have an informed opinion about the society and culture of Ancient India

Module I: Early Historic India

a)Sources: Gatha Saptashati, Periplus of the Erythraean Sea

b)Major Kings: Satavahana and Kushanas

c)Industry and Trade

d) Hinayana Buddhism

Module II: The Classical Age

a) Major Kings: Guptas and Vakatakas

b)Economy and Greater India

c)Literature and Science

d)Religion

Module III: The Post-Gupta Period

a) Source: Hiuen Tsang

b)North India: Harshavardhana

c) Deccan: Early Chalukyas of Badami

d) South India: Pallavas

Module IV: Society and Culture

a) Position of Women and Varna Structure (From Vedic period to Post-Gupta period)

b) Education

c) Art (From Mesolithic Art to Ajanta Paintings)

d) Architecture- (Rock-Cut Caves (Maharashtra) to Constructed Temples (Madhya Pradesh)

Select Reference Books :

- Jha, D. N. (1977): Ancient India: an introductory outline: People's Pub. House.
- Kosambi, D. D. (1975): An Introduction to the Study of Indian History: Popular Prakashan.
- Majumdar, R. C.; Bharatiya Vidya Bhavan; Bhāratīya Itihāsa Samiti (1951): The History and Culture of the Indian People: The Vedic age: G. Allen 8 Unwin (The History and Culture of the Indian People).
- Sharma, R. S. (1991): Aspects of Political Ideas and Institutions in Ancient India: Motilal Banarsidass.
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- Sharma, R. S.; Kumar, D. (2018): Bharat Ka Prachin Itihas: Oxford University Press India.
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- Majumdar, R. C.; Altekar, A. S. (1986): Vakataka - Gupta Age Circa 200-550 A.D: Motilal Banarsidass (History and Culture Series).
- Munshi, K. M.; Majumdar, R. C. (1997): The Classical Age: Bharativa Vidya Bhavan (History and culture of the Indian people / General ed.: R.C. Majumdar).
- Sastri, K.A.N. (1958): A history of South India from prehistoric times to the fall of Vijayanagar: Oxford University Press.
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- कोसंबी डी. डी., प्राचीन भारतीय संस्कृती आणि सभ्यता , ICHR, डायमंड प्रकाशन, २००६
- थापर रोमिला, अर्ली इंडिया, के सागर पब्लिकेशन, पुणे, २०१३
- थापर रोमिला दी पेंग्वीन हिस्टरी ऑफ अर्ली इंडिया, के सागर पब्लिकेशन्स, पुणे, २०१८
- वासंती फडके (अनु.), एंशंट इंडिया (प्राचीन भारत) मूळ लेखक शर्मा आर.एस., के सागर पब्लिकेशन, पुणे, २०१५

B.A. Part III

Semester VI, Course No. XIII DSE E-187

History of Medieval India (1526-1707 AD)

Course Objectives : This course explores the history of the Mughal period in India. The Mughals introduced fundamental changes in the polity, economy, society, culture and religion of India. The Bahamani kingdom in the Deccan also split up into five smaller kingdoms during this period. In the course the students will be introduced to the important events, personalities and developments in India. They will know the policies followed by important rulers and will acquaint themselves with the general scenario prevalent in India during the period. They will understand how a syncretic culture developed in India during the period.

Course Outcomes:

After studying the course the student will be able to…

1) Know about the various sources for writing Medieval Indian history
2) Explain the role of rulers like Babar, Akbar, Chandbibi and Ibrahim Adilshah II
3) Gain knowledge about the administrative and revenue system
4) Describe the condition of Industry and trade
5) Explain important developments in religion, society and culture

Module I: Sources

a) Literary: Akbarnama, Gulshan -i -Ibrahimi
b) Archaeological (excluding monuments)
c) Accounts of Foreign Travelers: Francois Bernier, Niccolo Manucci

Module II - Major Rulers

a) Babar: Battle of Panipat and foundation of Mughal empire.
b) Akbar: Rajput policy
c) Chandbibi
d) Ibrahim Adilshah II

Module III- Administration and Economy

a) Administration: Central and Provincial
b) Land Revenue: Akbar and Malik Ambar
c) Industry and Trade

Module IV: Religion, Society and Culture

a) Religious Policy: Akbar and Aurangzeb
b) Society: Hindu and Muslim
c) Architecture: Mughal and Adilshahi

Select Reference Books:

- Rizvi, S.A.A., The Wonder that was India, Part II, Rupa, Delhi, 2002
- Chitnis, K.N., Glimpses of Medieval Indian Ideas and Institutions, 1974
- Chitnis K. N. Socio- Economic Aspects of Medieval India, Poona, 1979

- Mehta, Jaswant Lal, Advanced Study in the History of Medieval India, Volume I to III, Sterling, New Delhi, 1981.
- Qureshi I.H., The Administration of the Moghal Empire, Delhi, Low Price, Publication 1990
- Raychaudhuri Tapan and Irfan Habib (eds.), Cambridge Economic History of India, Vol. I. C. 1200 C. 1750., Delhi, S. Chand, 1984
- J.F. Richards, The Mughal Empire, Delhi Foundation Books, 1993.
- Satish Chandra, History of Medieval India (800- 1700), Orient Longman, Hyderabad, 2007
- जे. एल. मेहता, क्षीरसागर वि. एस, देशपांडे व्ही. टी, मध्ययुगीन भारताचा बृहत इतिहास , तीन खंड, के' सागर पब्लिकेशन्स, पुणे, २०१७
- Stein, Burton, Vijayanagara , Cambridge University Press, 1989
- M. P. Patil, Court Life under the Vijaynagar Rulers, B.R. Publishing Corporation, 1999
- सतीश चंद्र , वि. एस. क्षीरसागर, मद्ययुगीन भारत – मोगल साम्राज्य १५२६- १७४८, के सागर पब्लिकेशन्स, २०१७
- Salma Ahmed Farooqui, A Comprehensive History of Medieval India, Pearson, 2011.
- के. एन चिटणीस: मध्ययुगीन भारतीय संकल्पना व संस्था, खंड १ ते ४, पुणे, १९८२
- श. गो. कोलरकर: मध्ययुगीन भारताचा इतिहास (१२०६ ते १७०७) , श्री मंगेश प्रकाशन , १९९४
- बारगळ व ढवळे, मध्यकालीन भारत , विद्याप्रकाशन, नागपूर, १९८७
- डब्ल्यू. एच. मूरलॅन्ड, अबकार कालीन हिंदुस्थान , ICHR, डायमंड प्रकाशन, पुणे, २००६
- डब्ल्यू. एच. मूरलॅन्ड, अबकार ते औरंगझेब, ICHR, डायमंड प्रकाशन, पुणे, २००६
- एन. ए. सिद्दिकी, मोगलकालीन महसूल पद्धती, ICHR, डायमंड प्रकाशन, पुणे , २००६
- जदूनाथ सरकार, औरंगजेब, डायमंड प्रकाशन, पुणे, २००६

B.A. Part III

Semester VI , Course No: XIV. DSE E-188

Making of the Modern World (16th to 19th Century)

Course Objectives: This course deals with significant events in global history. The primary objective of the course is to introduce the students to the important events which have happened in the world in modern times. These events which were revolutionary in character had a profound impact on the making of the modern world. The students will be acquainted with the events of the Glorious revolution in England. They will understand the causes for the rise and spread of Nationalism and Imperialism. Moreover, they will know about some select important personalities who contributed to the making of the Modern World.

Course Outcomes:

After studying the course the student will be able to…

1) Know the causes and consequences of the Glorious revolution in England
2) Explain the concept of Nationalism and account for its rise and spread.
3) Describe the unification of Italy and Germany.
4) Give an account of the rise, growth and impact of Imperialism
5) Explain the significance of the Partition of Africa
6) Know the life and thoughts of important leaders like Metternich, Karl Marx and Abraham Lincoln

Module I: Glorious Revolution

a)Causes
b) Major events
c) Consequences

Module II: Nationalism

a) Causes for the rise and spread of Nationalism
b) Unification of Italy and Germany
c) Impact

Module III : Imperialism

a) Causes for rise and growth of Imperialism
b) Partition of Africa
c) Impact on the world

Module IV: Important Personalities

a) Metternich
b) Karl Marx
c)Abraham Lincoln

Select Reference books:

- Arun Bhattacharjee, World Revolutions, Ashish Publishing House, New Delhi, 1988
- L. Mukherjee, A Study of Modern Europe and the World, Calcutta, 2011
- David Thompson, Europe Since Napoleon, Penguin books, 1971
- T.C.W. Blanning, The Oxford History of Modern Europe, OUP, 2000

- C.J.H. Hayes, Modern Europe to 1870 , Macmillan, University of Michigan, 1953
- Desmond Seward, Metternich: The First European, Thistle Publishing, 2015
- मदन मार्डीकर, आधुनिक युरोपचा इतिहास इ.स. १७८१ ते १९४५, विद्या बुक्स, २००५
- लिमये, स्मिता, अब्राहम लिंकन: दास्यमुक्तिचा देवदूत, निधीगंधा बुक एजन्सी; नागपूर, २०१७
- कारखानीस सरला, कार्ल मार्क्स चरित्र आणि विचार, जयंत एस भट, १९६०
- बापट राम, कार्ल मार्क्सचा विचार, परामर्श प्रकाशन, १९८४

- गवळी पा. आ. : पेशवेकालीन समाज व जातीय संगर्ष, १९८२
- गवळी पा. आ., पेशवेकालीन गुलामगिरी व अस्पृश्यता, १९८१
- ओतुरकर, आर्. व्ही., पेशवेकालीन सामाजिक व आर्थिक जीवन, खंड १, भा. इ. सं. मं. , १९५०
- गवळी, पा. आ., पेशवेकालीन गुलामगिरी व अस्पृश्यता, प्राची प्रकाशन, कोल्हापूर, १९९०
- गवळी, पा. आ., पेशवेकालीन महाराष्ट्र-संस्था व संकल्पना, कैलास पब्लिकेशन्स औरंगाबाद, २०००
- चापेकर, ना. गो., पेशवाईच्या सावलीत, पुणे, १९३७
- जोशी, एस्. एन्., मराठेकालीन समाजदर्शन, अ. वि. गृह प्रकाशन, पुणे, १९६०
- हेरवाडकर, आर. व्ही., मराठी बखर, व्हीनस प्रकाशन, मुंबई, १९८६
- Chitnis, K. N., Glimpses of Medieval Indian Ideas and Institutions, 2nd ed., Pune, 1981
- Chitnis, K. N., Glimpses of Maratha Socio-Economic History, Atlanta Polishers, New Delhi, 1994
- Choksey, R. D., Economics Life in Bombay Deccan, Asia Publishing House, Mumbai 1955
- Desai, S.V., Social Life in Maharashtra under the Peshwas, Popular Prakashan, Bombay, 1962
- Duff, Grant., A History of Mahrattas, Vol. I to III, Oxford University Press, Calcutta, 3rd ed., 1921
- Gune, V. T., The Judicial System of the Marathas, Deccan College, Pune, 1953
- Kulkarni, A. R., Maharashtra in the Age of Shivaji (A Study in Economic History), Pune, 1969.
- Mahajan, T. T., Industry, Trade and Commerce during the Peshwa period, Jaipur, 1980
- Kadam V.S. Maratha Confederacy:A study in its origin and development, Munshiram Manoharlal Publishers Pvt Limited , 1993
- Fukazawa, H – The Medieval Deccan: Peasants, Social Systems and States Sixteenth to Eighteenth Centuries, OUP, New Delhi, 1999

B.A. Part III
Semester VI, Course No. XV DSE E-189
Polity, Economy and Society under the Marathas

Course Objectives : The objective of the course is to explore the nature of the Maratha polity. It will acquaint the students with the economic and social condition prevalent under Maratha rule. The course will also introduce the students to the sources of Maratha history.

Course Outcomes:

After studying the course the student will be able to…

1) Know the various sources for writing the history of the Marathas
2) Explain the significant developments in the polity of the Marathas
3) Describe the economic conditions
4) Explain the social conditions.

Module I: Sources

a. Importance of sources
b. Indian Sources: Sanskrit, Marathi, Persian
c. Foreign sources : Portuguese and English

Module II: Polity under the Marathas

a. Concept of Kingship
b. Asthapradhan Mandal
c. Transfer of power – Chhatrapati to Peshwa, Peshwa to Karbhari

Module III: Economic condition

a. Agrarian system – Land Revenue, Irrigation
b. Industry
c. Trade and Commerce

Module IV: Social condition

a. Social Structure - Family , Untouchability, Vethbegar , Slavery.
b. Condition of women and caste system
c. Education and Festivals

Select Reference books :

- शेणोलीकर ह.श्री. महाराष्ट्र संस्कृती : घडण आणि विकास, मोघे प्रकाशन, कोल्हापूर, १९७२
- भावे. व. कृ. : शिवराज्य व शिवकाल, भावे प्रकाशन, पुणे, १९५९
- अत्रे. त्र्यं. ना. गाववाडा, राजहंस प्रकाशन प्रा लि., पुणे, २०१८
- वि. गो. खोबरेकर , महाराष्ट्रातील दप्तरखाने: वर्णन आणि तंत्र, १९६८
- कुलकर्णी अ. रा. : शिवकालीन महाराष्ट्र, १९९३ आवृत्ती

B.A. Part III

Semester VI , Course No. XVI DSE E-190

Methods and Applications of History

Couse Objectives: This course has been designed to impart knowledge of the methods of history to the students. The students will understand the nature of archival sources. They will be introduced to the trends of local and oral history and will know about the tools of local history like Survey, Interview and Questionnaire. The students will be introduced to the technique of collecting data through oral interviews. The students will understand the concept of the museum and learn the basic principles of museology. Moreover, the course will introduce the students to the relevance of monumental heritage and its relationship with the discipline of history through the concept of Heritage Tourism

Course Outcomes:

After studying the course the student will be able to…

1) Understand the nature of archival sources
2) Gain conceptual clarity about recent trends in history.
3) Know about the application of history in museums.
4) Explain the concept and scope of heritage tourism.

(Note: The students should undertake Individual/ Group field projects for assignments in which they could take oral interviews / surveys/ regarding persons, events and local socio-political, economic and cultural developments related to local history. They should make audio recordings of the interviews and develop an archive of local oral history in the college department. These audio interviews would form an important source of local history)

Module I: Archival Sources

a) Meaning, types, and importance of Archives
b) Types of Records
c) Concept of Digital Archives

Module II: Recent Trends in History

a) Local History
b) Oral History
c) Tools of Local History (Survey, Interview, Questionnaire)
d) Interview Technique

Module III: Museology

a) Definition, Nature and Importance of Museum
b) Types of Museums
c) Methods of Collection, Conservation and Preservation Techniques of Objects

Module IV -Understanding Heritage Tourism

a) Concept, Scope and Significance of Heritage Tourism

b) Meaning and Historical Perspective of Tourism

c) World Heritage Sites in India

Select Reference books:

- B. Shaik, Ali., History:Its Theory and Method, Macmillan India Ltd, Madras, 1978
- Chitnis, K. N., Research Methodology in History, Poona, 1979
- Bajaj, S. K., Research Methodology in History, Anmol Publications Pvt. Ltd., New Delhi, 1998
- Sreedharan, E., A Textbook of Historiography 500 BC to AD 2000, Orient Longman, Hyderabad, 2000
- Sarkar, H., Museums and Protection of Monument and Antiquities in India, New Delhi, 1980
- Agarwal, O. P. Conservation of Manuscripts and Pantings of South East Asia, London, 1984
- कोठेकर, शांता., इतिहास तंत्र आणि तत्त्वज्ञान, श्री साईनाथ प्रकाशन, नागपूर, २००५
- गायकवाड, आर. डी., सरदेसाई, बी. एन. आणि हनमाने, व्ही. एन. इतिहासलेखन पद्धत व ऐतिहासिक स्मारके यांचा अभ्यास, फडके प्रकाशन, कोल्हापूर, १९८८
- गद्रे, प्रभाकर., इतिहास लेखनाच्या परंपरा, श्री मंगेश प्रकाशन, नागपूर, २००४
- सरदेसाई, बी. एन., इतिहासलेखनपद्धती, फडके प्रकाशन, कोल्हापूर, २००४
- राजदेरकर, सुहास., इतिहासलेखनशास्त्र, विद्या प्रकाशन, नागपूर, १९९८
- सरदेसाई, बी. एन., इतिहासलेखन परिचय, फडके प्रकाशन, कोल्हापूर, २००६
- देशमुख, प्रशांत., इतिहासाचे तत्त्वज्ञान, विद्या बुक्स पब्लिशर्स, औरंगाबाद, २००५
- बेंद्रे, वा. सी., शिवशाहीचा चर्चात्मक इतिहास: साधन चिकित्सा, लोकवाङ्मय गृह, मुंबई, १९७६
- आठवले, सदाशिव., इतिहासाचे तत्त्वज्ञान, प्राज्ञपाठशाला, वाई, १९६७
- धाटावकर, भास्कर., महाराष्ट्रातील शासकीय पुरालेखागारांची निर्मिती आणि कार्य, चेतन प्रकाशन, मुंबई, २०१०
- खोबरेकर, वि. गो., महाराष्ट्रातील दफ्तरखाने वर्णन व तंत्र, मुंबई, १९८८
- बोरकर, रघुनाथ, संग्रहालयशास्त्र, पिंपळापुरे बुक, नागपूर , २००७
- खतीब, के. ए., पर्यटन भुगोल, मेहता पब्लिशिंग हाऊस, पुणे, २००६

- आगलावे, प्रदीप., सामाजिक संशोधन- पद्धती शास्त्र व तंत्र, साईनाथ प्रकाशन, नागपूर, २०१९
- देव, प्रभाकर., इतिहास ऐक शास्त्र, कल्पना प्रकाशन नांदेड, १९९७
- राऊत, गणेश (संप), दत्तक गावांचा इतिहास, खंड १, २, ३, पुणे विद्यापीठ, पुणे, १९९९
- वांबूरकर जास्वंदी, इतिहास लेखनातील नवे प्रवाह, डायमंड प्रकाशन, पुणे, २०१५

Shivaji University, Kolhapur

B.O.S. in Chemistry

B.Sc. Part – III

Semester CBCS Syllabus

To be implemented from June - 2020

INTRODUCTION

This syllabus is prepared to give the sound knowledge and understanding of chemistry to undergraduate students at last year of the B.Sc. degree course. The goal of the syllabus is to make the study of chemistry as stimulating, interesting and relevant as possible. The syllabus is prepared by keeping in mind the aim to make students capable of studying chemistry in academic and industrial courses and to expose the students, to develop interest in them in various fields of chemistry. The new and updated syllabus is based on disciplinary approach with vigour and depth taking care the syllabus is not heavy at the same time it is comparable to the syllabi of other universities at the same level. The syllabus is prepared after discussions of number of faculty members of the subject and by considering the existing syllabi of B.Sc. Part-I, II & III, new syllabi of XIth & XIIth standards, syllabi of NET and SET exams. U.G.C. model curriculum, syllabi of different entrance examination and syllabi of other Universities.

The units of the syllabus are well defined and the scope is given in detail. The periods required for units are given. The lists of reference books are given in detail.

OBJECTIVES

1. To promote understanding of basic facts and concepts in Chemistry while retaining the excitement of Chemistry
2. To make students capable of studying Chemistry in academic and Industrial courses and to expose the students to different processes used in Industries and their applications.
3. To expose the students to various emerging new areas of Chemistry and apprise them with their prevalent in their future studies and their applications in various spheres of chemical sciences.
4. To develop problem solving skills in students.
5. To developed ability and to acquire the knowledge of terms, facts, concepts, processes, techniques and principles of subjects.
6. To develop ability to apply the knowledge of contents of principles of chemistry.
7. To inquire of new knowledge of chemistry and developments therein.
8. To expose and to develop interest in the fields of chemistry
9. To develop proper aptitude towards the subjects
10. To develop the power of appreciations, the achievements in Chemistry and role in nature and society.
11. To develop skills required in chemistry such as the proper handling of appara tus and chemicals

Shivaji University, Kolhapur
B.O.S. in Chemistry
B.Sc. Part – III
Semester CBCS Syllabus
To be implemented from June – 2020

Equivalence

Sr. No.	Title of old paper (Syllabus implemented from June-2015)	Title of new paper (To be implemented from June-2020)
1	Paper – IX & XIII Physical Chemistry	Paper IX DSE-E5 and XIII DSE-F5 Inorganic Chemistry
2	Paper – X & XIV: Inorganic Chemistry	Paper- X DSE-E6 and XIV DSE-F6 Organic Chemistry
3	Paper-XI & XV: Organic Chemistry	Paper XI DSE-E7 and XV- DSE-F7 Physical Chemistry
4	Paper-XII & XVI: Analytical & Industrial Chemistry	Paper XII-DSE-E8 and XVI DSE-F8: Analytical & Industrial Chemistry

A repeater candidate, if any, will be allowed to appear for practical examination as per old course up to March / April 2021 examination.

List of Laboratory Equipments

Apparatus & Equipments

1. Digital balance with 1 mg accuracy
2. Conductometer
3. Potentiometer
4. pH Meter
5. Polarimeter
6. Colorimeter
7. Thermostat
8. Electric Oven
9. Suction Pump
10. Crucible Heater
11. IR Lamp
12. Magnetic stirrer
13. Buckner funnel
14. Water bath / Thermostat.
15. Platinum electrode
16. Glass electrode
17. Silver, Zinc, Copper electrodes
18. Conductivity cell
19. Distilled water plant.
20. Refractometer
21. Freeze
22. Deep Freeze
23. H_2S Apparatus
24. Muffle Furnace
25. Magnetic Stirrer

Glassware & Porcelain ware:

1. Burette (25/50 ml)

2. Micro burette (10 ml)
3. Pipette (5 ml,10 ml,25ml)
4. Graduated Pipette (1/2/5/10 ml)
5. Conical flask(100 ml, 250 ml)
6. Beakers (100 ml, 250 ml, 500 ml)
7. Volumetric flask (25ml,50 ml,100 ml, 250 ml)
8. Gooch Crucible / Sintered glass Crucible
9. Silica Crucible
10. Watch glass
11. Glass tubing
12. Glass Funnel (3")
13. Gas jar
14. Glass rod
15. Test Tubes (12 x100, 5x5x8)
16. Evaporating dish
17. TLC Unit
18. Measuring cylinder
19. Thile's tubes
20. Fusion Tube
21. Capillary tube
22. Stopper bottle
23. Thermometer ($1/10^{o}$, 360^{o})
24. Water condenser
25. Distillation flask (100 ml/ 250 ml)
26. Titration tiles.
27. Asbestos sheet.
28. Desiccators
29. Clay pipe triangle

Iron & Wooden ware:

1. Burners
2. Tripod stand

3. Iron stand
4. wire gauze
5. Burette stand
6. Test tube stand
7. Pair of tongs
8. Test tube holder
9. Spatula
10. Copper foil

Chemicals: All the chemicals required for experiments are mentioned in the syllabus.

Others:

1. Filter papers (Kalpi)
2. Whatman Filter paper No. 1, 40, 41 and 42.

Lab Safety Precautions / Measures in Chemistry Laboratory:

Part-I: Personal Precautions

1. All personnel must wear safety Goggles at all times.
2. Must wear the Lab. Aprons / Lab jacket and proper shoes.
3. Except in emergency, an over-hurried activity is forbidden.
4. Fume cupboard must be used whenever necessary.
5. Eating, Drinking and Smoking in the laboratories strictly forbidden.

Part-II: Use of safety and Emergency Equipments –

1. First aid kits.
2. Sand Bucket.
3. Fire extinguishers (dry chemical and carbon dioxide extinguisher).
4. Chemical storage cabinet with proper ventilation.
5. Material safety data sheets
6. Management of local exhaust system and fume hoods.
7. Sign in register if using instruments.

Nature of Theory Question Papers

N.B. The question paper should cover the entire syllabus. Marks allotted to questions should be in proportion to the lectures allotted to respective units.

Papers Semester V: IX-DSE-E5, X-DSE-E6, XI- DSE-E7, XII- DSE-E8,

Semester VI: XIII- DSE-F5, XIV-DSE-F6, XV-DSE-F7 and XVI- DSE-F8

Total Marks 40

Question No.	Details	Marks	Marks of Options
1.	Answer in one sentence (One mark for each question). Multiple choice questions (One mark for each question)	4 4	- -
2.	Long answer type questions (2 out of 3)	20	10
3.	Short answer type questions (3out of 5)	12	08
	Total	40	18

CHEMISTRY

Semester Syllabus for B.Sc.-III

Theory

1. N. B. Figures shown in bracket indicate the total lectures required for the respective topics.
2. The question paper should cover the entire syllabus. Marks allotted to questions should be in proportion to the lectures allotted to respective topics.
3. All topics should be dealt with S.I. units.
4. Study tour/industrial visit/visit to national institute or research laboratory is prescribed.
5. Use of recent editions of reference books is essential.
6. Use of scientific calculator is allowed.
7. **Values required for spectral problems should be provided in the question paper.**

B.Sc. Part III (CBCS) SEMESTER-V
Paper No. DSE-E5, Chemistry Paper No. –IX
(Inorganic Chemistry)
(Theory Credits: 02, 30 hours, 37 lectures)

Expected Learning Outcomes:

Name of the topic	Expected Learning Outcome
1. Acids bases and Non-aqueous solvents	Useful for the study of role of acids and bases in Chemistry. The study of non –aqueous solvents is important to learn all chemical properties of solutes and from the research point of view.
2. Metal ligand bonding in transition metal complexes	Useful to understand geometry, stability and nature of bonding between metal ion and ligand in complexes.
3. Metals, semiconductors and Superconductors	The topic deals with the synthesis and the applications of the semiconductors and Superconductors in electrical and electronic devices.
4. Organometalic compounds	The structure, method of preparation and the applications of organo metallic compound in various fields are explained.
5. Catalysis	The classification, types, mechanism and applications of catalyst in industrial fields is explained.

Unit 1. Acids, Bases and Non aqueous Solvents **[8]**

1.1 Introduction to theories of Acids and Bases-Arrhenius concept, Bronsted-Lowry concept, Lewis Concept, Lux-Flood Concept (definition and examples)

1.2 Hard and Soft Acids and Bases. (HSAB Concept)

1.2.1 Classification of acids and bases as hard, soft and borderline.

1.2.2 Pearson's HSAB concept.

1.2.3 Acid–Base strength and hardness-softness.

1.2.4 Applications and limitations of HSAB principle.

1.3 Chemistry of Non aqueous Solvents.

1.3.1 Introduction, definition and characteristics of solvents.

1.3.2 Classification of solvents.

1.3.3 Physical properties and Acid-Base reactions in Liquid Ammonia (NH_3) and Liquid Sulphur Dioxide (SO_2).

Unit 2. Metal Ligand bonding in Transition Metal Complexes **[10]**

2.1 Crystal field theory (CFT)

2.1.1 Introduction: Shapes of d-orbitals, Basic assumptions of CFT.

2.1.2 Crystal field splitting of d-orbitals of metal ion in octahedral, tetrahedral, square planar complexes and John-Teller distortion.

2.1.3 Factors affecting the Crystal field splitting.

2.1.4 High spin and low spin octahedral complexes w.r.t. Co (II).

2.1.5 Crystal Field stabilization energy (CFSE), Calculation with respect to octahedral complexes only.

2.1.6 Limitations of CFT.

2.2 Molecular orbital theory (MOT).

2.2.1 Introduction.

2.2.2 MOT of octahedral complexes with sigma bonding such as $[Ti(H_2O)_6]^{3+}$,$[CoF_6]^{3-}$, $[Co(NH_3)_6]^{3+}$.

2.2.3 Merits and demerits of MOT.

Unit 3. Metals, Semiconductors and Superconductors. **[9]**

3.1 Introduction.

3.2 Properties of metallic solids.

3.3 Theories of bonding in metal.

i. Free electron theory.

ii. Molecular orbital theory (Band theory).

3.4 Classification of solids as conductor, insulators and semiconductors on the basis of band theory.

3.5 Semiconductors- Types - intrinsic and extrinsic and applications of semiconductors.

3.6 Superconductors: Ceramic superconductors - Preparation and structures of mixed oxide $YBa_2Cu_3O_{7-x}$.

3.7 Applications of superconductors.

Unit.4. Organometallic Chemistry. **[4]**

4.1 Definition, Nomenclature of organometallic compounds.

4.2 Synthesis and structural study of alkyl and aryl compounds of Be and Al.

4.3 Mononuclear carbonyls -Nature of bonding in simple mononuclear carbonyls.:$[Ni(CO)_4]$, $[Fe(CO)_5]$, $[Cr(CO)_6]$.

Unit 5. Catalysis **[5]**

5.1 Introduction

5.2 Classification of catalytic reaction- Homogenous and Heterogeneous

5.3 Types of Catalysis.

5.4 Characteristics of catalytic reactions.

5.5 Mechanism of catalysis.

i. Intermediate compound formation theory.

ii. Adsorption theory.

5.6 Industrial applications of catalysis.

Reference Books:

1. Concise Inorganic Chemistry (ELBS, 5th Edition) – J. D. Lee.
2. Inorganic Chemistry (ELBS, 3rd Edition) D. F. Shriver, P. W. Atkins, C. H.Lang Ford, Oxford University Press, 2nd Edition.
3. Basic Inorganic Chemistry : Cotton and Wilkinson.
4. Advanced Inorganic Chemistry (4^{th} Edn.) Cotton and Wilkinson.
5. Concepts and Models of Inorganic Chemistry : Douglas and Mc. Daniel. 3^{rd} Edition. John Wiley publication.
6. Structural principles in inorganic compounds. W. E. Addison.
7. Theoretical principles of Inorganic Chemistry – G. S. Manku.
8. Theoretical Inorganic Chemistry by Day and Selbine.
9. Co-ordination compounds. SFA Kettle.
10. Essentials of Nuclear Chemistry by H. J. Arnikar.
11. Nuclear Chemistry by M. N. Sastri.
12. Organometallic Chemistry by R. C. Mahrotra, A. Sing, Wiley Eastern Ltd.New Delhi.
13. Inorganic Chemistry by A. G. Sharpe, Addision – Wisley Longman – Inc.

14. Principles of Inorganic Chemistry by Puri, Sharma and Kalia, Vallabh Publication. Pitampur Delhi.
15. Text book of Inorganic Chemistry by K. N. Upadhyaya Vikas Publishing House – New Delhi.
16. Inorganic Chemistry 3rd Edn G. L. Miessler and D.A. Tarr, pearson publication.
17. Co-ordination compounds by Baselo and Pearson.
18. UGC Inorganic chemistry by H.C. Khera, Pragati prakashan
19. UGC Advanced Inorganic Chemistry by Agarwal and Keemtilal, Pragati Prakashan

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B.Sc. Part III (CBCS) SEMESTER-V
Paper No. DSE-E6 Chemistry Paper No. X
(Organic Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected learning Outcomes:

Name of the topic	Expected Learning Outcome
1. Introduction to Spectroscopy	Understanding of energy associated with electromagnetic radiation and its use in analytical technique.
2.UV-Vis Spectroscopy	Knowledge of chromophore, auxochrome and calculation of $\lambda_{max.}$.
3. IR Spectroscopy	Knowledge of vibrational transitions, regions of IR spectrum, functional group recognition.
4.NMR Spectroscopy	Understanding of magnetic-non magnetic nuclei, shielding-deshielding, chemical shift, splitting pattern
5. Mass spectroscopy.	Knowledge of molecular ion, fragmentation pattern and different types of ions produced.
6. Combined Problems based on UV-Vis, IR, NMR and Mass Spectral data	Student will predict the structure of organic compound with the help of provided spectral data.

Unit 1. Introduction to Spectroscopy **[03]**

1.1 Meaning of spectroscopy.

1.2 Nature of electromagnetic radiation: wavelength, frequency, energy, amplitude, wave number and their relationship.

1.3 Different units of measurement of wavelength and frequency.

1.4 Different regions of electromagnetic radiations.

1.5 Interaction of radiation with matter: absorption, emission, fluorescence and scattering.

1.6 Types of spectroscopy and advantages of spectroscopic methods.

1.7 Energy types and energy levels of atoms and molecules.

Unit 2. UV-Vis Spectroscopy **[05]**

2.1 Introduction.

2.2 Beer-Lambert's law, absorption of UV radiation by organic molecules leading to different excitations.

2.3 Terms used in UV Spectroscopy: Chromophore, Auxochrome, Bathochromic shift, hypsochromic shift, hyperchromic and hypochromic effect.

2.4 Modes of electromagnetic transitions.

2.5 Effect of conjugation on position of UV band.

2.6 Calculation of λ_{max} by Woodward and Fischer rules for dienes and enones.

2.7 Colour and visible spectrum.

2.8 Applications of UV Spectroscopy.

Unit 3. IR Spectroscopy **[06]**

3.1 Introduction.

3.2 Principles of IR Spectroscopy.

3.3 Instrumentation, schematic diagram.

3.4 Fundamental modes of vibrations, types and calculation.

3.5 Conditions for absorption of IR radiations.

3.6 Regions of IR spectrum, fundamental group region, finger print region.

3.7 Hook's Law for Calculation of vibrational frequency.

3.8 Factors affecting IR absorption frequency.

3.9 Characteristic of IR absorption of following functional groups a) alkanes, alkenes, alkynes b) alcohol and phenols c) ethers d) carbonyl compounds e) amines f) nitro compounds and g) aromatic compounds.

Unit 4. NMR Spectroscopy **[09]**

4.1 Introduction.

4.2 Principles of PMR Spectroscopy.

4.3 NMR- Instrumentation, Schematic diagram.

4.4 Magnetic and nonmagnetic nuclei.

4.5 Chemical shift: definition, measurement, calculation, Factors affecting Chemical shift.

4.6 Shielding & deshielding.

4.7 Peak Integration.

4.8 Merits of TMS as PMR reference compound.

4.9 Coupling Constant.

4.10 Types of Coupling Constant.

4.11 Spin-spin splitting (n+1 rule).

4.12 Applications.

Unit 5. Mass Spectroscopy. **[08]**

5.1 Introduction.

5.2 Principles of mass spectroscopy.

5.3 Mass spectrometer - schematic diagram.

5.4 Types of ions produced during fragmentation.

5.5 Nitrogen rul

5.6 Fragmentation patterns of: alkanes, alkenes, aromatic hydrocarbons, alcohols, phenols, amines and carbonyl compounds.

5.7 McLaffrety rearrangement.

5.8 Applications.

Unit 6. Combined Problems based on UV, IR, NMR and Mass Spectral data. **[07]**

Reference Books: (Use recent editions)

1. Absorption Spectroscopy of Organic Molecules by V.M.Parikh.
2. Spectroscopy of Organic compounds by P. S. Kalsi.
3. Elementary Organic Absorption Spectroscopy by Y. R. Sharma.
4. Instrumental Methods of Analysis (7^{th} edition) by Willard, Merritt, Dean, Settle.
5. Spectroscopy by G. R. Chatwal and S. K. Anand
6. Spectroscopy by Pavia, lampman, Kriz,Vyvyan
7. Organic Spectroscopy (2^{nd} edition) by JagMohan
8. Organic Spectroscopy (3^{rd} edition) by William Kemp
9. Instrumental Methods of Chemical Analysis by H. Kaur

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B.Sc.-III (CBCS) SEMESTER V
Paper No. DSE- E7 Chemistry Paper No. XI
(Physical Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected learning Outcomes:

Name of the Topics	Expected Learning Outcome
1. Elementary quantum mechanics	Learning and understanding quantum Chemistry, Heisenberg's uncertainty principle, concept of energy operators (Hamiltonian), learning of Schrodinger wave equation. Physical interpretation of the ψ and ψ^2. Particle in a one dimensional box
2. Spectroscopy	Knowledge about spectroscopy, Electromagnetic spectrum, Energy level diagram, Study of rotational spectra of diatomic molecules: Rigid rotor model, Microwave oven, vibrational spectra of diatomic molecules, simple Harmonic oscillator model, Raman spectra: Concept of polarizability, pure rotational and pure Vibrational Raman spectra of diatomic molecules, related knowledge will be gained by the students.
3. Photochemistry	Learning and understanding photochemical laws, reactions and various photochemical phenomena.
4. Solution	Learning the various types of solutions, relations vapour pressure, temperature relations.
5. Electromotive force	Learning and understanding the knowledge of emf measurements, types of electrodes, different types of cells, various applications of emf measurements.

Unit 1. Elementary quantum mechanics **[08]**

1.1 Introduction.

1.2 Drawbacks of classical mechanics, Black body radiation, Photoelectric effect, Compton effect, Duel nature of matter and energy: De Broglie hypothesis.

1.3 The Heisenberg's uncertainty principle.

1.4 Concept of energy operators (Hamiltonian).

1.5 Derivation of Schrodinger wave equation, well behaved function.

1.6 Physical interpretation of the ψ and ψ^2.

1.7 Particle in a one dimensional box.

1.8 Numerical problems.

Unit 2. Spectroscopy **[08]**

2.1 Introduction.

2.2 Electromagnetic radiation.

2.3 Interaction of radiation with matter, Electromagnetic spectrum, Energy level diagram.

2.4 Rotational spectra of diatomic molecules: Rigid rotor model, moment of inertia, energy levels of rigid rotor, selection rules, Intensity of spectral lines, determination of bond length, isotope effect, Microwave oven

2.5 Vibrational spectra of diatomic molecules: Simple Harmonic oscillator model, Vibrational energies of diatomic molecules, Determination of force constant, overtones.

2.6 Raman spectra: Concept of polarizability, pure rotational and pure Vibrational Raman spectra of diatomic molecules, selection rules.

2.7 Comparative study of IR and Raman spectra, rule of mutual exclusion- CO_2 molecule.

2.8 Numerical problems.

Unit 3. Photochemistry **[06]**

3.1 Introduction, Difference between thermal and photochemical processes.

3.2 Laws of photochemistry: i) Grotthus - Draper law ii) Lambert law iii) Lambert – Beer's law (with derivation) iv) Stark-Einstein law.

3.3 Quantum yield, Reasons for high and low quantum yield.

3.4 Factors affecting Quantum yield.

3.5 Photosensitized reactions – Dissociation of H_2, Photosynthesis.

3.6 Photodimerisation of anthracene, decomposition of HI and HBr.

3.7 Jablonski diagram depicting various processes occurring in the excited state: Qualitative description of fluorescence and phosphorescence.

3.8 Chemiluminescence, Electroluminescence and Bioluminescence.

3.9 Numerical problems.

Unit 4. Solutions **[06]**

4.1 Introduction.

4.2 Ideal solutions, Raoult's law, Vapour pressure of ideal and non ideal solutions of miscible liquids.

4.3 Composition of liquid and vapour, vapour pressure and boiling point diagrams of miscible liquids. Distillation of miscible liquid pairs.

Type I : Systems with intermediate total vapour pressure (i.e. System in which b.p. increases regularly – Zeotropic).

Type II : Systems with a maximum in the total vapour pressure (i.e. System with a b.p. minimum – Azeotropic).

Type III : Systems with a minimum in the total vapour pressure (i.e. System with a b.p. Maximum – Azeotropic).

4.4 Solubility of partially miscible liquids.

i. Maximum solution temperature type: Phenol – water system.

ii. Minimum solution temperature type: Triethyl amine – water system.

iii. Maximum and minimum solution temperature type: Nicotine – water system.

Distillation of partially miscible liquid pairs.

4.5 Vapour pressure and distillation of immiscible liquids, steam distillation.

Unit 5. Electromotive force **[10]**

(Convention: Reduction potentials to be used)

5.1 Introduction

5.2 Thermodynamics of electrode potentials, Nernst equation for electrode and cell potentials in terms of activities.

5.3 E.M.F. series.

5.4 Types of electrodes: Description in terms of construction, representation, half cell reaction and emf equation for

i) Metal – metal ion electrode.

ii) Amalgam electrode.

iii) Metal – insoluble salt electrode.

iv) Gas – electrode.

v) Oxidation – Reduction electrode.

5.5 Reversible and Irreversible cells.

i. Chemical cells without transference.

ii. Concentration cells with and without transference.

iii. Liquid – Liquid junction potential: Origin, elimination and determination.

5.6 Equilibrium constant from cell emf, Determination of the thermodynamic parameters such as ΔG, ΔH and ΔS.

5.7 Applications of emf measurements :

i. Determination of pH of solution using Hydrogen electrode.

ii. Solubility and solubility product of sparingly soluble salts (based on concentration cells).

5.8 Numerical problems.

Reference Books:

1. Physical Chemistry by G. M. Barrow, International student Edition,Mc Graw Hill.
2. University General Chemistry by C.N.R. Rao, Macmillan.
3. Physical Chemistry by, R. A. Alberty, Wiley Eastern Ltd.
4. The Elements of Physical Chemistry by P. W. Atkins, Oxford.
5. Principles of Physical Chemistry by S. H. Maron, C. H. Prutton, 4thE dition.

6. Nuclear and Radiochemistry by Friedlander, Kennedy and Miller, John Wiley and Sons. Wiley International edition.
7. Essentials of Nuclear Chemistry by H. J. Arnikar, 4th edition. Wiley Eastern.
8. Principles of Physical Chemistry by Puri, Sharma, Pathania,Shobhanlal Naginchand and Company, Jalandar.
9. Instrumental methods of chemical analysis by Chatwal and Anand,5th Edition, Himalaya Publication.
10. Fundamentals of molecular spectroscopy by C. N. Banwell – Tata Mc Graw-Hill.
11. Quantum Chemistry including molecular spectroscopy by B. K. Sen,Tata Mc Graw -Hill.
12. Text Book of Physical Chemistry by S. Glasstone, Macmillan India Ltd.
13. Elements of Physical Chemistry by D. Lewis and S. Glasstone (Macmillan).
14. Principles of Physical Chemistry by Maron and Lando (Amerind).
15. Electrochemistry by S. Glasstone.
16. Physical Chemistry by W. J. Moore.
17. Basic Chemical Thermodynamics by V. V. Rao (Macmillan).
18. Essential of Physical Chemistry, Bahl and Tuli (S. Chand).
19. Text Book of Physical Chemistry, Soni and Dharmarha.
20. Advanced Physical Chemistry Gurdeep Raj GOEL Publishing House, 36th Edition

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B.Sc. Part III (CBCS) SEMESTER-V
Paper No. DSE-E8 Chemistry paper No. XII
(Analytical Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected learning Outcomes:

Name of the topic	Expected Learning Outcome
1.Theory of Gravimetric Analysis	Learning and understanding the techniques of gravimetric analysis.
2.Flame Photometry	Knowledge of instrumental analysis of alkali and alkaline earth elements.
3.Colorimetry and Spectrophotometry	Understanding, working and applications of optical methods as an analytical tool.
4.Potentiometric titrations	Understanding theory and applications of potentiometric titrations.
5.Chromatographic techniques and Quality control	Understanding the basics of ion exchange and column adsorption chromatography, Quality control practices in analytical industries / laboratories.

Unit 1. Theory of Gravimetric Analysis **[08]**

1.1 Introduction.

1.2 Gravimetric analysis by precipitation: nucleation, crystal growth, digestion/ageing, filtration, drying, ignition, weighing.

1.3 Optimum conditions for good precipitation.

1.4 Physical nature of precipitate.

1.5 Purity of precipitate: co-precipitation, post-precipitation.

1.6 Organic precipitants and their applications.

Unit 2. Flame Photometry **[06]**

2.1 Introduction.

2.2 General principles of flame photometry.

2.3 Instrumentation: Block diagram, Burners (Premix and Lundergraph burners), mirror, slits, filters, detector (Photomultiplier tube).

2.4 Effect of solvent in flame photometry.

2.5 Experimental procedure of analysis (Standard addition and internal standard).

2.6 Interferences and Factors that influence the intensity of emitted radiation in a flame photometer.

2.7 Applications of flame photometry in real sample analysis.

2.8 Limitations of flame photometry.

Unit 3. Colorimetry and Spectrophotometry **[06]**

3.1 Theory of colorimetry and spectrophotometry.

3.2 Lambert Beer's law, deviation from Beer's law.

3.3 Terms used in colorimetry and spectrophotometry.

3.4 Classification of methods of 'colour' measurement or comparison.

3.5 Photoelectric colorimeter method–Single beam photo-electric colorimeter.

3.6 Spectrophotometer method–Single beam direct reading spectrophotometer.

3.7 Determination of unknown concentration by using concentration-absorbance plot.

3.8 Applications of colorimetry and spectrophotometry.

Unit 4. Potentiometric titrations **[07]**

4.1 Introduction.

4.2 Determination of pH.

4.3 Study of Quinhydrone and Glass electrodes and their use in determination of pH.

4.4 Potentiometric titrations: Classical and analytical methods for locating end points.

4.5 Acids- Bases titration with suitable example.

4.6 Redox titration with suitable example.

4.7 Precipitation titration with suitable example.

4.8 Basic circuit of direct reading potentiometer.

4.9 Advantages of potentiometric titrations.

Unit 5. Chromatographic techniques and Quality control **[10]**

5.1 Introduction, classification.

5.2 **Column chromatography:** Introduction, types, Principle of adsorption column chromatography, solvent system, stationary phases, Methodology-Column packing, applications of sample, development, detection methods, recovery of components, Applications.

5.3 **Ion exchange chromatography:** Introduction, Principle, Types and properties of ion exchangers, Methodology-Column packing, application of sample, elution, detection/analysis, Applications.

5.4 **Concepts in Quality control**

i. Introduction and Concept of quality.
ii. Quality control.
iii. Quality assurance.
iv. ISO series.
v. Good laboratory practices.

References

1. Text Book of Quantitative inorganic analysis – A.I.Vogel.
2. Instrumental methods of chemical analysis –Willard, Merit & Dean.
3. Instrumentals methods of chemical analysis – Chatwal & Anand.
4. Vogel's textbook of qualitative inorganic analysis – Bassett, Denny etc.
5. Textbook of qualitative inorganic analysis – Kolthoff and Sandel.
6. Fundamentals of analytical chemistry – Skoog and West.
7. Basic concepts of analytical chemistry – S.M. Khopkar.
8. Text book of qualitative chemical analysis – Vogel.
9. Handbook of quality assurance for the analytical chemistry laboratory – James P.Dux,Van Nostrand Reinhold,New York 1986.
10. Instrumental methods of chemical analysis – H.Kaur.
11. A text book of Quantitative chemical analysis Vogel's by J.Mendham, R. C. Denney.
12. Quantitative Chemical Analysis – Daniel C. Harris.
13. Applying ISO 9000 Quality management system, International trade centre publishing genera, Indian edition printed by D. L. Shaha Trust.

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B.Sc. Part III (CBCS) SEMESTER -VI
Paper No. DSE-F5, Chemistry Paper No. –XIII
(Inorganic Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected Learning Outcome

Name of the topic	Expected Learning Outcome
1.Coordination Chemistry	The topic focused on the mechanism of the reactions involved in inorganic complexes of transition metals. The students can understand the thermodynamic and kinetic aspects of metal complexes.
2.Nuclear Chemistry	The generation of nuclear power with the help of nuclear reactions is highlighted. Role of radio isotopes in medicinal, industrial and Archaeology fields is explained.
3.Chemistry of f-block Elements	The characteristics, properties and separation of lanthanides and Actinides are discussed. Synthesis and IUPAC Nomenclature of trans uranic elements (TU) explained.
4.Iron and Steel	The techniques involve in ore dressing and extraction of cast iron from its ore are discussed.
5.Bio –inorganic Chemistry	Role of various metals and non metals in our health are discussed.

Unit 1. Coordination Chemistry **[12]**

A. Inorganic Reaction mechanism

1.1 Introduction.

1.2 Classification of Mechanism: Association, dissociation, interchange and the rate determining steps.

1.3 S_N^1 and S_N^2 reactions for inert and labile complexes.

1.4 Mechanism of substitution in cobalt (III) octahedral complexes.

1.5 Trans effect and its theories.

1.6 Applications of trans effect in synthesis of Pt (II) complexes.

B. Thermodynamic and Kinetic aspects of metal complexes.

1.7 Introduction.

1.8 Thermodynamic stability.

1.9 Kinetic Stability.

1.10 Relation between thermodynamic and kinetic stability.

1.11 Stepwise stability constant.

1.12 Factor affecting the stability of complexes.

1.13 Determination of Stability constant by Job variation, Mole ratio and Slope ratio method.

Unit 2. Nuclear Chemistry **[05]**

2.1 Nuclear reactions and energetic of nuclear reactions.

2.2 Types of nuclear reactions

i. Artificial transmutation.

ii. Artificial radioactivity.

iii. Nuclear fission and its application in heavy water nuclear reactor.

iv. Nuclear fusion.

2.3 Use of Thorium, Uranium and Plutonium in atomic energy

2.4 Applications of radio-isotopes as tracers.

i. Chemical investigation – Esterification.

ii. Structural determination – Phosphorus pentachloride.

iii. Analytical Chemistry – Isotopic dilution method for determination of volume of blood.

iv. Age determination – Dating by C^{14}.

Unit 3. Chemistry of f- Block Elements **[09]**

A] Lanthanides

3.1 Introduction.

3.2 Occurrence.

3.3 Electronic Configuration.

3.4 Oxidation State.

3.5 Lantahnide contraction.

3.6 Separation of Lanthanides by Ion exchange method.

B] Actinides

3.7 Position in periodic table.

3.8 Electronic configuration.

3.9 General methods of preparation of transuranic elements.

i. Neutron capture – followed by β decay.

ii. Accelerated projectile bombardment.

iii. Heavy ion bombardment.

3.10 IUPAC nomenclature of the super heavy elements with atomic number (Z) greater than 100.

Unit 4. Iron and Steel. **[07]**

4.1 Occurrence and ores of iron.

4.2 Definition of the Terms- Ore , Mineral, Slag, Flux, Gangue , Matrix, Calcinations, Reduction, Roasting, Smelting and Leaching.

4.3 Extraction of iron by Blast furnace.

4.4 Steel: Definition and types.

4.5 Conversion of cast iron into steel by

i. Bessemer process.

ii. L.D. process.

4.6 Heat treatment on steel.

Unit 5. Bio-inorganic Chemistry. **[05]**

5.1 Introduction.

5.2 Essential and trace elements in biological process.

5.3 Metalloporphyrins with special reference to hemoglobin and myoglobin.

5.4 Biological role of alkali and alkaline earth metal ions with special referenc to Na^+, K^+ and Ca^{2+}

Reference Books: (Use recent editions)

1. Concise Inorganic Chemistry (ELBS, 5th Edition) – J. D. Lee.

2. Inorganic Chemistry (ELBS, 3rd Edition) D. F. Shriver, P. W. Atkins, C. H.Lang Ford, Oxford University Press, 2nd Edition.
3. Basic Inorganic Chemistry : Cotton and Wilkinson.
4. Advanced Inorganic Chemistry (4^{th} Edn.) Cotton and Wilkinson.
5. Concepts and Models of Inorganic Chemistry : Douglas and Mc. Daniel. 3^{rd} Edition. John Wiley publication.
6. Structural principles in inorganic compounds. W. E. Addison.
7. Theoretical principles of Inorganic Chemistry – G. S. Manku.
8. Theoretical Inorganic Chemistry by Day and Selbine.
9. Co-ordination compounds. SFA Kettle.
10. Essentials of Nuclear Chemistry by H. J. Arnikar.
11. Nuclear Chemistry by M. N. Sastri
12. Organometallic Chemistry by R. C. Mahrotra A. Sing, Wiley Eastern Ltd.New Delhi.
13. Inorganic Chemistry by A. G. Sharpe, Addision – Wisley Longman – Inc.
14. Principles of Inorganic Chemistry by Puri, Sharma and Kalia, Vallabh Publication. Pitampur Delhi.
15. Text book of Inorganic Chemistry by K. N. Upadhyaya Vikas Publishing House – New Delhi.
16. Inorganic Chemistry 3rd edn G. L. Miessler and D.A. Tarr, pearson publication
17. Co-ordination compounds by Baselo and Pearson.
18. UGC Inorganic chemistry by H.C. Khera, Pragati prakashan
19. UGC Advance Inorganic Chemistry by Agarwal and Keemtilal, Pragati Prakashan

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SHIVAJI UNIVERSITY, KOLHAPUR

B.O.S. in Chemistry

B.Sc. Part – III

Semester CBCS Syllabus

To be implemented from June – 2020

General Structure

Theory Examination:

There will be four theory papers of 40 marks each for each semester. Their titles and distribution of marks are as follows.

Semester V : Papers IX-DSE-E5, X-DSE-E6, XI- DSE-E7, XII- DSE-E8,

Semester VI: Papers XIII- DSE-F5, XIV-DSE-F6, XV-DSE-F7 and XVI- DSE-F8

Paper – **IX** DSE-E5, **& XIII** DSE-F5: Inorganic Chemistry – 40 marks

Paper – **X** DSE-E6 **& XIV** DSE-F6**:** Organic Chemistry – 40 marks

Paper – **XI** DSE-E7 **& XV** DSE-F7**:** Physical Chemistry – 40 marks

Paper – **XII** DSE-E8 **&XVI** DSE-F8**:** Analytical and Industrial Chemistry – 40 marks

The duration of each theory paper for examination will be of 2 hours

Internal examination (Oral/Seminar/test/home assignment) will be conducted for 10 marks for each paper.

Practical Examination:

Practical examination will be of 200 marks. The distribution of marks will be as follows:

1. Physical Section : 60 marks
2. Inorganic Section : 65 marks
3. Organic Section : 60 marks
4. Project : 15 marks

Total: 200 marks

The duration of practical examination will be of three days – six and half hours per day.

B.Sc. Part III (CBCS) SEMESTER-VI
Paper No. DSE-F6 Chemistry Paper No. XIV
(Organic Chemistry)
(Theory Credits: 02, 30 hours, 38 Lectures)

Expected learning Outcomes:

Name of the topic	Expected Learning Outcome
1. Reagents and Reactions in Organic Synthesis	Knowledge of reagents used in organic transformations and various reactions used in organic synthesis.
2.Retrosynthesis	Knowing basic terms used in retrosynthetic analysis, retrosynthesis of some organic compounds.
3.Electrophilic addition to >C=C< and −C≡C− bond	Student will learn addition reaction across >C=C< bond w.r.t. hydrohalogenation, hydration hydroxylation, ozonolysis and addition of halogen, halogen acid, hydrogen,water, etc. across −C≡C−bond.
4.Natural Products	Knowledge of terpenoids and alkaloids w.r.t. occurrence, isolation, characteristics and classification. Analytical and synthetic evidences of Citral and Nicotine.
5.Pharmaceuticals	Understanding classification of drugs, Qualities of ideal drug. Synthesis and uses of some representative drugs and Drug action of sulpha drugs.

Unit 1. Reagents and Reactions in Organic Synthesis **[10]**

A] Reagents

Preparation and Applications of following reagents.

1. Lithium aluminium hydride $LiAlH_4$.
2. Raney Nickel.
3. Osmium tetraoxide.

4. Selenium dioxide (SeO_2).
5. Dicyclohexyl Carbodiimide (DCC).
6. Diazomethane.

B] Reactions

Statement, General Reaction, Mechanism and Synthetic applications

1. Diels -Alder reaction.
2. Meerwein –Pondorff-Verley reduction.
3. Hofmann rearrangement.
4. Wittig reaction.
5. Wagner- Meerwein rearrangement.
6. Baeyer Villiger oxidation.
7. Problem based on above reactions.

Unit 2. Retrosynthesis **[06]**

2.1 Introduction.

2.2 Recapitulation of basics of reaction mechanism and reagents.

2.3 Terms used- Target molecule (TM), Disconnection, Synthons, Synthetic equivalence, Functional group interconversion (FGI), one group disconnection (w. r. t. suitable examples).

2.4 Retrosynthetic analysis and synthesis of target molecules: Cinnamaldehyde, Cyclohexene, para methoxy acetophenone, Methyl-3-phenyl propionate, α,α-dimethyl benzyl alcohol, Paracetamol.

Unit 3. Electrophilic addition to >C=C< and −C≡C− bonds **[08]**

A. Addition to Carbon-Carbon double (>C=C<) bond:

3.1 Introduction.

3.2 Examples of addition reactions.

3.3 Mechanism of electrophilic addition to >C=C< bond, orientation & reactivity,

i. Hydrohalogenation.
ii. Anti-Markovnikoff's addition (peroxide effect).
iii. Rearrangements (support for formation of carbocation).

iv. Addition of halogens.

v. Addition of water.

vi. Addition of hypohalous acids (HO-X).

vii. Hydroxylation (formation of 1,2-diols).

viii. Hydroboration-oxidation (formation of alcohol).

ix. Hydrogenation (formation of alkane).

x. Ozonolysis (formation of aldehydes & ketones).

B. Addition to Carbon-Carbon triple (−C≡C−) bond:

3.4 Introduction.

3.5 Examples of addition reactions.

3.6 Mechanism of electrophilic addition to−C≡C−bond.

i. Addition of halogens.

ii. Addition of halogen acids.

iii. Addition of hydrogen.

iv. Addition of water.

v. Formation of metal acetylides.

Reference books:

1. Organic Reactions and Their Mechanisms P. S. Kalsi 3rd Revised edition.

2. Advanced organic Chemistry by B.S. Bahl & Arun Bhal (Reprint in 1997)

3. Organic Chemistry by Morrison and Boyd 6thedition.

Unit 4. Natural Products **[08]**

A] Terpenoids:

4.1 Introduction, Occurrence, Isolation, General Characteristic, Classification.

4.2 General Methods for structure determinations.

4.3 Isoprene rule.

4.4 Analytical evidences and synthesis of Citral.

B] Alkaloids:

4.5 Introduction, Occurrence, Isolation, Classification, Properties.

4.6 General Methods for structure determination.

4.7 Analytical evidences and synthesis of Nicotine.

Unit 5. Pharmaceuticals **[06]**

5.1 Introductio.

5.2 Classification.

5.3 Qualities of ideal drug.

5.4 Synthesis and uses of ethambutal, phenobarbitone, isoniazide, benzocaine, Chloramphenicol,paludrine.

5.5 Drug action of sulpha drugs.

Reference books:1

1. Advanced Organic Chemistry : Reactions, Mechanisms and structure by – Jerry March.
2. Reagents for Organic Synthesis by Louis F. Fieser , Mary Fieser -1967.
3. A Text book of Practical Organic Chemistry including Qualitative Organic Analysis by A. I.Vogel.
4. Mechanism and Structure in Organic Chemistry. April,1963 By Edwin S.Gould.
5. A text book of Organic Chemistry by Arun Bahl, B.S.Bhal Eighteenth Revised edition 2006.
6. A guidebook to mechanism in Organic Chemistry sixth Edition by Peter Syke.
7. Organic Synthesis: The Disconnection Approach by Stuart Warren.
8. Organic Synthesis Through Disconnection Approach by P. S. Kalsi
9. Fundamentals of Organic Synthesis the Retrosynthetic Analysis by Ratan Kumar Kar
10. Organic Reactions and Their Mechanisms P. S. Kalsi 3rd Revised edition.
11. Advanced organic Chemistry by B.S. Bahl & Arun Bhal (Reprint in 1997)
12. Organic Chemistry by Morrison and Boyd 6thedition.
13. Organic Chemistry Vol II Stereochemistry and the Chemistry of Natural Products (5th ed) by I. L.Finar.
14. Organic Chemistry Natural Products Vol I, by O. P.Agrawal
15. Industrial Chemistry-B.K. Sharma, Goyal publishing house,Mirut
16. Shreeves chemical process industries 5th Edition, G.T. Oustin, McGrawHill
17. Riegel`s hand book of Industrial chemistry, 9th Edition, Jems A.Kent
18. Industrial chemistry –R.K. Das, 2nd Edition,1976.

19. Synthetic drugs by M.S.Yadav,Campus book international.

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B.Sc. III (CBCS) SEMESTER-VI
Paper No. DSE-F 7 Chemistry Paper No. XV
(Physical Chemistry)
(Theory Credits: 02, 30 hours, 37 Lectures)

Expected Program Outcomes:

Name of the Topics	Expected Learning Outcome
1. Phase equilibria	Learning and understanding of phase rule, learning of One component, Two component and Three component systems phase diagrams with suitable examples.
2. Thermodynamics	Knowledge about basic concept of Thermodyanamics, free energy, Gibbs-Helmholtz equation and its applications, problem related with it.
3. Solid state chemistry	Learning and understanding Space lattice, lattice sites, Lattice planes, Unit cell. Laws of crystallography, Weiss indices and Miller indices, Cubic lattices and types of cubic lattice, planes or faces of a simple cubic system, Diffraction of X-rays, Derivation of Bragg's equation. Determination of crystal structure by Bragg's method. crystal structure of NaCl and KCl on the basis of Bragg's equation.
4. Chemical kinetics	Learning of kinetics, Simultaneous reactions such as i)opposing reaction ii)side reaction iii)consecutive reactions: iv) chain reaction v) explosive reaction
5. Distribution law	Learning and understanding the knowledge of distribution law, its modifications, applications of distribution laws, process of extraction, determination of solubility, distribution indicators, molecular weights.

Unit 1. Phase Equilibria **[07]**

1.1 Introduction.

1.2 Gibbs phase rule : Phase rule equation and explanation of terms involved in the equation.

1.3 Phase diagram, true and metastable equilibria.

1.4 One component systems:

i. Water system.

ii. Sulphur system with explanation for polymorphism.

1.5 Two component systems:

i. Eutectic system: (Ag – Pb system); Desilverisation of lead.

ii. Freezing mixture: (KI –H_2O system).

iii. Formation of compound with congruent melting point ($FeCl_3$ – H_2O).

1.6 Three component solid-liquid system:

i. Development of triangular phase diagram: (Acetic acid – Chloroform –water system).

Unit 2. Thermodynamics **[09]**

2.1 Introduction.

2.2 Free energy: Gibbs function (G) and Helmholtz function (A), Criteria for thermodynamic equilibrium and spontaneity.

2.3 Relation between ΔG and ΔH : Gibbs-Helmholtz equation.

2.4 Phase equilibria : Clapeyron – Clausius equation and its applications.

2.5 Thermodynamic derivation of law of mass action, Van't – Hoff isotherm and isochore.

2.6 Fugacity and activity concepts.

2.7 Partial molar quantities, Partial molar volume, Concept of chemical potential, Gibbs-Duhem equation.

2.8 Numerical problems.

Unit 3. The Solid State **[09]**

3.1 Introduction: Space lattice, lattice sites, lattice planes, unit cell.

3.2 Laws of crystallography:

i. Law of constancy of interfacial angles

ii. Law of rational indices

iii. Law of crystal symmetry.

3.3 Weiss indices and Miller indices.

3.4 Cubic lattice and types of cubic lattice, planes or faces of a simple cubic system, spacing of lattice planes.

3.5 Diffraction of X-rays, Derivation of Bragg's equation.

3.6 Determination of crystal structure by Bragg's method.

3.7 Determination of crystal structure of NaCl and KCl on the basis of Bragg's equation.

3.8 Numerical problems.

Unit 4. Chemical Kinetics **[06]**

4.1 Introduction.

4.2 Simultaneous reactions such as

i. Opposing reaction: (Derivation of rate equation for first order opposed by first order expected).

ii. Side reaction.

iii. Consecutive reactions.

iv. Chain reaction.

v. Explosive reaction (Derivation of rate equation and Numerical problems are not expected).

Unit 5. Distribution law **[06]**

5.1 Introduction, solute, solvent and solution, miscible and immiscible liquids.

5.2 Nernst distribution law and its limitations.

5.3 Modification of distribution law with respect to change in molecular state of solute (association and dissociation of solute in one of the solvent).

5.4 Applications of the distribution law

i. Process of extraction (derivation expected).

ii. Determination of solubility of solute in particular solvent.

iii. distribution indicators.

iv. determination of molecular weight of solute in different solvents.

5.5 Numerical problems.

Reference Books:

1. Physical Chemistry by G. M. Barrow, International student Edition,Mc Graw Hill.
2. University General Chemistry by C.N.R. Rao, Macmillan.
3. Physical Chemistry by, R. A. Alberty, Wiley Eastern Ltd.
4. The Elements of Physical Chemistry by P. W. Atkins, Oxford.
5. Principles of Physical Chemistry by S. H. Maron, C. H. Prutton, 4thE dition.
6. Nuclear and Radiochemistry by Friedlander, Kennedy and Miller, John Wiley and Sons. Wiley International edition.
7. Essentials of Nuclear Chemistry by H. J. Arnikar, 4th edition. Wiley Eastern.
8. Principles of Physical Chemistry by Puri, Sharma, Pathania,Shobhanlal Naginchand and Company, Jalandar.
9. Instrumental methods of chemical analysis by Chatwal and Anand,5th Edition, Himalaya Publication.
10. Fundamentals of molecular spectroscopy by C. N. Banwell – Tata Mc Graw-Hill.
11. Quantum Chemistry including molecular spectroscopy by B. K. Sen,Tata Mc Graw -Hill.
12. Text Book of Physical Chemistry by S. Glasstone, Macmillan India Ltd.
13. Elements of Physical Chemistry by D. Lewis and S. Glasstone (Macmillan).
14. Principles of Physical Chemistry by Maron and Lando (Amerind).
15. Electrochemistry by S. Glasstone.
16. Physical Chemistry by W. J. Moore.
17. Basic Chemical Thermodynamics by V. V. Rao (Macmillan).
18. Essential of Physical Chemistry, Bahl and Tuli (S. Chand).
19. Text Book of Physical Chemistry, Soni and Dharmarha.
20. Advanced Physical Chemistry Gurdeep Raj GOEL Publishing House, 36th Edition

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B. Sc. Part III (CBCS) SEMESTER-VI
Paper No. DSE-F8 Chemistry Paper No. XVI
(Industrial Chemistry)
(Theory Credits: 02, 30 hours, 38 lectures)

Expected learning Outcomes:

Name of the topic	Expected Learning Outcome
1.Sugar Industry	Learning and understanding the whole process of manufacture of sugar and byproducts of sugar industry.
2.Manufacture of industrial heavy chemicals	Learning and understanding of physico-chemical principles of production of ammonia, sulfuric acid, nitric acid and sodium carbonate along with its manufacturing plant.
3.Synthetic polymers	Understanding and learning the classification, synthesis and applications of various polymers.
4.Petroleum industry and eco-friendly fuels	Understanding the petroleum Industry, fuels and need of use of ecofriendly fuels.
5.Nanotechnology	Understanding and learning of nanotechnology including classification, optical properties, synthesis routes, characterization techniques and applications of nano-materials.

Unit 1. Sugar Industry **[07]**

1.1 Introduction.

1.2 Manufacture of cane sugar in India: Extraction of juice, Clarification, Concentration, crystallization, centrifugation and other details of industrial process.

1.3 Byproducts of sugar industry.

1.4 Manufacture of Ethyl Alcohol from Molasses: by Fermentation.

Unit 2. Manufacture of Industrial Heavy Chemicals **[08]**

2.1 Introduction

2.2 Manufacture of Ammonia (NH_3)

i. Physico-chemical principles.

ii. Manufacture by Haber's process.

2.3 Manufacture of Sulphuric acid (H_2SO_4)

i. Physico-chemical principles.

ii. Manufacture by Contact process.

2.4 Manufacture of Nitric acid (HNO_3)

i. Physico-chemical principles.

ii. Manufacture by Ostwald's process (Ammonia oxidation process).

2.5 Manufacture of Sodium carbonate (Na_2CO_3) (Washing soda).

i. Physico-chemical principles.

ii. Manufacture by Solvay process.

Unit 3. Synthetic Polymers **[08]**

3.1 Introduction.

3.2 Classification.

i. Based on origin.

ii. Based on composition-organic, inorganic polymers.

iii. Based on method of preparation.

iv. Based on general physical properties.

v. Based on structure.

3.3 Addition Polymerization: Free radical addition and ionic addition polymerization.

3.4 Zigler Nata polymerization.

3.5 Methods of preparation and applications of some organic polymers: Polyethylene, polystyrene, polyvinyl chloride, Phenol-formaldehyde resin.

3.6 Conducting organic polymers: Synthesis and properties of Polyaniline, polypyrrol.

3.7 Applications of conducting organic polymers.

Unit 4. Petroleum industry and eco-friendly fuels **[07]**

A] Petroleum industry

Introduction, occurrence, composition of petroleum, resources, processing of petroleum, calorific value of fuel, cracking, octane rating (octane number), cetane

number, flash point, petroleum refineries, applications of petrochemicals, synthetic petroleum, lubricating oils & additives.

B] Fuels

Fuels and eco-friendly fuels: liquid, gaseous fuel (LPG, CNG), fossil fuels, diesel, bio diesel, gasoline, aviation fuels. Use of solar energy for power generation.

Unit 5. Nanotechnology **[08]**

5.1 Introduction of nanotechnology, history, Classification of nanoparticles based on size.

5.2 Optical properties of Nanomaterial's

i. Semiconducting NPs.

ii. Metallic NPs.

5.3 Synthetic Routes of nanomaterials: Top-down and bottom-up approaches.

5.4 Synthesis methods: Sol-gel, precipitation, chemical reduction, chemical vapor deposition, hydrothermal, electrodeposition.

5.5 Characterization of nanomaterials: X-Ray diffractometer, Scanning Electron Microscope, Transmission electron microscope.

5.6 Applications of nanotechnology.

References:

1. Industrial Chemistry-B.K. Sharma
2. Chemical process industries – Shrieve & Brink
3. Industrial chemistry – Kent
4. Industrial chemistry – Rogers
5. Industrial chemistry – R. K. Das
6. Mechanical chemistry – Burger
7. Nanotechnology: Principles and Practices – Sulbha Kulkarni
8. The Petroleum chemicals industry by R. F. Goldstine, e &Fn London
9. Fundamentals of petroleum chemical technology by P Below.
10. Petro Chemicals Volume 1 and 2 ; A Chauvel and Lefevrev ; Gulf Publishing company

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Laboratory Course (Practicals)

N. B. (i) Use of Digital/Analytical/Chainometric/Single pan balance is allowed.

(ii) Use of Scientific calculator is allowed.

(iii) Use of Chart/Text book/Hand book of practical is allowed.

(iv) There will be a project having weightage of 15 marks.

Project should be in the following areas but focused on applications of Chemistry.

a) Society oriented

b) Daily use

c) Industry based

d) Analysis based

The project will be assessed by all the three examiners with equal weightage at the time of practical examinations.

The project may be completed individually or by a group of students not exceeding number three.

One copy of the project should be submitted at the time of examination. After assessment this copy will remain in the department.

INORGANIC CHEMISTRY

I) Gravimetric Estimations (G).

N. B. Any **two** experiments from G1 to G3 and any **two** experiment from G4 & G6.

G1. Gravimetric estimation of iron as ferric oxide (Fe_2O_3) from the given solution containing ferrous ammonium sulphate, copper sulphate and free sulphuric acid.

G2. Gravimetric estimation of zinc as zinc pyrophosphate from the given solution

containing zinc sulphate, ferrous ammonium sulphate and free sulphuric acid.

G3. Gravimetric estimation of barium as barium sulphate($BaSO_4$) from the given solution containing barium chloride, ferric chloride and free hydrochloric acid.

G4. Gravimetric estimation of barium as barium chromate($BaCrO_4$) from the given solution containing barium chloride, ferric chloride and free hydrochloric acid.

G5. Gravimetric estimation of nickel as bis (dimethylglyoximato) nickel (II) from the given solution containing nickel sulphate, ferrous ammonium sulphate and free Sulphuric acid.

G6. Gravimetric estimation of aluminium as aluminium oxinate potassium tris (8-hydroxy quinolato) aluminium (III) from the given solution containing potash alum ,copper sulphate and free sulphuric acid.

[For the gravimetric experiments, stock solution should be given in the range of 10 to 15 cm^3 and asked to dilute to 100 cm^3 (or the stock solution should be given in the range of 20 to 30 cm^3 and asked to dilute to 250 cm^3). Use 50 cm^3 of this diluted solution for estimation.]

II. Inorganic Preparations (P).

N. B. At least **six** preparations from the following with **percentage yield**:

P1. Preparation of potassium trioxalato aluminate (III).

P2. Preparation of Tetra ammine copper (II) chloride.

P3. Preparation of tris(thiourea) copper (I) sulphate.

P4. Preparation of potassium trioxalato ferrate (III).

P5. Preparation of chloropenta-ammine cobalt (III) chloride.

P6. Preparation of ammonium diamminetetrathiocynato chromate (III) (Reineck's salt).

P7. Preparation of Potassium hexa nitro coblatate (III).

P8. Preparation of ammonium trioxalato chromate (III).

P9. Preparation of hexathiourea plumbus (II) nitrate.

A) Percentage Purity

N. B. : Any **two** from the following.

V1. Determination of percentage purity of ferrous ammonium sulpahte.

V2. Determination of percentage purity of tetrammine copper (II) sulphate.

V3. Determination of percentage purity of potassium (trioxalato-aluminate) (III).

B) Analysis of Commercial Sample.

N. B. Any **Three** from the following:

V5. Determination of percentage of Calcium in the given sample of milk powder or lime.

V6. Determination of amount of aluminum in the given solution of potash alum.

V7. Determination of titrable acidity in the given sample of milk or lassi.

V8. Determination of percentage purity of boric acid using supplied sodium hydroxide. (Standard succinic or oxalic acid solution to be prepared to standardise the given sodium hydroxide solution.)

V9. To determine the amount of HCl in given of commercial samples.

C) Ion exchange method.

N. B. Any **two** from the following.

V10. Determination of amount of sodium present in the given solution of common salt using cation exchange resin (By Acid Base titration).

V11. Determination of amount of magnesium in the given solution containing(Mg^{2+} and Zn^{2+}) using anion exchange resin and standard solution of EDTA.

V12. Determination of amount of zinc in the given solution containing (Mg^{2+} andZn^{2+}) using anion exchange resin and standard solution of EDTA.

Reference Books:

1. A text book of quantitative Inorganic Analysis - A. I. Vogel.
2. Text book of Quantitative Inorganic Analysis - Kolthoff and Sandell.
3. Experimental Inorganic Chemistry - Palmer W. G.
4. Advanced Practical Inorganic Chemistry - Adams and Raynor.
5. Manual in Dairy Chemistry - I.C.A.R. Sub-Committee on Diary Education.
6. Chemical methods for environmental analysis - R. Ramesh and M. Anbu.

ORGANIC CHEMISTRY

I) Qualitative analysis

Separation of binary mixture and Identification of **one** component. (At least 08 mixtures)

Nature 1) Solid – Solid : 4 mixtures
2) Solid – Liquid : 2 mixtures
3) Liquid – Liquid : 2 mixtures

1) Solid – Solid Mixtures:

One mixture from each the following types should be given:

i) Acid+Phenol ii) Acid + Base
iii) Acid+Neutral iv) Phenol +Base
v) Phenol+Neutral vi) Base +Neutral

2) Solid – Liquid Mixtures

Mixture of type Neutral + Neutral or Acid + Neutral should be given.

3) Liquid – Liquid Mixtures

Mixture of type Neutral + Neutral or Base + Neutral should be

Given. Following compounds should be used for preparation of mixtures

i) Acids: Benzoic acid, Phthalic acid, Salicylic acid, Cinnamic acid, Aspirin, Oxalic acid.

ii) Phenols: α-naphthol, β-naphthol.

iii) Bases:o-nitroaniline, m-nitroaniline, p-nitroaniline, aniline, o-toluidine and N, N-dimethylaniline.

iv) Neutrals: Anthracene, acetanilide, m-dintrobenzene, chloroform, carbon tetrachloride, acetone, nitrobenzene, ethyl acetate, ethyl benzoate, bromobenzene, urea and thiourea.

NB :

1. For Solid-Liquid and Liquid-Liquid mixtures avoid detection of type of mixture. Instead the weightage is given to detection of nature and separation ofmixture.
2. Separation and qualitative analysis of the binary Mixtures should be carried out on microscale using microscale kits.

II) Quantitative analysis: Organic Estimations:(Any four)

1. Estimation of sucrose
2. Saponification value of oil.
3. To determine the amount of acid and amide present in the given mixture of acid and amide.
4. Determination of Molecular weight of monobasic/dibasic acid by volumetric method.
5. Estimation of unsaturation –to estimate the percentage purity of given olefinic compound by brominationmethod.

Note: Double burette method should be used for titration.

III) Organic Preparations: (Any four)

1. Multicomponent reaction - Preparation of Dihydropyrimidone.
2. Radical coupling reaction - Preparation of 1,1,2 bis-2naphthol.
3. Base catalyzed Aldol condensation- Preparation of Dibenzal propanone.
4. Diels Alder reaction- Reaction between Furan and Maleic acid
5. Benzil- Benzilic acid rearrangement reaction
6. Oxidation reaction – Preparation of Methyl phenyl sulfone.

IV) Preparation of Derivatives:

1. Picrate derivative (naphathalene and α-naphthol).
2. Iodoform (Acetone).
3. Osazone of Carbohydrates (Glucose).
4. Oxalate derivative (ofUrea).
5. Nitrate derivative of Urea
6. 2,4-Dinitro phenyl hydrazone (carbonyl compounds)
7. Oxime derivatives (carbonyl compounds)

Or

Determination of structure of organic compound from given NMR spectra.

Ethanol, Ethyl acetate, Benzyl alcohol, Propanoic acid, Butaraldehyde, Ethyl benzoate, Isopropyl benzene, Propyl ether, n-pentane, Propene, Diethyl amine, 2-chloro butane.

NB: All preparations should be carried out by considering green Chemistry approach

1. Preparation of derivative should be carried out on small scale. The starting compound should not be given more than one gram.
2. Calculation of percentage practical yield in preparation is must.
3. Recrystallization of crude product and its melting point.
4. The product should be confirmed byTLC.
5. Assign reactions with mechanism.

Reference books:

1. Practical Organic Chemistry by – A.I.Vogel.
2. Practical Organic Chemistry by – O. P.Agarwal

PHYSICAL CHEMISTRY

I. Non instrumental Experiments:

A. Any one of the following

i) Partition Law.

To determine the partition coefficient of CH_3COOH between H_2O and CCl_4.

ii) Viscosity.

To determine the viscosity average molecular weight of a polymer.

iii) Adsorption.

To investigate the adsorption of oxalic acid by activated charcoal and test the validity of Freundlich & Langmuir isotherms.

iv) Solubility.

To study the effect of addition of electrolyte (NaCl or KCl) on the solubility of Benzoic acid at room temperature.

B. Chemical kinetics. (Any four)

1. The study of energy of activation of first order reaction i.e. hydrolysis of methyl acetate in presence of 0.5 N HCl / 0.5 N H_2SO_4.
2. The study of energy of activation of second order reaction i.e. reaction between $K_2S_2O_8$ and KI (Equal concentrations).
3. The study of energy of activation of second order reaction i.e. reaction between $K_2S_2O_8$ and KI (Unequal concentrations).
4. To study the hydrolysis of methyl acetate by using its two concentrations in presence of 0.5 N HCl and hence find velocity constant of the reaction.
5. To study the effect of addition of electrolyte (KCl) on the reaction between $K_2S_2O_8$ and KI (Equal concentrations).

C. Partial molar volume.

1. To determine the partial molar volume of ethyl alcohol in a mixture of ethyl alcohol and water (Any seven mixtures be given).

II. Instrumental experiments

A. Potentiometry (Any four)

1. Titration of strong acid with strong alkali.

   N.B. i) 8 to 10 ml of 1N acid solution to be given by examiner in 100 ml volumetric flask & student should dilute it to 100 ml and 10ml of this solution is taken for titration.

   ii) Experiment is carried out by taking pilot run from 1 to 10 ml and then final run taking 0.2 ml reading in the range of end point.

2. Preparation of buffer solution and determination of their pH (Any five buffer solutions), Theoretical calculation of pH values by using Henderson's equation.
3. Determination of standard electrode potential of Zn/Zn^{++}, Cu/Cu^{++}, Ag/Ag^{+} (Any two).
4. Estimate the amount of Cl^{-}, Br^{-} and I^{-} in given unknown halide mixture by titrating it against standard $AgNO_3$ solution.
5. Titration of ferrous ammonium sulphate using $K_2Cr_2O_7$ solution and to calculate redox potential of Fe^{++}, Fe^{+++} system.

B. Conductometry (Any three).

N.B. i) 8 to 10 ml of 1N acid solution to be given by examiner in 100 ml volumetric flask & student should dilute it to 100 ml and 10ml of this solution is taken for titration.

1. Titration of a mixture of weak acid and strong acid with strong alkali
2. To study the effect of substituent on dissociation constant of weak acid with respect to acetic acid and monochloroacetic acid (cell constant to be given).

   N.B. Calculate K by using formula $K= \alpha^2.C/1- \alpha$
3. To determine the velocity constant of hydrolysis of ethyl acetate by NaOH solution by conduct metric method.
4. To determine the normality of citric acid in lemon by titrating it against standard 0.2 N NaOH solution by conduct metric method.
5. To determine λ_∞ of strong electrolyte (NaCl or KCl) and to verify Onsager equation.

C. Refractometry. (Any One)

1. To determine the percentage composition of unknown mixture by (i) graphical method and (ii) by composition law (Densities of pure liquids A & B be given).
2. To determine the molar refractivity of methyl acetate, ethyl acetate, n-hexane and

carbon tetrachloride and calculate the refraction equivalents of C, H and Cl atoms.

D. Colorimetry (Any Two).

1. To verify Lambert – Beer's law using $CuSO_4$ solution.
2. To estimate of Fe^{+++} ions by thiocynate method.
3. To estimate Fe^{+++} ions using salicylic acid by colorimetric titration.
4. To determine the order of reaction for the oxidation of alcohol by potassium dichromate and potassium permanganate in acidic medium colorimetrically.

E. pH – metry (Any One).

1. To determine the dissociation constant of monobasic acid (Acetic acid).
2. To determine the dissociation constant of dibasic acid (Malonic acid).
3. To determine hydrolysis constant of aniline hydrochloride.

Reference Books:

1. Findlay's Practical Physical Chemistry (Longman)
2. Advanced Practical Physical Chemistry by J. B. Yadav, Goel publishing house.
3. Practical Physical Chemistry by B. D. Khosla, V. C. Garg (R. Chand and Co.)
4. Systematic experimental Physical Chemistry by Rajbhoj, Chandekar (Anjali Publicaiton) Aurangabad.
5. Practical Physical Chemistry: Nandkumari, Kothari and Lavande.
6. Practical Physical Chemistry by Gurtu (S. Chand).
7. Text Book of Qualitative Inorganic Analysis by A. I. Vogel (ELBS Longman).

Nature of Practical Examination

1) The practical examination will be of **200** marks.

2) The duration of practical examination will be of **three days - six and half hour per day.**

3) Questions related to the practical exercise/project report/industrial visit carried out by the student should be asked in viva.

4) Use of scientific calculator is allowed.

5) S.I. units should be used wherever possible.

6) Use of Chart / Hand book / Text book of practical is allowed.

7) A student is expected to submit a journal certified by the Head of the Department.

8) A student not be permitted to appear at the practical examination unless he/she produces a certified journal. If the journal is lost, the student should produce a certificate from the Head of the Department stating that he/she has satisfactory completed the practical work but his / her journal is lost.

9) Use of Digital / Analytical / Chainometric / Single pan balance is allowed.

10) A student should submit one copy of project at the time of examination.

Each examiner should asses the project work for Five marks and sign the same. If any student will not submit project work, he/she will be given Zero mark for the project.

11) The distribution of marks for practical examination will be as follows:

A) Physical Chemistry 60 marks

i) Non-instrumental experiment 25 marks

ii) Instrumental experiment 25 marks

iii) Viva 05 marks

iv) Journal 05 marks

B) Inorganic Chemistry 65 marks

i) Gravimetric analysis 25 marks

ii) Preparation 15 marks

iii) Volumetric estimation 15 marks

iv) Viva 05 marks

v) Journal 05 marks

C) Organic Chemistry 60 marks

i) Mixture separation and identification of compounds 25 marks

ii) Estimation/Preparation 20 marks

iii) Derivative 05 marks

iv) Viva 05 marks

v) Journal 05 marks

D) Project 15 marks

Total:- 200 marks

B.Sc. Programme structure (CBCS Pattern)

B.Sc. I, B. Sc. II, B. Sc. III Inorganic, Organic, Physical Analytical Chemistry / Industrial Chemistry)

B. Sc. I

Semester	Subject	Course Code	Paper No
I	Inorganic Chemistry	DSC-3A	I
	Organic Chemistry	DSC- 4A	II
II	Physical Chemistry	DSC- 3B	III
	Analytical Chemistry	DSC – 4B	IV

B. Sc. II

Semester	Subject	Course Code	Paper No
III	Physical Chemistry	DSC-C3	V
	Industrial Chemistry	DSC- C4	VI
IV	Inorganic Chemistry	DSC- D3	VII
	Organic Chemistry	DSC – D4	VIII

B. Sc III

Semester	Subject	Course Code	Paper No
V	Inorganic Chemistry	DSC-E5	IX
	Organic Chemistry	DSC- E6	X
	Physical Chemistry	DSC- E7	XI
	Analytical Chemistry	DSC – E8	XII
VI	Inorganic Chemistry	DSC-F5	XIII
	Organic Chemistry	DSC- F6	XIV
	Physical Chemistry	DSC- F7	XV
	Industrial Chemistry	DSC – F8	XVI

SHIVAJI UNIVERSITY, KOLHAPUR.

Accredited By NAAC with 'A' Grade

Revised Syllabus For

B.Sc Part- III

Zoology

Syllabus to be implemented from

June, 2020 onwards.

SHIVAJI UNIVERSITY, KOLHAPUR

Revised Syllabus for Bachelor of Science

B. Sc. III – Zoology –To be implemented from June 2020

GENERAL OBJECTIVES OF THE COURSE

1) Aims:

1. To impart the knowledge of animal science to the pupils.
2. To make the pupils to use the knowledge in their daily life.
3. To make the pupils aware of natural resources and environment.
4. Application of knowledge in Zoology for nutrition, agriculture & live stock.
5. To provide practical experiences which form a part of their learning processes.
6. To develop aptitude for scientific work & ability to pursue studies far beyond graduation.
7. To encourage the pupils to take life science as a carrier which is the need now a days.
8. To make the pupils fit for the society.

2) Objectives –

1. To impart knowledge is the basic aim of education. The students are expected to acquire the knowledge of animal science, natural phenomenon, manipulation of nature & environment by man.
2. Understanding the scientific terms, concepts, facts, phenomenon & their interrelationships.
3. Applications of the knowledge.
4. To develop skills in practical work, experiments & laboratory materials, instruments.
5. To develop interests in the subject & scientific hobbies.
6. To develop scientific attitude which is the major objective? This makes the students open minded, critical observations, curiosity, thinking etc.
7. Abilities to apply scientific methods, collection of scientific data, problem solving, organize science exhibitions, clubs etc.
8. Appreciation of the subject, contributions of scientists, scientific methods, scientific programs etc.

3) DURATION

- The course shall be full time course.
- The duration of course shall be three years.

4) PATTERN: Pattern of Examination will be semester for theory and annual for practical with INTERNAL ASSESSMENT (Project/Seminar/Field work for theory) Scheme

5) MEDIUM OF INSTRUCTION: The medium of instruction shall be in English.

6) STRUCTURE OF COURSE: B.Sc. III – Zoology THEORY – No. of papers: Eight, No of practicals: Four SEMESTER V-Paper IX to XII & SEMESTER VI- Paper XIII to XVI

SEMESTER-V Theory

Sr. No.	Subject	Marks	University	Internal
1	Zoology Paper- IX	50	40	10
2	Zoology Paper- X	50	40	10
3	Zoology Paper- XI	50	40	10
4	Zoology Paper- XII	50	40	10

Total=200

SEMESTER-VI Theory

Sr. No.	Subject	Marks	University	Internal
1	Zoology Paper- XIII	50	40	10
2	Zoology Paper- XIV	50	40	10
3	Zoology Paper- XV	50	40	10
4	Zoology Paper- XVI	50	40	10

Total = 200

PRACTICALS- Annual

09	Practical—V	50
10	Practical – VI	50
11	Practical – VII	50
12	Practical – VIII	50

Total 200

Total = 600

7. SCHEME OF TEACHING AND EXAMINATION (Teaching scheme - Hrs/Week)

No	Sem. - V	Sem. - VI	L	P	Total
1	Paper No IX Paper No. XIII	Paper No IX Paper No. XIII	3		
2	Paper No IX Paper No. XIII	Paper No IX Paper No. XIII	3		
3	Paper No IX Paper No. XIII	Paper No IX Paper No. XIII	3		
4	Paper No IX Paper No. XIII	Paper No IX Paper No. XIII	3		
			12		**12**
1	Practical V			5	
2	Practical VI			5	
3	Practical VII			5	
4	Practical VIII			5	
				20	**20**
	Total				**32**

8) SCHEME OF EXAMINATION

Question paper will be set in the view of the / in accordance with the entire syllabus and preferably covering each unit of syllabi.

9) EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS (FOR REVISED SYLLABUS)

Refer copy of revised syllabus

10) OTHER FEATURES

1. Required Books, Journals stated in each syllabus of Part I, Part II and Part III Zoology and Fisheries.

A) LIBRARY : Reference and Text Books, Journals, and Periodicals, Reference Books for Advanced Studies.

B) SPECIFIC EQUIPMENTS: Necessary to run the Course (T.V., L.C.D., andOverhead Projector), (Computer and necessary software's, operating systems etc.)

C) LABORATORY SAFETY EQUIPMENTS

- Fire Extinguishers at least two sets in each laboratory. (Lab. area 600 sq.ft.)

- Leakage of gases be avoided.
- Primary medical aid box (First Aid Kit)
- Sugar / Glucose – 500 gm pack: Pinch of sugar and a cup of drinking water in hypoglycemic condition. OR In extreme weakness of student or person concerned.
- Rules of animal ethics should be strictly followed.

D) LABORATORY INSTRUCTIONS

1) Always wear an apron inside the laboratory. Do not wear it outside.

2) Do not drink or eat inside the laboratory.

3) Do not place pencil, fingers or any material in the mouth. Moisten labels with water.

4) Use microscopes and other instruments carefully.

5) Discard all used glassware such as test tube, pipettes, petry-plates, glass slides in a receptacle meant for it.

6) Put cotton plugs, papers, matches, waste dissection material etc. in a waste-paper basket. Do not throw them in sink not leave them on desk or floor.

7) Regard all cultures as pathogenic. Take every precaution against infection.

8) Report all accidents to the instructor immediately.

9) Wash hands thoroughly with soap and water before and after dissection and experiment.

10) Always turn off water, gas and electricity before leaving the laboratory.

11) When students enter in laboratory they should have – A Laboratory Journal, pencil and eraser, foot rule, dissection box with dissecting instruments, a small napkin.

12) All drawings must be made with drawing pencil only.

13) As the journal is to represent student's bonafide work during the whole year, student should keep it as clean as possible and DO NOT LOOSE IT

14) Students should not forget that unless their journals are certified, they are not allowed to appear for the university examination

11) COMMON NATURE OF QUESTION FOR THEORY

PAPER: SEMISTER – V Zoology Paper (IX, X, XI, XII)

SEMISTER – VI Zoology Paper (XIII, XIV, XV, XVI)

Q. 1	Multiple Choice Questions (Eight questions)	08
Q. 2	Long answer questions (Attempt any two out of three)	16
	A.	
	B.	
	C.	
Q. 3	Shorn Notes (Attempt any four out of Six)	16
	a.	
	b.	
	c.	
	d.	
	e.	
	f.	

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SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- IX

DSE-E29 (COMPARATIVE ANATOMY OF VERTEBRATES)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Integumentary System	4
1. Generalized structure of integument	
2. Functions of Integument	
3. Soft and Hard epidermal derivatives	
4.Hard epidermal derivatives	
Unit 2: Skeletal System	4
1. Vertebral column	
2. Appendicular skeleton	
Unit3: Digestive System	4
Brief account of alimentary canal and digestive glands	
Unit 4: Respiratory System	4
Brief account of Gills, lungs, air sacs	
Unit 5: Circulatory System	4
Evolution of heart and aortic arches	
Unit 6: Evolution of Kidney	3
Succession of kidney	
Unit 7: Nervous System	3
Comparative account of brain	
Unit 8: Sense Organs	4
Comparative account of ear and eye of vertebrates	

SUGGESTED READINGS:

1. Kardong, K.V. (2005) Vertebrates' Comparative Anatomy, Function and Evolution. IV Edition. McGraw-Hill Higher Education. Kent, G.C. and Carr R.K. (2000). Comparative Anatomy of the Vertebrates. IX Edition
2. The McGraw-Hill Companies. Hilderbrand, M and Gaslow G.E. Analysis of Vertebrate Structure, John Wiley and SonsWalter, H.E. and Sayles, L.P; Biology of Vertebrates, Khosla Publishing House.

3. Outlines of comparative anatomy, Romer & Parsons, Central Book Depot, The Vertebrate Body (Saunders).
4. Biology of Vertebrates Walter & Sayles; (McMillan).

5. Chordate Zoology, P.S. Dhami & J. K. Dhami - R. Chand & Co., New Delhi.
6. Modern Textbook of Zoology, R. L. Kotpal, Rastogi Publications, Meerut.
7. The Life of Vertebrates, 3rd Edition, 1993, J. Z. Young E. L. B.S. Oxford.
8. Chordate Zoology - E.L. Jordan, S. Chand & Co., New Delhi.
9. The Phylum Chordata - 1987, H.H. Newman, Distributor Satish Book Enterprise, Agra. 8. Comparative Anatomy of the Vertebrates G. C. Kent.

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- X

DSE-F29 (Molecular Cell Biology and Animal Biotechnology)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Molecular Biology – 7

1) DNA Replication (Semiconservative mode)
2) DNA Damage and Repair mechanism
3) Regulation of gene expression- Operon concept
4) Genetic Code:
    i) Properties of Genetic code
    ii) Codon assignment
    iii) Wobble hypothesis

Unit 2: Protein synthesis 8

A) Transcription
i) Process in prokaryotes and eukaryotes
ii) RNA polymerase
iii) Post transcriptional modification in RNA
B) Translation in prokaryotes and eukaryotes
i) Initiation
ii) Elongation
iii) Termination

Unit 3 : Molecular Techniques in Gene manipulation 15

1. Restriction enzymes: Nomenclature, detailed study of Type II.
2. Characteristics of Cloning vectors: Plasmids, Cosmids, Phagemids, Lambda Bacteriophages
3. Gene cloning: Transformation techniques by Calcium chloride method and electroporation
4. Construction of genomic and cDNA libraries
5. Southern, Northern and Western blotting
6. DNA sequencing: Sanger method
7. Polymerase Chain Reaction,
8. DNA Finger Printing
9. DNA micro array

SUGGESTED READINGS:

1. Brown, T.A. (1998). Molecular Biology Labfax II: Gene Cloning and DNA Analysis. II Edition, Academic Press, California, USA. Glick, B.R. and Pasternak, J.J. (2009).
2. Molecular Biotechnology - Principles and Applications of Recombinant DNA. IV Edition, ASM press, Washington, USA. Griffiths, A.J.F., J.H. Miller, Suzuki, D.T., Lewontin, R.C. and Gelbart, W.M. (2009).
3. An Introduction to Genetic Analysis. IX Edition. Freeman and Co., N.Y., USA. Snustad, D.P. and Simmons, M.J. (2009).
4. Principles of Genetics. V Edition, John Wiley and Sons Inc. Watson, J.D., Myers, R.M., Caudy, A. and Witkowski, J.K. (2007).
5. Recombinant DNAGenes and Genomes- A Short Course. III Edition, Freeman and Co., N.Y., USA. Beauchamp, T.I. and Childress, J.F. (2008).
6. Principles of Biomedical Ethics. VI Edition, Oxford University Press.
7. Cell and Molecular Biology, 8th Edition, De. Robertis EDP and De Robertis Jr. EMF, Lippincott Williams and Wilkins,Philadelphia.
8. Cell Biology, C.B. Powar, Himalaya Publication House.
9. Cell and Molecular Biology, EJ. Dupraw, Academic Press, NewYork.
10. Cell Structure and Function - A. G. Loewy, P. Siekevitz, J. R. Meninger & J. A. N. Gallant, Saunder College, Philadelphia.
11. Molecular Biology of the Cell - 3rd Edition, Bruce Alberts, Dennis Bray, Julian Lewis, Martin Raff, K. Roberts & James D. Watson, Garian Publishing, New York.

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- XI

DSE-F30 (Biotechniques and Biostatistics)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit I: Genetically Modified Organisms 9

1. Production of cloned and transgenic animals:
    a. Nuclear Transplantation
    b. Retroviral Method
    c. DNA microinjection
2. Applications of transgenic animals:
    a. Productions of pharmaceuticals
    b. Production of donor organs
3. Knockout mice.

Unit II: Culture Techniques and Applications 6

a. Animal cell culture: Introduction, principle and applications
b. Stem Cells: Introduction to stem cells
    i) Potency of stem cells: Totipotency, Pleurepotency, Multipotency, Unipotency
    ii) Sources of stem cells-Embryo, Fetal, Adult, Bone marrow

Unit III: Biostatistics 15

a. Classification of Biological data
b. Frequency distribution
c. Tabulation
d. Graphical representation of data
e. Measures of central tendency (Mean, Median, Mode)
f. Dispersion – Mean, deviation & standard deviation
g. Correlation – Scattered diagram, Karl Pearson's correlation coefficient and Spearman's rank correlation coefficient.

SUGGESTED READINGS:

1. Brown, T.A. (1998). Molecular Biology Labfax II: Gene Cloning and DNA Analysis. I Edition, Academic Press, California, USA. Glick, B.R. and Pasternak, J.J. (2009). Molecular Biotechnology - Principles and

2. Applications of Recombinant DNA. IV Edition, ASM press, Washington, USA. Griffiths, A.J.F., J.H. Miller, Suzuki, D.T., Lewontin, R.C. and Gelbart, W.M. (2009)
3. An Introduction to Genetic Analysis. IX Edition. Freeman and Co., N.Y., USA. Snustad, D.P. and Simmons, M.J. (2009).
4. Principles of Genetics. V Edition, John Wileyand Sons Inc. Watson, J.D., Myers, R.M., Caudy, A. and Witkowski, J.K. (2007).
5. Recombinant DNAGenes and Genomes- A Short Course. III Edition, Freeman and Co., N.Y., USA.Beauchamp, T.I. and Childress, J.F. (2008).
6. Principles of Biomedical Ethics. VI Edition Oxford University Press.
7. Elements of Biotechnology - P. K. Gupta, Rastogi Publications.
8. Gene V & VI, 1994, Lewin B., Oxford University Press, Oxford.
9. Concept of Genes-Pearson Edition 9.Cell and Molecular Biology

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- XII

DSE-F31 (AQUATIC BIOLOGY)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Aquatic Biomes **10**

a. Freshwater ecosystem (lakes, wetlands, streams and rivers),
b. Estuaries
c. Intertidal zones
d. Oceanic pelagic zone
e. Marine benthic zone
f. Coral reefs

Unit 2: Freshwater Biology **10**

1. Lakes
    a. Lake as an Ecosystem
    b. Lake Morphometry
    c. Physico-chemical characteristics
        i. Light
        ii. Temperature
        iii. Thermal Stratification
        iv. Dissolved solids
        v. Carbonates
        vi. Bicarbonates
        vii. Phosphates and Nitrates
        viii. Turbidity
        ix. Dissolved gases (Oxygen Carbon dioxide)
        x. Nutrient Cycle – (Nitrogen, Sulphur and Phosphorus)
2. Streams
    a. Different stages of stream development
    b. Physico-chemical Environment
    c. Adaptation of hill stream fishes

Unit 3: Endocrinology 10

a. Study of endocrine glands – Anatomy and histology

b. Hormones- Nature, role, regulation and disorders with reference to the following

thyroid gland, parathyroid gland, adrenal gland and islets of Langerhans

SUGGESTED READINGS:

1. Anathakrishnan : Bioresources Ecology 3rd Edition
2. Goldman : Limnology, 2nd Edition
3. dum and Barrett : Fundamentals of Ecology, 5th Edition
4. Pawlowski : Physicochemical Methods for Water and Wastewater Treatment, 1st
5. Edition Wetzel : Limnology, 3rd edition
6. Trivedi and Goyal : Chemical and biological methods for water pollution studies
7. Welch : Limnology Vols. I-II
8. Animal Physiology – Nelson (Cambridge)
9. Endocrinology – Hadely
10. General Endocrinology – Bangara and Turner (W.B. Saunders)
11. Reproductive Physiology – Nalbandov A. V.

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- XIII

DSE-E30 (DEVELOPMENTAL BIOLOGY OF VERTEBRATES)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1 : Gametogenesis 6

1. Types of Eggs
2. Fertilization – Types and Process of Fertilization
3. Types of Cleavages

Unit 2: Early Development of Frog 6

1. Structure of mature egg and its membranes
2. Cleavage
3. Blastula and its fate map
4. Process of gastrulation
5. Types of Morphogenic Movements
6. Fate of three germinal layers
7. Neurulation
8. Metamorphosis in frog and its hormonal regulation

Unit 3: Chick Embryology 15

1. Structure of sperm
2. Structure of egg and vitellogenesis
3. Fertilization and cleavage
4. Blastula and its fate map
5. Process of gastrulation
6. Organogenesis
    a. Development of neural tube and brain up to 72 hours of incubation
    b. Development of gut up to 72 hours of incubation
    c. Development of blood and heart up to 72 hours of incubation
    d. Foetal membranes and significance

Unit 4: Late Embryonic Development 3

1. Implantation of embryo in human being
2. Placenta – Formation, types and significance

SUGGESTED READINGS:

1. An Introduction to Embryology 1981, Balinsky B.L., Saunders College,Philadelphia.
2. Developmental Biology; Patterns/Principles/Problems, 1982, Saunders J. W. Collier MacMillan, Publishers, London.
3. Developmental Biology, 1997, 3rd Edition, Gilbert S.F. Saunder Associates Inc. U.S.A.
4. Developmental Biology, 1992 3rd edition, Browder L.W. Erickson C.A. & Williams, R J. Saunders College, Publications, London.
5. A Text Book of Embryology, Dr. Puranik P. G., S. Chand & Co. 6. Developmental Biology, 1984, Browder L.W. , Saunders College Publicaions, U.S.A.
6. Development of Chick embryo, 1972, Lillie. 8. Developmental Biology, 1991, 3rd Edition, Sinaur Associates, Inc. U.S.A.Gilbert, S. F. (2006).
7. Developmental Biology, VIII Edition, Sinauer Associates, Inc., Publishers, Sunderland, Massachusetts, USA. Balinsky, B.I. (2008).
8. An introduction to Embryology, International Thomson ComputerPress. Carlson, Bruce M (1996). Patten's Foundations of Embryology, McGraw Hill, Inc.

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- XIV

DSE-E32 (IMMUNOLOGY)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Overview of the Immune System 7

1. Introduction to basic concept in immunology
2. Principles of innate and adaptive immune system

Unit 2: Cells and Organs of the immune system 8

1. Haematopoeisis
2. Cells of immune system
3. Organs (Primary and Secondary lymphoid organs) of the immune system
4. Immune responses- Humoral and cell mediated

Unit 3 : Antigens 7

1. Basic properties of antigens
2. B and T cell epitopes

Unit 5: Immunoglobulin / Antibodies 8

1. Structure, Classes and Functions of Antibodies
2. Antigen – Antibody interactions
3. Hybridoma Technology: Monoclonal Antibodies in diagnosis and therapeutics

SUGGESTED READINGS:

1. Kindt, T. J., Goldsby, R.A., Osborne, B. A. and Kuby, J (2006). Immunology, VI Edition. W.H. Freeman and Company. David, M., Jonathan, B., David, R. B. and Ivan R. (2006).
2. Immunology, VII Edition, Mosby, Elsevier Publication. Abbas, K. Abul and Lechtman H. Andrew (2003.) Cellular and Molecular
3. Immunology. V Edition. Saunders Publication.

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- XV

DSE-E31 (Applied Zoology - II)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit 1: Apiculture 8

1. Types and casts of honey bee
2. Honey Comb
3. Bee Keeping
    a. Artificial models of bee hive – Newton and Langstroth models
    b. Bee keeping Equipments
    c. Extraction of Honey
4. Medicinal Value of Honey

Unit 2 : Animal Husbandary 5

1. Indigenous and exotic breeds of cattle
2. Preservation and artificial insemination in cattle
3. Induction of early puberty
4. Synchronization of estrus in cattle
5. Commercial importance of dairy farming

Unit 3: Pearl culture 4

1. Species of oyster
2. Process of Pearl formation: natural and artificial
3. Maintenance of oysters
4. Harvesting
5. Importance of Pearl

Unit 4: Freshwater prawn culture 3

1. Species of Prawn
2. Site selection
3. Farm Construction
4. Production system: fertilization, Larval Development, Food and feeding
5. Harvesting

Unit 5: Fish Technology 5

Genetic improvements in aquaculture industry:

1. Induced breeding
2. Transportation of fish seed
3. Feeding and development
4. Harvesting and Marketing

Unit 4 : Goat Farming- 5

1. Breeds
2. Feeding
3. Housing
4. Economic Importance

SUGGESTED READINGS:

1. Mollusca - Hyman.
2. Prawn and Prawn Fishery of India - Kurian.
3. Fish Culture - K. H. Alikuhni.
4. Fish Culture - Lagter.
5. Fishes of India. - Khanna.
6. Hand Book of Animal Husbandary and Dairy - Mudlyer.
7. Bee keeping in India - Sardar Sing.
8. Bee Keeping in India- M. G. Smith.
9. Poultry keeping in India - Naidu P.N.M.
10. Poultry Husbandary - M. A. Jule. 18. Poultry Husbandary - Moarthy.
11. Outlines of Dairy Technology - Sukumar De.
12. Milk and milk products - Clarence Henry Eckles,Willes Barnes Combs, Harold Macy

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Paper- XVI

DSE-F32 (Insect Vectors and Histology)

Theory: 30 hrs. (37.5 lectures of 48 minutes) (Credits 2)

Unit I: Dipteran as Disease Vectors 18

1. Dipteran as important insect vectors
    a. Mosquitoes
    b. Sand fly
    c. Houseflies
2. Study of mosquito born diseases –
    a. Malaria
    b. Dengue
    c. Chikungunya
    d. Viral encephalitis
    e. Filariasis
3. Control measures of Mosquitoes
4. Study of house fly as important mechanical vector
    a. Myiasis, Control of house fly

Unit II: Siphonoptera as Disease Vectors 6

1. Fleas a important insect vectors
2. Host-specificity
3. Study of Flea-borne diseases
    a. Plague
    b. Typhus fever
4. Control of fleas

Unit III: Histology of mammalian organs 6

Tooth, tongue, Salivary glands, Stomach, Duodenum, Ileum, Liver, Pancreas, Kidney

SUGGESTED READINGS:

1. Imms, A.D. (1977). A General Text Book of Entomology. Chapman & Hall, U K Chapman, R.F. (1998).
2. The Insects: Structure and Function. IV Edition, Cambridge University Press, U K Pedigo L.P. (2002).
3. Entomology and Pest Management. Prentice Hall PublicationMathews, G. (2011).
4. Integrated Vector Management: Controlling Vectors of Malaria
5. Insect Vector Borne Diseases. Wiley-Blackwell
6. Textbook of Histology: Bloom W and Fawcett D.W.
7. Histology: Lippinocott. Ham, A.W.
8. Histology: Greep, R.O and well, L.
9. An Atlas of Histology. Heinemann Educational Book Ltd. London and ELBS: Freeman. W.H. and Bracegirdle, B.
10. Microscopic Anatomy of vertebrates, Lea and Febigen. Philaldelphia: Kendall, J.I.
11. Histology of Mammals: Athavale, M.V and Latey, A. N.

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Practical – I (Credits-02)

Comparative anatomy and developmental biology of vertebrates

I. Comparative Study of following

1. V.S. of skin of vertebrates
2. Digestive system of vertebrates
3. Respiratory system of vertebrates
4. Heart of vertebrates
5. Brain of vertebrates
6. Osteology
    a) The skeleton of fowl (Disarticulated)
    b) The skeleton of rabbit (Disarticulated)
    c) Mammalian skull's – (any one herbivorous and one carnivorous animal)

II. Study of developmental stages of frog.

1. Cleavage
2. Blastulation
3. Gastrulation
4. Neurulation
5. Stages of metamorphosis in frog
    a. External gill stage
    b. Internal gill stage
    c. Forelimb stage
    d. Hind limb stage
    e. Tail bud stage
    f. Juvenile stage

III. Study of Chick Embryo

12. Whole mount of chick embryo – 18, 24, 33, 48 and 72 hours.
13. T.S. of chick embryo – 18, 24, 33, 48 and 72 hours.

VI. Preparation of whole mount chick embryo.

IV. Study of Histological structures of placenta (permanent slide or microphotographs)

1) Epitheliochorial
2) Endotheliochorial
3) Hemochorial
4) Syndesmochorial
5) Hemoendothelial

V. Examination of Gametes – Frog or Rat sperm & ovum through slides or microphotographs.

SHIVAJI UNIVERSITY, KOLHAPUR
Syllabus of B.Sc. Part III Zoology
Zoology Practical – II (Credits-02)

Applied Zoology – II and Immunology

Unit 1: Applied Zoology

1. Apiculture
   a. Casts of Honey Bees
   b. Bee Hive(Photographs or models)
   c. Pollen Basket
   d. Sting Apparatus
   e. Honey
   f. Newton's model of Bee Hive (Photographs or models)
   g. Bee keeping Equipments (Photographs or models)

2. Preservation & Artificial insemination in cattles
8. Pearl culture
   a. Species of oyster
   b. Process of Pearl formation: natural and artificial
   c. Importance of Pearl
9. Freshwater prawn culture
   a. Species of Prawn
   b. Site selection
   c. Farm Construction
   d. Production system
   e. Harvesting
10. Goat farming
   a. Breeds (any four = 2 Indigenous and 2 Exotic)
   b. Housing
   c. Feeding
6. Visit to goat farm or animal breeding centre – submission of visit report

B] Immunology

1. Study of lymphoid organ's (Photograph, Models, Videos)
2. Histological study of (slides or photographs)
   a. Spleen
   b. Thymus
   c. Lymph nodes
3. Preparation of stained blood smears to study various types of blood cells
4. Determination of ABO blood groups
5. Demonstration of
   a. ELISA
   b. Immuno-electrophoresis

C] Cell counting and viability test from splenocytes of farm breed animals / cell lines

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Practical – III (Credits-02)

Molecular biology, Animal biotechnology, Biostatistics & Biotechniques

I] Microtechnique

1. Preparation of permanent histological slides by HE technique
2. Histochemical technique
    a. AB PH 1 technique
    b. AB PH 2.5 technique
    c. PAS technique

II] Biotechniques

1. Chromatography – Separation of amino acid by paper chromatography
2. DNA isolation
3. Demonstration of DNA by feulgan technique
4. To study the following technique (photographs)
    a) Southern blotting
    b) Northern blotting
    c) Western blotting
    d) DNA sequencing (Sangers method)
    e) PCR
    f) DNA fingerprinting

III) Biostatistics

Any 10 example based on theory

IV] Project (any suitable work possible in local area or from the syllabus) Report of the same to be submitted at the time of practical examination

SHIVAJI UNIVERSITY, KOLHAPUR

Syllabus of B.Sc. Part III Zoology

Zoology Practical – IV (Credits-02)

Aquatic biology, insect vector & diseases

A] Aquatic biology

1. Determination of area of a lake using graphimetric & gravimetric method
2. Identify the zooplanktons present in lake ecosystem
3. Determination of turbidity or transparency from nearby lake or water body
4. Determination of dissolved oxygen
5. Determination of free CO_2
6. Determination of alkalinity (Carbonates & bicarbonates) from water collected from nearby lake or water body
7. Estimation of total hardness of water
8. Instruments used in limnology & their significance
   a) Secchi disc
   b) Van Dorn bottle
   c) Conductivity meter
   d) Turbidity meter
   e) PONAR grab sampler
9. Visit to seashore/water reservoir/animal sanctuary to study animal diversity. Report of tour should be submitted at the time of practical examination
10. Endocrine glands (Anatomy and Histology) – Thyroid, Parathyroid, Adrenal and Pancreas.

B] Insect Vectors & diseases

10. Study of different kinds of mouthparts of insects
    a) Chewing & biting
    b) Chewing & lapping
    c) Piercing & sucking
    d) Sponging
    e) Siphoning
11. Study of following insect vectors through permanent slides or photograph
    a) Insect vector – Mosquito, sandfly & housefly
    b) Study of mosquito born diseases – Malaria, dengue, chikungunya, encephalitis, filariasis
    c) Study of sandfly born diseases – Visceral leishmanians, Cutaneous leishmanians, Phlebotomus fever
    d) Study of housefly born diseases – Myiasis
    e) Study of flea born diseases – Plague, typhus
12. Histology of Following mammalian organs-
    a) Tooth (V.S.) b) Tongue c) Salivary gland d) Stomach e)Duodenum f) Ileum g) Liver h) Pancreas i) Kidneys

SHIVAJI UNIVERSITY, KOLHAPUR.

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Accredited By NAAC with 'A' Grade

CHOICE BASED CREDIT SYSTEM

Syllabus For

B.Sc. Part - III

Computer Science (Entire)

SEMESTER V AND VI

(Syllabus to be implemented from June, 2020 onwards)

B. Sc. Part – III Computer Science Entire CBCS PATTERN (2020-21)

Sr. No.	Subject Title	TEACHING SCHEME						EXAMINATION SCHEME							
		THEORY			PRACTICAL			THEORY					PRACTICAL		
								University			Internal				
		No. of lectures	Hours	Credits	No. of lectures	Hours	Credits	Hours	Max Marks	Min Marks	Max Marks	Min Marks	Hours	Max Marks	Min
SEMESTER – V															
1	DSE-501	4	3.2	**3**	5	4	2	2	40	16	10	4	**PRACTICAL EXAMINATION IS ANNUAL**		
2	DSE-502	4	3.2	**3**	5	4	2	2	40	16	10	4			
3	DSE-503	4	3.2	**3**	--	--	--	2	40	16	10	4			
4	DSE-504 / DSE-505	4	3.2	**3**	--	--	--	2	40	16	10	4			
5	SEC-III	--	--	--	5	4	2	--	--	--	--	--			
6	PW	--	--	--	5	4	2	--	--	--	--	--			
7	AECC-E	4	3.2	**2**	---	---	---	2	40	16	10	**4**			
	TOTAL	**20**	**16**	**14**	**20**	**16**	**8**		**200**		**50**				
SEMESTER – VI															
1	DSE-601	4	3.2	**3**	5	4	2	2	40	16	10	4	**As per BOS Guide lines**	**100**	**40**
2	DSE-602	4	3.2	**3**	5	4	2	2	40	16	10	4		**100**	**40**
3	DSE-603	4	3.2	**3**	--	--	--	2	40	16	10	4		**100 PW**	**40**
4	DSE-604 / DSE-605	4	3.2	**3**	--	--	--	2	40	16	10	4			
5	SEC-IV	--	--	--	5	4	2	--	--	--	--	--	**SEC III**	**50**	**20**
6	PW	--	--	--	5	4	2	--	--	--	--	--	**SEC IV**	**50**	**20**
7	AECC-F	4	3.2	**2**	---	---	---	2	40	16	10	4			
	TOTAL	**16**	**16**	**14**	**20**	**16**	**8**		**200**		**50**		**Theory**	**Practical**	
		32	**32**	**28**	**40**	**32**	**16**						**250+250= 500**	**400**	

- Student contact hours per week : 32 Hours (Min)
- Theory and Practical Lectures : 48 Min. Each
- Total Marks for B.Sc.-III (Including English.) : **900**
- Total Credits for B.Sc.-III (Semester V & VI) : **44**
- **CC-** Core Course, **DSE**: Discipline Specific Elective Course, **SEC:** Skill Enhancement Course,
- **AECC-** Ability Enhancement Compulsory Course (E & F): English for communication.

- ***Separate passing for each theory paper of 50 marks. Minimum 20 (16+4) marks out of 50 are required for passing.***
- ***Practical Examination will be conducted annually for 200 marks. Out of which 100 marks for DSE-501 & DSE-601 combined and 100 marks for DSE-502 & DSE-602combined. Minimum 40 (40%) marks are required for passing in each case.***
- ***Project Work will be evaluated for 100 marks and minimum 40 (40%) out of 100 are required for passing.***
- ***There will be no theory examination for SEC courses. The practical examination for SEC will be conducted annually of 100 marks and 40 (40%) marks are required for passing.***
- ***The practical examination for SEC shall be conducted internally.***
- ***Separate passing for theory, practical and project.***

B.Sc. Computer Science Entire Part-III

Year of Implementation: Revised Syllabus will be implemented from June 2020
Duration : Part- III shall be of one academic year consisting of two semesters.
Pattern : Semester Pattern.

B.Sc. Part – III Computer Science Entire (2020-21)

Code	Course	Course Title
	SEMESTER – V	
DSE-501	Computer Science Paper – IX	Core Java
DSE-502	Computer Science Paper – X	C# Programming
DSE-503	Computer Science Paper – XI	Software Engineering
Elective Course I : DSE-504 OR DSE-505		
DSE-504	Computer Science Paper – XII	Machine Learning Part-I
DSE-505	Computer Science Paper – XII	Data Communication
SEC-III	Skill Enhancement Course – III	PHP Part-I
AECC-E	English Paper – III	English for communication- III
	SEMESTER – VI	
DSE-601	Computer Science Paper – XIII	Advanced Java
DSE-602	Computer Science Paper – XIV	ASP.Net
DSE-603	Computer Science Paper – XV	Software Project Management
Elective Course II : DSE-604 OR DSE-605		
DSE-604	Computer Science Paper – XVI	Machine Learning Part-II
DSE-605	Computer Science Paper – XVI	Computer Network
SEC-IV	Skill Enhancement Course – IV	PHP Part-II
AECC-F	English Paper – IV	English for communication- IV
LAB-9	Lab Course Based on DSE-501& 601	
LAB-10	Lab Course based on DSE-502 & 602	
LAB-11	Lab Course based on SEC- III & SEC-IV	
PW	Project Work	

DSE	Discipline Specific Elective	SEC	Skill Enhancement Course
AECC	Ability Enhancement Core Course	PW	Project Work

Choice Based Credit System (CBCS)
B.Sc. Computer Science Entire Part III
Syllabus to be implemented from June 2020 onwards.

Course: Computer Science

1. **TITLE: Computer Science**
2. **YEAR OF IMPLEMENTATION :** Revised Syllabus will be implemented from June 2020 onwards.
3. **DURATION :** B.Sc. in Computer Science Entire Part- III The duration of course shall be One year and Two semesters.
4. **PATTERN:** Pattern of examination will be semester.
5. **STRUCTURE OF COURSE:**

Sr.No.	Code	Paper	Name of Paper	Marks
SEM-V				
1	DSE-501	Paper -IX	Core Java	**50(40 Univ +10 Internal)**
2	DSE-502	Paper -X	C# Programming	**50(40 Univ +10 Internal)**
3	DSE-503	Paper -XI	Software Engineering	**50(40 Univ +10 Internal)**
Elective Course I : DSE-504 OR DSE-505				
4	DSE-504	Paper-XII	Machine Learning I	**50(40 Univ +10 Internal)**
	DSE-505	Paper –XIII	Data Communication	**50(40 Univ +10 Internal)**
5	AECC-E	English Paper-III	English for communication- III	**50(40 Univ +10 Internal)**
SEM-VI				
6	DSE-601	Paper-XIV	Advanced Java	**50(40 Univ +10 Internal)**
7	DSE-602	Paper-XV	ASP.NET	**50(40 Univ +10 Internal)**
8	DSE-603	Paper-XVI	Software Project Management	**50(40 Univ +10 Internal)**
Elective Course II : DSE-604 OR DSE-605				
9	DSE-604	Paper-XVII	Machine Learning II	**50(40 Univ +10 Internal)**
	DSE-605	Paper-XVIII	Computer Network	**50(40 Univ +10 Internal)**
10	AECC-F	English Paper-III	English for communication- IV	**50(40 Univ +10 Internal)**

Practical Examination (Annual)

Code	Name of Paper	Marks
LAB-9	Lab Course Based on DSE-501& 601	100
LAB-10	Lab Course based on DSE-502 & 602	100
LAB-11	Lab Course based on SEC- III & SEC-IV	100
PW	Project Work	100

Note- Four *Lectures per theory course per week.*
Lab Course five periods (four hours)-per week per 20 students batch.

SCHEME OF EXAMINATION :-

- The Theory examination shall be conducted at the end of each semester.
- The Theory paper shall carry 40 Marks and internal evaluation carry 10 marks.
- There shall be no theory exam on SEC –I & SEC –II.
- The practical examination shall be conducted at the end of each year.
- The Practical paper shall carry 100 marks.

STANDARD OF PASSING:-

- A student will have to secure **40%** of marks in theory and practical examinations each..
- Nature of Practical Question Paper and scheme of marking (ANNUAL)

Nature of theory question paper

- As per regular B.Sc. Program.

Nature of Practical Question Paper For LAB-9, LAB-10 and LAB- 11

1.The practical paper shall carry 100 marks.

2.There shall be two Sections.

3.For **LAB-9**,Section I shall be based on Paper-IX(DSC-501)

and Section II basedon Paper-XIV(DSC-601)

4. For **LAB-10**,Section I shall be based on Paper-X(DSC-502) and

Section II based on Paper-XV(DSC-602).

5.For **LAB-11**,Section I shall be based on SEC-III and Section II based on SEC-IV

6. Each Section shall be of three questions out of which one question is compulsory from each section.

7. Student has to solve total three questions.

8. Each Question carries **25** marks.

9.**10** marks for Certified Journal and **15** marks for Viva.

10. The total time duration of the practical examination should be 4 hours.

11. **PW** is project work of 100 marks.

CHOICE BASED CREDIT SYSTEM

SEMESTER - V
B.Sc.Computer Science Entire Part-III
Course Code:DSE-501: Computer Science Paper- IX

Course Title: Core Java
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures/ Week Total Marks: 40

Course outcome: After completion of this course student will be able to

1. Implement Object oriented concepts using java
2. Develop Object oriented software application
3. Develop multithreading applications
4. Handle exceptions while executing programs

Unit	Content	Allotted Hours
1	**Java Language Basics** • History and features of Java • Java Virtual Machine (JVM) • JDK tool(Folder structure-for practical purpose only) • Structure of java program, compilation and execution of java program • Java keywords, Data types • Java variables- declaration and assigning values to variables(using assignment statement and Scanner class object), scope of variables • Type casting- Implicit and Explicit casting, Operators of java • Control structures of java – 1)Branching statements- If , if ….else, if …else if and switch statement 2) Iterative statements- for loop, do… while, while loop, jumping statements-break and continue statement.	12
2	**Introducing classes and objects** • Introduction : Classes, Objects and methods • Defining a class, field declaration, method declaration • Accessing class members, access specifiers in java • Static variables and methods. • Method overloading • Constructor- types of constructor, constructor overloading • Use of this keyword • Garbage collection-finalize(), wrapper classes • Array, types of array, array of object • Collection-Iterator interface, List interface, ArrayList class, LinkedList class, Vector class and Stack class.	12
3	**Inheritance, packages and interfaces** • Inheritance- definition, syntax, types of inheritance • Method overriding, use of super keyword, difference between method overloading and overriding • Dynamic method dispatch • Abstract class and method, use of final keyword • Interface- defining and implementing interface, implementation of multiple inheritance using interface, difference between abstract class and interface. • Packages- Java API package, Defining and accessing user	12

	defined package	
4	**Exception Handling and Multithreading** • Concept of exception, difference between error and exception • Types of exceptions-checked and unchecked • Exception handling using try and catch block • Multiple catch block, finally block, throws keyword • User defined exception • Concept of multithreading in java, Difference between process and thread • Creating thread by extending Thread class and by implementing Runnable interface • Life cycle of thread,Thread class methods- start(), run(), yield(), suspend() ,resume(), sleep(), wait(), notify(), stop() • Thread synchronization	12

Reference books-

1. Herbert Schildt, Java2: The Complete Reference, Tata McGraw-Hill
2. Object Oriented Programming with JAVA Essentilas and Applications , Mc Graw Hill
3. Core and Advanced Java, Black Book- dreamtech
4. Programming with JAVA- E Balagurusamy

CHOICE BASED CREDIT SYSTEM
SEMESTER - V
B.Sc. Computer Science Entire Part-III
Course Code:DSE-502: Computer Science Paper-X
Course Title: C# Programming
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course outcome: After completion of this course student will be able to
1.Understand working of .Net Framework
2. Demonstrate concept of object oriented programming using C#

3. Study importance and applications of exception handling
4. Understand working of file handling in C#.

UNIT	Contents	Hours Allotted
1	**Dot Net Framework:** • Overview, component Architecture of .Net framework, • Features of .NET, Evolution of .net framework • Meta data and assembly • CLR, Managed and unmanaged code • MSIL, JIT Compiler, CTS, CLS • Compilation and execution process, NET base classes, namespace.	12
2	**C# Basics:** • Introduction to C#, Entry point method, command line arguments • Control statements, looping statements, Arrays, String • CSC.EXE, Different valid forms of main • Global stack and heap memory, reference type and data type • Type casting-Implicit and Explicit, Boxing and unboxing • Pass by value and pass by reference and out parameters.	12
3	**C# Object Oriented Concepts:** • Class, static and non-static methods • Delegate- Syntax, importance, example • Inheritance, Polymorphism, Interface, Abstract Class • Partial Class, DLL, Difference between DLL and EXE.	12
4	**Exception Handling and File I/O:** • Introduction to exception, Importance in C#, try, Catch, Finally blocks • Exception classes, Handling Exceptions • User define exceptions and System define exceptions. • Concept of File Handling, Importance • C# I/O Classes • File Stream Class, File operations using C#.	12

References:

1. C# 4.0 The Complete Reference Schildt Mc Graw Hill
2. Inside C# - By Tom Archer, Andrew Whitechapel (Microsoft Pub)
3. Programming in C#- E Balagurusamy

CHOICE BASED CREDIT SYSTEM

SEMESTER - V
B.Sc.Computer Science Entire Part-III
Course Code:DSE-503: Computer Science Paper- XI
Course Title: Software Engineering
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course outcome: After completion of this course student will be able to

1. Understand the problem domain to choose process models correctly.
2. Choose software projects using appropriate design notations.
3. Measure the product and process performance using various metrics.

4. Evaluate the system with various testing techniques and strategies
5. Able to analyze, design, verify, validate, implement, and maintain software systems.

Unit	Contents	Hours Allotted
1	**Software Engineering Fundamentals** • The importance of software, • software myths, software engineering paradigms, • Characteristics of good quality software • Software Process Models: Linear Sequential Model, Prototyping Model, RAD Model • Evolutionary Software Process Models: Incremental Model, Spiral Model , Component Assembly Model, • Analysis Concepts and Principles.	12
2	**Software Project Planning** • Software Project Planning • Size Estimation, Cost Estimation • Models - COCOMO, The Putnam Resource Allocation Model • Risk Identification and Projection: RMMM, • Project scheduling and Tracking • Software Design Process, Design Principles • Design Concepts: Effective Modular Design, Design Heuristics, Design Documentation (SRS), • Design Methods: Data Design, Architectural Design, Interface Design, Procedural Design.	12
3	**Software Testing** • Software Testing Fundamentals • White Box Testing, Black Box Testing • Software testing strategies • verification and Validation, • System Testing, Unit testing, Integration testing and Debugging • Implementation types • Software Maintenance, Maintenance Tasks.	12
4	**Unified Modeling Language (UML)** • Object- oriented concepts and principles • Unified Modeling Language, UML views • Basic structures and modeling classes, common modeling techniques, relationships, common mechanism • Advanced structured modeling, advanced classes and relationships, Interfaces, types and roles • Static diagrams- class diagram, object diagram, Component diagrams • Dynamic diagrams- Use case diagrams ,State diagrams, Interaction diagrams, Sequence diagrams.	12

Reference Books:

1. Roger S Pressman, Bruce R Maxim, "Software Engineering: A Practitioner's Approach", Kindle Edition, 2014.
2. Ian Sommerville," Software engineering", Addison Wesley Longman, 2014.
3. James Rumbaugh. MichealBlaha "Object oriented Modeling and Design with UML", 2004.
4. Ali Behforooz, Hudson, "Software Engineering Fundamentals", Oxford, 2009.
5. Charles Ritcher, " Designing Flexible Object Oriented systems with UML", TechMedia , 2008.

SEMESTER - V
B.Sc.Computer Science Entire Part-III
Elective CourseI
Course Code:DSE-504: Computer Science Paper-XII
Course Title: Machine Learning Part- I
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course outcome: After completion of this course student will be able to

1. Develop an appreciation for what is involved in learning models from data.
2. Understand a wide variety of learning algorithms.
3. Understand how to evaluate models generated from data.

Unit	Content	Allotted Hours
1	**Introduction to Machine Learning** • Introduction • Evolution of machine learning • Difference between AI and Machine learning • Developments in machine learning • Introduction to K-nearest neighbor method, different phases of predicative modeling	12
2	**Aspects of Machine Learning** • Definition of learning System • Goals and applications of machine learning • Aspects of developing a learning system: training data, concept representation, function approximation	12
3	**Machine Learning Modelling** • ML Modeling flow, How to treat Data in ML • Types of machine learning, performance measures • Bias-Variancde Trade-Off • Overfitting & Underfitting, Bootstrap Sampling, Bagging Aggregation	12
4	**Basic Probability and terms** • Rules of probability, permutations and combinations • Bayers theorem, Descriptive statistics, compound probability, conditional probability	12

Reference Books:

1. EthemAlpaydin, Introduction to Machine Learning, Second Edition
2. DAN.W. Patterson, Introduction to A.I and Expert Systems – PHI, 2007.
3. Rich & Knight, Artificial Intelligence – Tata McGraw Hill, 2nd edition, 1991.

SEMESTER - V
B.Sc.Computer Science Entire Part-III
Elective CourseI
Course Code:DSE-505: Computer Science Paper-XII
Course Title: Data Communication
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course outcome: After completion of this course student will be able to

1. Identify key considerations in selecting various transmission media in networks.
2. Familiar with switching and routing techniques in networking.
3. Understand different data communication modes.
4. Understand OSI model and networking protocols.

Unit	Content	Allotted Hours
1	**Data and signals** • Data and Signals: Introduction, Objectives, • Analog and Digital signals, Periodic Analog Signals, Digital Signals, • Transmission Impairment Attenuation, Distortion, Noise, Data Rate Limits, • Noiseless channel: Nyquist bit rate, Noisy channel: Shannon capacity, Performance, Bandwidth, Throughput, Latency, Bandwidth-delay product, • Shannon capacity Performance – types of Error – Error Detection – Error corrections.	12
2	**Introduction to Data Communication** • Introduction to Data Communication: Definition, components, characteristics, • Uses of computer networks for companies, • Protocol: Protocol standards, Transmission media: Introduction, Guided media: twisted pair cable, co-axial cable, fiber-optic, Unguided media (wireless) - radio waves, microwaves, infrared. • Switching: Introduction, Objectives, Circuit switched networks, Datagram networks, • Virtual circuit networks, • Router and Routing – Factors affecting routing algorithms - Routing algorithm -Approaches to routing	12
3	**Introduction to Data communication modes** • Data communication modes: Serial and Parallel, Simplex, Half duplex and full duplex, • Synchronous and asynchronous transmission, • Multiplexing - Types of Multiplexing - FDM versus TDM, • Parallel and serial Transmission – DTE/DCE/such as EIA-449, EIA-202 and X21 interface – Interface standards	12

4	**Introduction to Networking protocols and OSI model** • Introduction – Protocols in computer communications • The OSI model - OSI layer functions. • Integrated services digital networking (ISDN): Introduction – Background of ISDN - ISDN architecture – ISDN interfaces - Functional grouping – Reference points • ISDN protocol architecture - Broadband ISDN (B-ISDN) of ATM – Packet size – Virtual circuits in ATM – ATM cells – Switching – ATM layers – Miscellaneous Topics.	12

Reference books

1) Behrouz and forouzan - Introduction to Data Communication and Networking – 2 nd Edition – TMH- 2001. 2. Jean Walrand – Communication Networks (A first Course) – Second Edition – WCB/McGraw Hill – 1998.
2) Computer Network by Tanenbaum
3) Computer network – black
4) Data Communications and Networks, ACHYUT. S. GODBOLE, Tata McGraw-Hill Publishing Company, 2007.
5) Understanding communications and Networks, 3rd Edition, W.A. Shay, Thomson
6) Computer networks, A system Approach, 5th ed, Larry L Peterson and Bruce S Davie, Elsevier

CHOICE BASED CREDIT SYSTEM

SEMESTER - V
B.Sc.Computer Science Entire Part-III
Course Code:AECC-E: English Paper-III
Course Title: English for communication- III
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 02 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course outcome: After completion of this course student will be able to

Course Outcomes:			
COs	**After the completion of the course the student should be able to**	Bloom's Cognitive	
		Level	Descriptor
CO1	**comprehend** communication process, methods of communication and flow of communication in business context.	2	Understanding
CO2	**Apply** acquired LSRW skills into real life situations and in professional context	3	Applying
CO3	**Compose** effective business letters using standard language, style and structure	3	Applying

Unit	Contents	Hours Allotted
1	**Essentials of Communication:** • Communication basics: definitions, process, levels • Forms/methods: verbal and non-verbal • Barriers and solutions • Flow/channels in business communication • Cross cultural communication	12
2	**Basics of Effective Communication (Listening and Speaking):** • **Effective listening**: process of listening, types of listening, poor listening habits, strategies for effective listening • **Effective speaking**: various forms of speaking in business professional, art of public speaking	12
3	**Basics of Effective Communication (Reading, Writing, Thinking)** • **Effective reading**: need, types, methods/tips/strategies, comprehension • **Effective writing**: punctuation marks, precis writing (of technical, scientific, or industry oriented text), technical paragraph writing, email and blog writing • **Thinking:** Thinking as a learning skill	12
4	**Business Correspondence (Letter writing):**	12

	• Principles, elements • Layout (complete block, modified block, semi-block), • Types (enquiry and replies, order, claim and adjustment)	

Reference Books:

1. Communication Skills by Sanjay Kumar and Pushpa Lata, Oxford University Press.
2. Business Communication by Meenakshi Raman and Prakash Singh, Oxford University Press.
3. Technical Communication by Meenakshi Raman and Sangeeta Sharma, OUP.

CHOICE BASED CREDIT SYSTEM

SEMESTER - VI
B.Sc. Computer Science Entire Part-III
Course Code:DSE-601: Computer Science Paper- XIII
Course Title: Advanced Java
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course outcome: After completion of this course student will be able to

1. Develop GUI using Java
2. Handle Database connectivity using java
3. Develop dynamic web pages using servlet and JSP
4. Develop client-server application

Unit	Content	Allotted Hours
1	**Java Swing** • Introduction • Swing container classes - JFrame, JDialog • Swing component classes-JTextField, JTextArea, JButton, JComboBox,JLabel, JList, JMenuBar, JTabbedPane, JOptionPane, JPanel, JTree,JTable,JMenu • Layout Manager- FlowLayout, BorderLayout, GridLayout, GridBagLayout • Event Handling	12
2	**Java Database Connectivity** • Introduction • JDBC driver and its types • JDBC connection steps • JDBC API- DriverManager class, Connection interface, Statement interface, PreparedStatment interface and ResultSet interface • Connectivity with MySQL using JDBC • Simple JDBC program	12
3	**Java Servlet** • Introduction to servlet • Web terminology- static vs dynamic website, HTTP,HTTP request, Get vs Post, Container, Content Type • Life cycle of servlet • Servlet API- javax.servlet and javax.servlet.http • javax.servlet package interfaces(Servlet,ServletConfig, ServletContext), classes(GenericServlet) • javax.servlet.http-interfaces(HttpServletRequest,HttpServletResponse), classes(HttpServlet) • Introduction to Session , session tracking techniques • Cookies- types of cookies	12
4	**Java Server Pages** • Introduction to JSP	12

	• JSP vs Servlet • Life cycle of JSP • JSP scripting elements- JSP scriptlet tag, JSP expression tag, JSP declaration tag • JSP implicit objects • JSP directive elements • JSP action elements- jsp:forward, jsp:include • Simple JSP application	

Reference books-

1. Herbert Schildt, Java2: The Complete Reference, Tata McGraw-Hill
2. Object Oriented Programming with JAVA Essentilas and Applications , Mc Graw Hill
3. Core and Advanced Java, Black Book- dreamtech
4. Murach's Java Servlets and JSP

CHOICE BASED CREDIT SYSTEM

SEMESTER - VI
B.Sc. Computer Science Entire Part-III
Course Code: DSE-602: Computer Science Paper- XIV
Course Title: ASP.NET
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course outcome: After completion of this course student will be able to
1. Understand working of Asp.Net web application
2. Demonstrate Asp.Net server controls.
3. Study database operations using ADO.Net.
4. Understand importance and working of state management.

UNIT	Contents	Hours Allotted
1	**Introduction to ASP.Net:** • Web browser, web server • HTTP request response structure • HTML form elements, GET/POST method • Client side and Server side programming. • Web form life cycle, page events, Visual studio IDE.	12
2	**Server Controls:** • Textbox, Listcontrols, Linkbutton, • Imagemap, Image, Imagebutton,FileUpload • Calender, Literal control, Radiobutton, Checkbox • Validation Controls • Navigation controls- Menu, TreeView, SiteMapPath • Master Page, Sitemap, SitemapDatasource	12
3	**Asp.Net State Management:** • Cross page postback property of button • Response.Redirect, Server.transfer, Response.Write • **Client Side:** Hiddenfield control, View State, Cookies • **Server Side:** Session, Application, Global.asax.	12
4	**Database and ADO.Net:** • Sql Server Database. • Datacontrols- Gridview, Listview, FormView, DetailsView, Repeter, SqlDataSource • Introduction to ADO.Net, ADO.NET Architecture- Connection, command, data reader • Data adapter, data set • Understanding connected layer of ADO.NET and disconnected layer of ADO.NET	12

Reference:

1. ASP.NET Black Book- By Steven Holzner
2. Professional ASP.NET 2 –Wrox Series- Wallace B. McClure
3. Asp.Net using C#- Rajendra Salokhe
4. Asp.Net: The Complete Reference Schildt McGraw Hill

CHOICE BASED CREDIT SYSTEM

SEMESTER - VI
B.Sc.Computer Science Entire Part-III
Course Code:DSE-603: Computer Science Paper- XV
Course Title: Software Project Management
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course Outcomes: After completion of this course student will be able to

1. Implement the basics of Project Management.
2. Choose correct Scheduling Techniques as per the software.
3. Develop Team Development skills and reduce conflicts.
4. Implement various Software Quality Standards.
5. Using CASE tools, Software Re-Engineering for creating efficient softwares.

Unit	Contents	Hours Allotted
1	**Overview of Project Management** • Project Management – Definitions • Factors Influencing Project Management – Project Manager, Project Management Activities, Stakeholders; Project Communication; • Project Development Phases; • Project Charter; Statement of Work (SoW). • Project Planning: Tasks in Project Planning; • Work Breakdown Structures (WBS); • Planning Methods; • Development Life Cycle Models; A Generic Project Model.	**12**
2	**Scheduling Techniques and Conflict Management:** • Program Evaluation and Review Technique (PERT), Gantt Chart and critical Path Method (CPM), Automated Tools • Project Monitoring and Controlling: Project Status Reporting; • Project Metrics • Project Communication Plan & Techniques • Steps for Process Improvement. • **Team Development and Conflict Management:** Basic Concepts; Organization Types – Centralized-control team organization, Decentralized-control team organization, Mixed-control team organization.	**12**
3	**Software Configuration Management (SCM)** – Baselines, Software Configuration Items (SCI); SCM Process; Version Control; Change Control; Configuration Audit; Status Reporting; Goals of SCM.	**12**

	Software Quality Assurance: Software Quality Assurance Activities; Software Qualities; Software Quality Standards – ISO Standards for Software Organization, Capability Maturity Model (CMM), Comparison between ISO 9001 & CMM.	
4	**Computer Aided Software Engineering (CASE) Tools** • CASE Concepts • Classification of CASE Tools • Steps for CASE Tool Implementation • Integrated CASE Environments • Architecture of CASE Environment. • **Software Re-Engineering:** Software Maintenance Problems; Redevelopment vs. Reengineering; Business Process Reengineering; Software Reengineering Process Model; Technical Problems of Reengineering.	**12**

Reference Books:

1. Roger S Pressman, Bruce R Maxim, "Software Engineering: A Practitioner's Approach", Kindle Edition, 2014.
2. Ian Sommerville," Software engineering", Addison Wesley Longman, 2014.
3. Software Project Management by Edwin Bennatan.
4. Software Project Management by S.A. Kelkar.

4	**Neural Network** • Introduction to neural network • Biological inspiration • Perception learning & Binary Classification • Back propagation Learning, Object recognition • Natural Language Processing: Word sense disambiguation, Pronoun resolution, Machine translation, Tokenization, Regular Expression	12

Reference Books:

1. EthemAlpaydin, Introduction to Machine Learning, Second Edition
2. DAN.W. Patterson, Introduction to A.I and Expert Systems – PHI, 2007.
3. W.F. Clocksin and Mellish, Programming in PROLOG, Narosa Publishing House, 3rd edition, 2001.

CHOICE BASED CREDIT SYSTEM

SEMESTER - VI
B.Sc.Computer Science Entire Part-III
Elective Course II
Course Code:DSE-605: Computer Science Paper- XV
Course Title: Computer Networks
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course Outcomes: After completion of this course student will be able to

1. Familiar with network basics concepts like protocols, topology etc
2. Familiar with OSI layered model services
3. Understand with switching and routing concepts in networking technologies.
4. Familiar with network security concepts

Unit	Content	Allotted Hours
1	**Network Basics** • Network definition; network topologies; • network classifications; network protocol; • Layered network architecture; overview of OSI reference model; overview of TCP/IP protocol suite. • The telephone network fundamental of communication theory. • Asynchronous and synchronous transmission. • Transmission Media: Guided media - twisted-pair cable, coaxial cable, fiber-optic cable. Unguided media (wireless) - radio waves, microwaves, infrared. • Connection-oriented and connectionless Services, service primitives.	12
2	**Switching & routing concepts** • Switching and routing in network: Message switching, packet switching, packet routing. • Routing – characteristics, routing algorithms(strategies) – optimality principle, shortest path routing, flooding, distance vector routing, link-state routing, hierarchical routing, broadcast routing, multicast routing. Congestion control. And its prevention policies	12
3	**Protocols** • Goals of layered protocols, network design problems, OSI model and its all layer's services. Token passing – Token ring, Token bus, Token passing (priority systems). • ANSI Fiber Distributed Data Interface (FDDI), • TCP/IP : Introduction to TCP/IP and internetworking , operations related protocols and sockets, • IP address structure major features of IP. • IP data gram, major IP service, • TCP major features of TCP,	12

	• passive and active operant the transmission control blocks (TCB).	
4	**Physical Layer concept** • Physical Layer Basic Concepts - Bit rate, bit length, base band transmission, • Network Security- Introduction, • concept of cryptography, authentication protocols, • firewall, virtual private networks (VPN), • wireless security, email security, • web security- SSL, • Digital signature – symmetric key signature, • public key signature, and message digest	**12**

Reference:

1. Black C "Computer networks protocols, standards and Interface", prentice hall of India, 1996
2. stlling W, "Computer communication network" (4th Edition), prentice hall of India, 1993
3. Tanenbaum A.S. "Computer Network", prentice hall of India, 1981
4. Forouzan, "TCP/IP Protocol Suite", Tata McGraw Hill.
5. Walrand&Varaiya,"High Performance Communication Networks", 2/e, Elsevier", 2003
6. Youlu Zheng / Shakil Akhtar, "Networks for Computer Scientists and Engineers", Oxford University Press
7. James F. Kurose, Keith W. Ross, "Computer Networking – A Top-Down Approach Featuring the Internet", Fifth Edition, Pearson Education, 2009.
8. Nader. F. Mir, "Computer and Communication Networks", Pearson Prentice Hall Publishers, 2010.
9. Ying-Dar Lin, Ren-Hung Hwang, Fred Baker, "Computer Networks: An Open Source Approach",Mc Graw Hill Publisher, 2011.
10. Behrouz A. Forouzan, "Data communication and Networking", Fourth Edition, Tata McGraw – Hill,2011.

CHOICE BASED CREDIT SYSTEM

SEMESTER - VI
B.Sc.Computer Science Entire Part-III
Course Code: AECC-F: English Paper-IV
Course Title: English for Communication- IV
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 02 Teaching Scheme: Theory: 04 Lecture / Week Total Marks: 40

Course outcome: After completion of this course student will be able to

1. Comprehend the employment skills to have an effective first impression
2. Construct effective technical reports and prepare effective presentations
3. Use various interpersonal skills as per the need of situation and context

Unit	Contents	Hours Allotted
1	**Employment Communication:** • Covering letter and resume writing • Group discussion: purpose, nature, do's and don'ts, body language, tips and strategies • Interviews: types, FAQs, elements of preparation, do's and don'ts of winning job interviews, tips and techniques	12
2	**Technical report writing and presentation:** • Importance of reports, objectives, characteristics • Categories of report, • Formats (memo, letter) • Structure/elements of manuscript reports • Preparing effective presentations, • Techniques of effective collaborative/team presentations	12
3	**Essential Interpersonal Skills/Soft Skills** • Developing personality: various personality traits, types of personalities, tips • Self esteem: Know thyself • Positive attitude building • Emotional intelligence (EQ)	12
4	**Essential Interpersonal Skills/Soft Skills** • Teamwork • Leadership • Time management • Business ethics and values	12

Reference Books:

1. Communication Skills by Sanjay Kumar and Pushpa Lata, Oxford University Press.

2. Business Communication by Meenakshi Raman and Prakash Singh, Oxford University Press.
3. Technical Communication by Meenakshi Raman and Sangeeta Sharma, OUP.
4. Personal Development for Life and Work by Masters and Wallace, Cengage Learning.
5. Managing Soft Skills for Personality Development by B.N. Ghosh, Tata McGraw Hill.
6. Soft Skills by K. Alex, S. Chand and Company.

CHOICE BASED CREDIT SYSTEM

SEMESTER - VI
B.Sc.Computer Science Entire Part-III
Elective Course II
Course Code:DSE-604: Computer Science Paper- XVI
Course Title: Machine Lreaning Part-II
Total Contact Hours: 48 hrs (60 lectures of 48 min)
Credits: 03 Teaching Scheme: Theory: 04 Lectures / Week Total Marks: 40

Course Outcomes: After completion of this course student will be able to

1. Understand complexity of Machine Learning algorithms and their limitations;
2. Understand modern notions in data analysis oriented computing;
3. Apply common Machine Learning algorithms in practice and implementing their own;
4. Perform distributed computations;.

Unit	Content	Allotted Hours
1	**Emerging applications of machine learning** • Healthcare • Education • Transport and logistics • Public services • Finance • Pharmaceuticals • Energy • Legal sector • Manufacturing, Retail	12
2	**Machine learning methods** • Supervised machine learning algorithms • unsupervised machine learning algorithms • Semi-supervised machine learning algorithms • Reinforcement machine learning algorithms	12
3	**Canonical problems in machine learning** • Classification • Regression • Clustering • Dimensionality Reduction • Semi-supervised Learning • Reinforcement learning	12

Lab Course 9(Lab course based on DSC 501 &601)
Practical Program List

DSE 501- Core Java

1. Program on type casting.
2. Program on branching and looping statements.
3. Program on class, objects, field and method.
4. program on method overloading .
5. program on Constructor and constructor overloading.
6. Program on Array.
7. Program on Collection.
8. Program on Inheritance.
9. program on Packages.
10. program on abstract class.
11. program on interface.
12. Program on Exception Handling and user defined exception.
13. Program on multithreading(e.g. create and run multiple threads using different thread life cycle methods)

DSE 601- Advanced Java

1. Program to design simple frame using swing components like JButton, JLabel,JTextField
2. Program to design simple frame using swing components like JButton, JLabel,JTextField, JComboBox, JCheckBox
3. Program on JDBC.
4. Program to design simple Login Page application using JDBC.
5. Program on servlet.
6. Program to maintain session using cookies
7. Program to create simple JSP application to check given number is prime or not.
8. Program to create simple JSP application to print Fibonacci sequence for given number.
9. Program to create simple JSP application to check given string is palindrome or not.

Lab Course 10(Lab course based on DSC 502&602)
Practical Program List

DSE 502- C# programming

1. Program on parameter passing mechanism.
2. Program on command line argument.
3. Program on type casting.
4. Program on looping statements.
5. Program on control structure.
6. Program on DLL and EXE
7. Program on array.
8. Program on static and non-static methods.
9. Program on Inheritance.
10. Program on Interface.
11. Program on abstract class.
12. Program on partial class.
13. Program on exception handling- Arithmetic exception, Array exception, File Exception, Null Reference Exception.
14. Program on user define exception.
15. Program on File I/O functions

DSE 602- ASP.Net

1. Program on server controls
2. Program onSqlDataSource.
3. Program on data controls
4. Program on ADO.Net connected architecture.
5. Program on ADO.Net disconnected architecture
6. Program onResponse.Redirect.
7. Program on cross page posting.
8. Program on client side state management.
9. Program on server side state management.
10. Program to design master page for university website.

LAB-11- (Lab Course based on SEC-I & SEC-II)

SEMESTER - V
B.Sc. Computer Science Entire Part-III
Skill Enhancement Course – III
Course Code: SEC- III
Course Title: PHP Part I

Course outcome: After completion of this course student will be able to
1. Identify basic PHP syntax
2. Create basic PHP scripts
3. Know how to send data to the Web Browser
4. Apply variables, string, and constant to a PHP a script

Unit –I PHP Installation

- Installation of PHP
- Installation Of Apache
- Binding PHP to Apache
- XAMPP Installation
- XAMPP Control Panel Folder Structure
- Upgrading PHP in XAMPP
- Installing Multiple Version of PHP on Single machine in XAMPP
- PHP and Apache Configuration Files
- WAMP Installation
- WAMP menu and folders structure
- Executing PHP Programs on ellipse

Unit –II Introduction to PHP

- What is PHP ?
- What does PHP do?
- Benefits of using PHP MYSQL
- PHP Scripts Work
- PHP syntax
- First PHP Program
- Embed PHP in HTML / HTML in PHP
- Data Types ,variables, , PHP Constants type Casting ,operators,PHP strings

Unit-III Control Structure

- If Statement
- If …….. Else statement
- If…….. if else Statement
- Nested if statement
- Switch statement

Unit-IV Looping Structure

- For loop
- While loop
- Do……while loop
- For each loop

Reference Books

1. PHP Concepts Unleashed For Novice – Vol I by Dr. Poornima G. Naik (Author), Dr. Kavita S. Oza (Author)
2. PHP Concepts Unleashed For Novice – Vol II by Dr. Poornima G. Naik (Author), Dr. Kavita S. Oza (Author

SEMESTER - VI
B.Sc. Computer Science Entire Part-III
Skill Enhancement Course – IV
Course Code: SEC- III
Course Title: PHP Part- II

Course outcome: After completion of this course student will be able to

1. Create and call functions using PHP
2. Create functions that take arguments and return values
3. How error is handled using exception handling
4. Display and handle HTML forms within a single PHP script

Unit I Arrays in PHP

- Types of Arrays
  Indexed Arrays, Associative arrays, Multidimensional arrays
- Sorting Arrays
- Displaying contents of an Arrays in HTML table

Unit-II Function In PHP

- What is function?
- Syntax
- Conditional Functions
- Functions with parameters
- Function with Relive in Values
- Assigning Default values to function parameters
- Functions with static variables
- Passing Array to A Function and returning list
- Nested Functions
- Recursive functions
- Anonymous Functions
- Dynamic Function Calls
- Call Back function

Unit –III Exception Handling in PHP

- Error Handling
- Definition of Exception
- Standard Keywords
- General Structure
- Difference between Exception and error
- Uncaught Exception
- Rules Governing Exception Handling
- Predefined Exception
- Methods of Exception class
- Catching Multiple Exception

- Nesting try Blocks

Unit- IV Web Development in PHP

- Static and dynamic web pages
- Communication between HTML and PHP
- Difference between get and post requests
- HTML Special chars() function
- Guidelines in Designing a form
- Form validation
- Handling Multi- Valued form fields.
- Uploading a file in PHP.

Reference Books

1. PHP Concepts Unleashed For Novice – Vol I by Dr. Poornima G. Naik (Author), Dr. Kavita S. Oza (Author)
2. PHP Concepts Unleashed For Novice – Vol II by Dr. Poornima G. Naik (Author), Dr. Kavita S. Oza (Author)

Practical Program List

SEC III- PHP Part- I

1. Program to use echo and print statement in PHP .
2. Program on global and local variables in PHP.
3. Program on type casting in PHP.
4. Program on operators in PHP.
5. Program on string functions in PHP.
6. Program on different control structures.(if, if…else, nested if, switch)
7. Program on different looping structures.(for, while, do while, for each loop)

SEC IV- PHP Part- II

1. Program to create , initialize and display array elements .
2. Program on indexed array.
3. Program on associative array.
4. Program on multidimensional array.
5. Program on sorting array.
6. Program on user defined function.
7. Program on passing array to a function.
8. Program on recursive function.
9. Program on exception handling.
10. Program to create static and dynamic web page using PHP.
11. Program on form validation in PHP.
12. Program to upload file in PHP

Nature of PW (Project Work)

Project work guidelines:

1. Institute is expected to conduct Industrial visit to any computerized industry and students are supposed to submit the report based on same.
2. Project report has to be prepared with every aspects of software engineering.
3. Student has to present the demonstration of project concerned at the time of project viva-voce.
4. Project will have internal guide to supervise and monitor the progress of the project. The internal guide may assign the project to the student or within the group of student (maximum 2 students in a group) using MySQL as a back end and Visual Programming Using C# or Java Programming as front end.
5. There will be online demonstration of project work in the presence of the external examiner and it will be considered for the evaluation.

The distribution of 100 marks shall be as follows:

Project documentation	:	30 marks
On-line Presentation	:	20 marks
Project Based Viva-voce	:	30 marks
Industrial Visit Report	:	20 marks
Total Marks	**:**	**100 marks**

Project Work

Guidelines for Project:

Number of Copies: The student should submit two Hard-bound copies of the Project Report. (one copy for institute and one copy for student)

Acceptance/Rejection of Project Report:

The student must submit an outline of the project report to the college for approval. The college holds the right to accept the project or suggest modifications for resubmission.

Format of the Project Report:

The student must adhere strictly to the following format for the submission of the Project Report.

a. Paper:

The Report shall be typed on white paper, A4 size, for the final submission.

b. Typing:

The typing shall be of standard letter size, 1.5 spaced and on one side only. (Normal text should have Times New Roman Font size 12. Headings have bigger size i.e. up to size 14)

c. Margins:

- The typing must be done in the following margins:
- Left -----1.5 inch, Right ----- 1 inch
- Top -----1 inch, Bottom ----- 1 inch

Standard Project Report Documentation Format

a) Cover Page
b) Institute/College Recommendation
c) Guide Certificate
d) Declaration
e) Acknowledgement
f) Index
g) Chapter Scheme

1) Introduction to Project
   -Introduction
   -Existing System
   -Need and scope of Computer System
   -Organization Profile
2) Proposed System
   -Objectives
   -Requirement Engineering.
   • Requirement Gathering
   • SRS
3) System Analysis
   System Diagram
   • DFD
   • ERD
   • UML(if applicable)
4) System Design
   • Database Design
   • Input Design
   • Output Design
5) Implementation
   - System Requirements
   • Hardware
   • Software
   - User Guideline
   - Installation process

6) Outputs-

Screens and Reports (with valid Data)

7) Conclusion and Suggestions

- Conclusion
- Limitations (future enhancement)
- Suggestion

8) Bibliography:

Note : Minimum 4 to 6 reports are essential.

Shivaji University, Kolhapur
Bachelor of Computer Applications (BCA)
Draft CBCS Course Structure to be implemented from June 2020
Syllabus

1. Introduction:

Bachelor of Computer Application (3years) program / degree is a specialized program in Computer Applications. It builds the student on studies in applied use of computers and to become competent in the current race and development of new computational era.
The duration of the study is of six semesters, which is completed in three years. The program is based on Choice-based credit system comprising 144 credit points and intake for one batch is not more than 80 students.

2. Objective:
BCA offers the prequalification for professionals heading for smart career in the IT field, which measures up to international standards. On completing this course one can do higher studies such as MCA, MBA etc., in any UGC recognized universities or in any other reputed institution in India or abroad.

3. Eligibility: Candidate should have passed standard XII (10+2) in any stream or government approved equivalent diploma in Engineering/ Technology from any recognized Board or Vocational stream.
A candidate who has completed qualifying qualification from any Foreign Board /University must obtain an equivalence certificate from Association of Indian Universities (AIU).

4. PEO, PO and CO Mappings:
Program Educational Outcomes: After completion of this program, the graduates / students would:

PEO I	Technical Expertise	Implement fundamental domain knowledge of core courses for developing effective computing solutions by incorporating creativity and logical reasoning.
PEO II	Successful Career	Deliver professional services with updated technologies in Computer application based career.
PEO III	Interdisciplinary and Life Long Learning	Develop leadership skills and incorporate ethics, team work with effective communication & time management in the profession. Undergo higher studies, certifications and technology research as per market needs.

Program Outcomes (PO's):- After completion of program Students / graduates will be able to:

PO1: Apply knowledge of ICT in solving business problems.
PO2: Learn various programming languages and custom software.
PO3: Design component, or processes to meet the needs within realistic constraints.
PO4: Identify, formulate, and solve problems using computational temperaments.
PO5: Comprehend professional and ethical responsibility in computing profession.
PO6: Express effective communication skills.
PO7: Recognize the need for interdisciplinary, and an ability to engage in life-long learning.
PO8: Knowledge of contemporary issues and emerging developments in computing profession.
PO9: Utilize the techniques, skills and modern tools, for actual development process.

Course Outcome(s): Every individual course under this program has course outcomes (CO). The course outcomes rationally match with program educational objectives. The mapping of PEO, PO and CO is as illustrated below:

Program Educational Objectives	Thrust Area	Program Outcome	Course Outcome
PEO I	Technical Expertise	PO1,PO2,PO3,PO9	All Core and Lab courses
PEO II	Successful Career	PO4,PO5,PO6	All AEC courses
PEO III	Interdisciplinary and Life Long Learning	PO7,PO8	All Electives

5. Workload (Period/Lectures for each Course): For every semester 60 periods (60 minutes per period) are allotted to complete the syllabus of each Course (Subject).

6. Standard of Passing:

I. A candidate must obtain minimum 40% of the marks in each University, internal examination paper, lab course as well as mini and major project.
II. There shall be a separate head of passing in Theory, Internal, Lab Course and Project examination. However, ATKT rules shall be made applicable in respect of theory and lab courses (University Examination) only.
III. A candidate who fails in any number of subjects during semester – I & II shall admitted to B.C.A.-II (appear for semester –III & Semester IV examination).
IV. However the candidate shall not be admitted to B.C.A- III (Semester-V) unless he/she passed in all the subjects at B.C.A.-I (Semester-I & Semester-II).
V. A candidate who fails in any number of subjects during Semester-III & IV shall be admitted for B.C.A.-III & allowed to appear for Semester –V & VI examinations.
VI. For environmental studies Semester IV the candidate shall have to score 28 marks out of 70 marks theory paper and 12 marks out of 30 for project work.
VII. CCC 108 is noncredit course as per notification of university i.e. Democracy, Elections and Good Governance (Non Credit).

Gradation Chart:

Marks obtained	Numerical Grade (Grade Point)	CGPA	Letter Grade
Absent	0(Zero)		
<40	0 to 4	0.0 to 3.99	Fail
40-50	5	4.00 to 4.99	C
51-60	6	5.00 to 5.99	B
61-70	7	6.00 to 6.99	B+
71-80	8	7.00 to 7.99	A
81-90	9	8.00 to 8.99	A+
91-100	10	9.00 to 10.00	O(outstanding)

Note: i) Marks obtained > = 0.5 shall be rounded off to next higher digit.
ii) The SGPA & CGPA shall be rounded off to 2 decimal points.

Calculation of SGPA & CGPA

1. Semester Grade Point Average (SGPA) SGPA = Course credits x Grade Points obtained of a semester Course credits of respective semester

2. Cumulative Grade Point Average (CGPA) CGPA = Total credits of a semester x SGPA of respective semester of all semesters Total course credits of all semesters

7. Nature of Theory Question paper: Nature of question paper is as follows for University end semester examination

QUESTION PAPER PATTERN FOR ALL SEMESTERS

Duration: 3 Hours Total Marks – 70

Instructions: 1) Que.1 and Que. 6 are compulsory and attempt any three Questions from Que. No.2 to Que. No. 5.
2) Figures to the right indicate marks.

Qu.1)	
A. Multiple Choice Questions (10 questions for 1 mark each)	10
B. Give Reasons or Short answer question (Any two out of three)	10
Qu.2) Broad answer question	10
Qu.3) Broad answer question	10
Qu.4) Broad answer question	10
Qu.5) Broad answer question	10
Qu.6) Write notes on (Any Four out of Six)	20

8. Nature of Practical Question Paper:
There will be three questions of 15 Marks each, out of which student have to attempt any two Questions and 10 marks for journal and 10 marks for oral for 2 credit lab course and time duration is two hours.
For four credit lab course there will be four questions of 25 Marks each, out of which student have to attempt three questions and 10 marks for journal and 15 marks for oral and time duration is three hours.

Practical Examination conducted by the University appointed examiner panel of two members. The panel members have more than five years' experience as full time teacher.

9. Medium of Instruction: The medium of instructions shall be in English.

10. Teachers Qualification: As per rules and regulations of Shivaji University, Kolhapur and Govt. of Maharashtra.

11. Internal Marks Distribution:

1 Five Marks for Mid Tests.
2 Ten Marks for presentation or activity based learning or Group exercise(Number of students in Group are not more than six).
3 Five Marks for Assignments.
4 Five Marks for library activity/ designing apps or software or working model/ Field Work/online learning activity etc.
5 Five Marks for Attendance.(75% to 80%- 02 marks, 81% to 85 %- 03 marks, 86% to 90 %- 04 ,marks 91% to 100% - 5 mark)

12. Mini- Project

The Objective of mini project is, to make aware student with current technology to be used in IT industry. The language/platform of the mini-project to be selected from the subject studied in previous and present semester. The Group size of maximum four students can undertake mini project. Project Viva-Voce Examination will be conducted by the University appointed examiner panel of two members. The panel members have more than five years' experience as full time teacher.

13. Major Software Development Project:

The Objective of major project is to design and develop the live application with current technology to be used in various industries. The Group size of maximum three students can undertake major project. Project Viva-Voce Examination will be conducted by the University appointed examiner panel of two members. The panel members have more than five years' experience as full time teacher. The chairman for viva voce committee will be doctorate or faculty having more than ten years experience as full time faculty.

14. Fee Structure: As per University norms.

15. Requirements:

i) Core Faculty:

For First Year Sem I & Sem II - 1 Full Time Faculty and 1 Lab Assistant.
For Second Year Sem III & Sem IV - 1 Full Time Faculty.
For Third Year Sem V & Sem VI - 1 Full Time Faculty and 1 Lab Assistant.
Total – 3 Full Time Faculties and
Two Lab Assistants having qualification BCA/BCS/Diploma in Computer Engineering/PG DCA.

In addition there shall be visiting/CHB faculty drawn from academicians /professionals from different fields for AEC/DSE/GE Courses and AEC/DSE based lab courses.

ii) Non-Teaching Staff: One Clerk and 2 Peons.
iii) Computer Lab: Well-equipped networked Lab with backup facility, Application and system software's as per syllabi and internet facility.
iv) Library: The entire library fees collected from the students shall be invested on

library.

v) Class Room: At least 3 classrooms of seating capacity 80 students with LCD in which at least one Digital Classroom.

16. Structure of Syllabus:

BCA-I (Sem-I)

Course Code	Title of Paper	Credit	Internal	External	Total
CC 101	Fundamentals of Computer	4	30	70	100
CC 102	Introduction to Programming Using C	4	30	70	100
AEC 103	Principles of Management	4	30	70	100
AEC 104	Business Communication	4	30	70	100
AEC 105	Office Automation	4	30	70	100
CCL 106	Lab Course-I Based on CC 102	2	-	50	50
CCL 107	Lab course-II Based on AEC 105	2	-	50	50
CCC 108	Compulsory Civic Course (CCC)	-	-	-	-
		24	150	450	600

BCA-I (Sem-II)

Course Code	Title of Paper	Credit	Internal	External	Total
CC 201	DBMS	4	30	70	100
CC 202	Operating System	4	30	70	100
CC 203	Object Oriented Programming Using C++	4	30	70	100
AEC 204	Financial Accounting with Tally	4	30	70	100
AEC 205	Mathematical Foundations for Computer Applications	4	30	70	100
CCL206	Lab Course-III Based on CC201 and AEC 204	2	-	50	50
CCL207	Lab course-IV Based on CC 203	2	-	50	50
		24	150	450	600

BCA-II (Sem-III)

Course Code	Title of Paper	Credit	Internal	External	Total
CC 301	Web Technology	4	30	70	100
CC 302	Computer Network and Internet	4	30	70	100
CC 303	Data Structure using C	4	30	70	100
AEC 304	Elements of Statistics	4	30	70	100
AEC305	Human Resource Management and Materials Management	4	30	70	100
CCL 306	Lab Course-V Based on CC301	2	-	50	50
CCL 307	Lab Course VI based on CC303 & AEC 304	4	-	50	50
		24	150	450	600

BCA-II (Sem-IV)

Course Code	Title of Paper	Credit	Internal	External	Total
CC 401	RDBMS	4	30	70	100
CC 402	Software Engineering	4	30	70	100
CC 403	DOT NET Technology	4	30	70	100
AEC 404	Entrepreneurship Development	4	30	70	100
CCL 405	PHP	2	50	-	50
CCL 406	Lab Course-VII Based on CC401	2	-	50	50
CCL 407	Lab Course-VIII Based on CC403	2	-	50	50
CCL 408	Mini Project	2	-	50	50
		24	170	430	600

BCA-III (Sem-V)

Course Code	Title of Paper	Credit	Internal	External	Total
CC 501	Java Programming	4	30	70	100
CC 502	Data Warehousing and Data Mining	4	30	70	100
CC 503	IT Security	4	30	70	100
DSE 504	Elective-I 1. Python Programming 2. C# Dot Net 3. Ethical Hacking	4	30	70	100
GE 505	Elective-II 1. Digital Marketing 2. Management Information System 3. Knowledge Management	4	30	70	100
CCL 506	Lab Course-IX Based on CC501	2	-	50	50
CCL 507	Lab Course-X Based on DSE504	2	-	50	50
		24	150	450	600

BCA-III (Sem-VI)

Course Code	Title of Paper	Credit	Internal	External	Total
CC 601	Cloud Computing	4	30	70	100
DSE 602	Elective-I 1. Internet of Things (IoT) 2. Android Programming 3. R Programming	4	30	70	100
GE603	Elective-II 1. IT Management 2. ERP 3. M - Commerce	4	30	70	100
AEC 604	Soft Skills & Personality Development	2	50	-	50
AEC 605	Industrial Visit	1	25	-	25
CCL 606	Lab Course XI Based on DSE 602	4	-	100	100
CCL 607	Major Project	5	25	100	125
		24	190	410	600

Note: Students has to select any one course from the respective electives.

CC- Compulsory Courses **DSE- Domain Specific Electives**

GE- General Electives **AEC- Ability Enhancement Compulsory Courses**

CCL – Compulsory Courses Lab.

Credit Distribution Chart for BCA Program

Sr.	Particulars	Number of Courses	Total Credits	Percentage of Credits
1	CC- Compulsory Courses	29	93	65
2	GE- General Electives	02	08	5
3	DSE- Domain Specific Electives	02	08	5
4	AEC- Ability Enhancement Compulsory Courses	10	35	25
	Total	43	144	100

17. Syllabus:

BCA I (Sem I)

Course Code: CC 101	**Fundamentals of Computer**	**Credits: 04**	**Marks : 100**
Course Outcomes	After completion of this course students will be able to - 1. Understand basic concepts of computer. 2. Describe peripheral devices and number systems. 3. Understand operating environment 4. Demonstrate the use of Linux Operating system commands		

Unit No.	**Descriptions**	**No. of Periods**
I	**Introduction to Computers** Introduction to computer, Characteristics of Computers, Block diagram of computer, History of computers, Generations of computer, Applications of computer, Types of computers and features : Mini, micro, mainframe and super, Types of Programming Languages : Machine Languages, Assembly Languages and High Level Languages.	15
II	**Peripheral Devices and Number Systems** Types of Memory (Primary And Secondary) : RAM, ROM, Secondary Storage Devices (FD, CD, HD, Pen drive) , I/O Devices, Number Systems : Binary,Octal and Hexadecimal, Conversion from one base to another,	15
III	**Introduction to Software & Operating Environment** Introduction to software, Types of software: System, Application and utilities. Introduction to operating system, Types of O.S. , Functions of O.S., Files and Directories , Batch Files Windows Operating Environment, Features of Windows, Control Panel,Taskbar, Desktop, Windows Application, Icons, Windows Accessories : Notepad and Paintbrush	15
IV	**Linux** Introduction Linux, Features, Structure of Linux, File system, Linux Commands , Permission and inodes, I/O redirection, Pipes ,VI Editor .	15
	Books Recommended: 1. Computer fundamentals by Rajaraman 2. Computer fundamentals by P.K.Sinhaand PritiSinha 3. Computer fundamentals, architecture and organisation by B. Ram 4. Computer Today - Basandara	

Course Code: CC 102	Introduction to Programming using 'C'	Credits: 04	Marks : 100
Course Outcomes	After Completion of this course the student will be able to - 1. Able to implement the algorithms and draw flowcharts for solving Mathematical problem. 2. Ability to design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage. 3. Able to define data types and use them in simple data processing applications also he/she must be able to use the concept of array of structures and file Handling. 4. Develop confidence for self education and ability for life-long learning needed for computer language.		

Unit No.	Descriptions	No. of Periods
I	**Basics of Programming and Ubuntu OS** • Problem definition, problem analysis, Algorithms, flow chart, Debugging, Types of errors in programming, Documentation. • Basics of Linux Operating System(Ubuntu) and 'C' programming language • Introduction to GCC Compiler, • Data Types, Variable Declaration, Input/output Statement, Built-In Standard Library, C Program Structure, Vim Editor, writing the First 'c' Program, Compilation and Execution of C Program, Format Specifies and Escape Sequences. • **Branching Statements** -Introduction, if statement, if-else statement, Nested If-else, Switch case statement.	15
II	**Control Statements and Array** • Definition of Loop. • Types of looping statement. • Difference between while loop and do—while Loop, • Loop control Statement (break, continue),. • Infinite Loop. • Definition and declaration of array. • features of Array • Types of Arrays • Initialization of array • Memory representation of array. • Single Dimensional Array, • Two Dimensional Array, • Predefined String functions.	15
III	**User Defined Functions and Pointer** • Definition, declaration, prototype of function • Local and global variable, • User defined functions • Recursion, Storage classes. • Pointer Definition and Declaration,	15

	• Pointer Initialization, • Pointer arithmetic. • Arrays of Pointers, • Pointers and One and two dimensional Arrays, • Call by value and call by reference • Dynamic Memory Allocation	
IV	**Structures and File Handling** • Definition and declaration of structure, • Nested Structure, Array of structures, structure pointer, • passing structure to function, self- referential structure, • Definition and declaration, of union • Difference between Structure and Union • Concept of File ,Text and binary mode files, Opening and closing files-fopen() and fclose(), • File opening mode- read, write, append ,reading and writing string function gets(),puts()), Formatted input- scanf(), sscanf(), fscanf(), fread(), Formatted output- printf(), sprintf(), fprintf(), fwrite(). • Functions-fseek(), ftell(), fflush(), fclose(), rewind().	15
	Books Recommended: 1. The C Programming Language- By Brian W Kernighan and Dennis Ritchie 2. C Programming by E. Balgurusamy. 3. The GNU C Programming Tutorial -By Mark Burgess 4. Let us C- By Yashwant Kanetkar	

Course Code: ACE 103	**Principles of Management**	**Credits: 04**	**Marks : 100**
Course Outcomes	After completion of this course students will be able to - 1. Understand the influence of historical forces on current practice of management. 2. Understand frameworks in the four functions of management. 3. Understand leadership styles to anticipate the consequences of each leadership style 4. Be able to identify and apply appropriate management techniques for organizations; and 5. Understand social responsibility involved in business situations.		

Unit No.	**Descriptions**	**No. of Periods**
I	**Introduction to Management:** Definition of Management, nature and importance of management, Functions of Management, Levels of management, Role of Manager in Organization, Contribution of F.W. Taylor, Henry Fayol and Max Weber.	15
II	**Functions of Management :** Planning: Meaning, Definition & Nature, Steps in Planning Organising: Meaning, Definition & Classification. (Formal & Informal organization, Virtual organization.), Staffing: Meaning Definition & Functions. Controlling: Meaning, Steps and Types of Control.	15
III	**Leadership and Motivation :**Leadership: Meaning & Definition,	15

	Theories of Leadership, Qualities of Leadership & Types of Leaders Motivation: Meaning, definition & importance of motivation, Theories of motivation –Maslow's Hierarchy Theory, Herzberg's theory & Theory X & Y.	
IV	**Trends in Management** Management Information System: Meaning, Definition & Types of Information Management of Change: Meaning Definition & Forms or Types of Changes,Corporate Social Responsibilities.	15
	Books Recommended: 1. Principles of Management : T. Ramasamy 2. Management Concepts and Practices : Dr. Manmohan Prasad 3. Principles of Management- P. Subba Rao 4. Management –L.M.Prasad 5. Essential of Management by Kncotz & O' Donnel.	

Course Code: ACE 104	**Business Communication**	**Credits: 04**	**Marks : 100**
Course Outcomes	After completion of this course students will be able to - 1. Communicate in English in written as well as oral mode 2. Make presentations in English 3. Do effective business correspondence		

Unit No.	**Descriptions**	**No. of Periods**
I	**Communication Skills:** Concept, Objectives, Process of communication, Types of Communication- Verbal, Non verbal Barriers to effective communication, Overcoming the barriers Forms of Communication in an organization-Formal and Informal (Grapevine)	15
II	**Listening Skills:** Importance of listening in business communication, Difference between hearing and listening ,Concept of the listening process Active listening and passive listening,Barriers to effective listening Guidelines for effective listening	15
III	**Business Correspondence:** Business letters Essentials of a business letters, Parts of a business letter, Forms of a business letter,Types of business letters- Tenders, quotations , orders, sales, complaint ,Email correspondence	15
IV	**Presentation Skills :** Business presentations, Seminar presentations ,Strategies for effective presentations, Audio visual aids in presentation Delivery methods for presentations	15

	Books Recommended: 1. Essential Communication Skills, Shalini Agarwal 2. Business Communication , R. K. Madhukar 3. E-Mail: A Write It Well Guide: How to write and Manage E-Mail in the workplace- Janis Fisher Chan 4. The AMA Handbook of Business Letters – Jeffrey L. Seglin; Edward Coleman 5. On the Education of a man of Business- Arthur Helps 6. When Ideas Make Money – Sharmila Ganeshan 7. The Man Who E-mailed the World- Po Bronson, Reader's Digest, November 2000 8. Effective Writing : Improving Scientific, Technical and Business Communication, Christopher Turk; Kirkman **Websites:**1) https://www.pressreader.com/india/the-times-of-india-new-delhi-edition/20070122/281582351154787 **2)** https://www.entrepreneur.com/topic/business-communication	

Course Code: AEC 105	**Office Automation**	**Credits: 04**	**Marks : 100**
Course Outcomes	After completion of this course students will be able to - 1) Understand the components of office automation 2) Perform operations using MS Word and PowerPoint 3) Surf details through Internet 4) Understand and discuss about the use of Office Package and internet in daily life		

Unit No.	**Descriptions**	**No. of Periods**
I	**INTERNET & ADVANCED COMMUNICATION:** Internet and Web Browsers: Definition & History of Internet - Uses of Internet - Definition of WebAddressing-URL-Different types of Internet Connections; Dial up connection, Broad band (ISDN, DSL, Cable), Wireless (Wi-Fi, WiMax, Satellite, Mobile) naming convention, browsers and its types, internet browsing, searching - Search Engines - Portals - Social Networking sites-Blogs - viewing a webpage, downloading and uploading the website; Creating an email-ID, e-mail reading, saving, printing, forwarding and deleting the mails, checking the mails, viewing and running file attachments, addressing with cc and bcc.	15

II	**INTRODUCTION TO MS WORD:-** Working with Documents -Opening & Saving files, Editing text documents, Inserting, Deleting, Cut, Copy, Paste, Undo, Redo, Find, Search, Replace, Formatting page & setting Margins, Converting files to different formats, Importing & Exporting documents, Sending files to others, Using Tool bars, Ruler, Using Icons, using help, Formatting Documents - Setting Font styles, Font selection- style, size, colour etc, Type face - Bold, Italic, Underline, Case settings, Highlighting, Special symbols, Setting Paragraph style, Alignments, Indents, Line Space, Margins, Bullets & Numbering. Setting Page style - Formatting Page, Page tab, Margins, Layout settings, Paper tray, Border & Shading, Columns, Header & footer, Setting Footnotes & end notes – Shortcut Keys; Inserting manual page break, Column break and line break, Creating sections & frames, Anchoring & Wrapping, Setting Document styles, Table of Contents, Index, Page Numbering, date & Time, Author etc., Creating Master Documents, Web page. Creating Tables- Table settings, Borders, Alignments, Insertion, deletion, Merging, Splitting, Sorting, and Formula, Drawing - Inserting ClipArts, Pictures/Files etc., Tools – Word Completion, Spell Checks, Mail merge, Templates, Creating contents for books, Creating Letter/Faxes.	15
III	**INTRODUCTION TO OPEN OFFICE – WRITER:** What is Writer? The Writer interface, Changing document views, Moving quickly through a document, Working with documents, Using built-in language tools, Working with text, Formatting text, Formatting pages, Adding comments to a document, Creating a table of contents, Creating indexes and bibliographies, Working with graphics, Printing, Using mail merge, Tracking changes to a document, Using fields Linking and cross-referencing within a document, Using master documents, Classifying document contents, Creating fill-in forms	15
IV	**INTRODUCTION TO POWER POINT**: Introduction to presentation – Opening new presentation, Different presentation templates, Setting backgrounds, Selecting presentation layouts. Creating a presentation - Setting Presentation style, Adding text to the Presentation. Formatting a Presentation - Adding style, Colour, gradient fills, Arranging objects, Adding Header & Footer, Slide Background, Slide layout. Adding Graphics to the Presentation- Inserting pictures, movies, tables etc into presentation, Drawing Pictures using Draw. Adding Effects to the Presentation- Setting Animation & transition effect. Printing Handouts, Generating Standalone Presentation viewer. Open Office-Impress - Introduction – Creating Presentation, Saving Presentation Files, Master Templates & Re-usability, Slide Transition, Making Presentation CDs, Printing Handouts – Operating with MS Power Point files / slides	15
	Books Recommended: 1) Microsoft Office 2007 Bible - John 2) Walkenbach,HerbTyson,FaitheWempen,caryN.Prague,MichaelR.groh, PeterG.Aitken, and Lisa a.Bucki -Wiley India pvt.ltd. 3) Introduction to Information Technology - Alexis Leon, Mathews Leon, and Leena Leon, Vijay Nicole Imprints Pvt. Ltd., 2013. 4) A Conceptual Guide to OpenOffice 5) Computer & Internet Basics Step-by-Step - Etc-end the Clutter - Infinity Publishing 6) Open Office Basic: An Introduction **Websites:** 1) http://windows.microsoft.com/en-in/windows/msoffice-basics-all-	

	topics 2) https://wiki.openoffice.org/wiki/Documentation 15. https://documentation.libreoffice.org/assets/Uploads/Documentation/en/GS6.0/GS60-GettingStartedLO.pdf	

Course Code: CCL 106	**Lab Course –I Based on CC102**	**Credits: 02**	**Marks : 50**
Course Outcomes	After completion of this course students will be able to - 1. Understand and trace the execution of programs written in C language. 2. Write the C code for a given algorithm 3. Implement Programs with pointers and arrays, perform pointer arithmetic and file handling.		

	List of Practical's:
Sr. No.	**Description**
1	Write a program to accept 5 subject marks and calculate total marks, percentage and grade of student.
2	Write a program to input a number and find the given number is Odd or Even.
3	Write a program to input the day number and display day of week.
4	Write a program to find the sum of first n natural numbers.
5	Write a program which display following output- A B C D E A B C D A B C A B A
6	Write a program to accept the range and generate Fibonacci Series.
7	Write a program to find given number is Armstrong or not.
8	Write a program to find prime numbers between given range
9	Write a program to sort the numbers in ascending and descending order using array.
10	Write a program to add two Matrices; Use two Dimensional arrays

11	Write a program to find the product of given two matrices.
12	Write a function which adds three number and display output on the screen.
13	Write a function which calculate cube of given number.
14	Write a program which swap two number using a) call by value and b)call by reference.
15	Write a program which create student structure which accept stud rollno ,student name, address ,subject marks ,percentage and display same on screen.
16	Write a program to separate even and odd numbers available in file.
17	Write a program to count the no. of words in a given text file.
18	Write a program to remove blank lines from a file.
19	Write a program to copy content of one file into another file.
20	Write a file handling program which accept student information store it into disk file using binary mode.

Course Code: CCL 107	**Lab Course-II Based on AEC 105**	**Credits: 02**	**Marks : 50**
Course Outcomes	After completion of this course students will be able to - 1) Use internet and internet tools. 2) Perform operations using MS Word and PowerPoint 3) Create business presentations using PowerPoint		
	List of Practical's:		
Sr. No.	**Description**		
1	Searching for a web site / application / text documents viewing and downloading.		
2	Create an E-mail account, Retrieving messages from inbox, replying, attaching files filtering and forwarding		
3	Preparing a Govt. Order / Official Letter / Business Letter / Circular Letter Covering formatting commands - font size and styles - bold, underline, upper case, lower case, superscript, subscript, indenting paragraphs, spacing between lines and characters, tab settings etc.		
4	Preparing a newsletter: To prepare a newsletter with borders, two columns text, header and footer and inserting a graphic image and page layout.		
5	Creating and using styles and templates To create a style and apply that style in a document To create a template for the styles created and assemble the styles for the template.		
6	Creating and editing the table To create a table using table menu To create a monthly calendar using cell editing operations like inserting, joining, deleting, splitting and merging cells To create a simple statement for math calculations viz. Totaling the column.		
7	Creating numbered lists and bulleted lists To create numbered list with different formats (with numbers, alphabets, roman letters) To create a bulleted list with different bullet characters.		
8	Printing envelopes and mail merge. To print envelopes with from addresses and to		

	addresses To use mail merge facility for sending a circular letter to many persons To use mail merge facility for printing mailing labels.
9	Using the special features of word To find and replace the text To spell check and correct. To generate table of contents for a document To prepare index for a document
10	Create an advertisement Prepare a resume. Prepare a Corporate Circular letter inviting the share holders to attend the Annual Meeting.
11	Creating a new Presentation based on a template – using Auto content wizard, design template and Plain blank presentation.
12	Creating a Presentation with Slide Transition – Automatic and Manual with different effects.
13	Creating a Presentation applying Custom Animation effects – Applying multiple effects to the same object and changing to a different effect and removing effects.
14	Creating and Printing handouts.

Bachelor of Computer Applications (BCA)

BCA I (Sem II)

Course Code: CC201	Database Management System	Credits: 04	Marks : 100
Course Outcomes	After completion of this course students will be able to - 1) Describe the basic concepts of DBMS and various databases used in real applications 2) Demonstrate the principles behind systematic database design approaches. 3) Design the database structure by applying the concepts of Entity-relational model and Normalization. 4) Learn MS-Access for database creation and handling transactions.		

Unit No.	Descriptions	No. of Periods
I	**Introduction of DBMS** : Basic Concept (Data Vs. Information, Database), Definition of DBMS, Needs and Features of DBMS, Comparison of file processing system with DBMS, functions of DBMS, advantages and disadvantages of DBMS, Structure of DBMS, Architecture of database system, Schema, Subschema, Data abstraction, data independence, , data dictionary, users of databases.	15
II	**Data Models**: Introduction, definition, features of data models, DFD, Object based data models- Entity Relationship Model, Cardinality; Record based models- Hierarchical Model, Network Model, Relational Model and Physical Data Models. Keys: Primary key, foreign key, candidate key, super key, unique key. **Normalization:** Concept of normalization, advantages, First NF, Second NF, Third NF, examples of normalizations	15
III	**Database Management through Ms-Access:** Introduction of Ms-Access, features, database creation, table creation, insert records, queries, forms and report creation. **Case Study:** Normalized database design system for- Library management system, Inventory management system etc. **SQL:** Introduction of SQL, features, SQL data types, DDL commands- create table, describe table, alter table, drop table commands etc., DML-insert, delete, update commands etc, DQL commands- All select commands, aggregate functions, order by clause.	15
IV	**Organization of Database System:** Introduction of file, file types, organization of file- heap file organization, serial file organization, sequential, index sequential file, random access file (direct access file), Types of Database System: centralized database system, client-server system, distributed database system.	15
	Books Recommended: 1) Database System Concept – Henry korth and A. Silberschatz	

	2) Fundamentals of Database System- Ramez Elmasri, Shamkant B. Navathe(Pearson) 3) Database Management System- Raghu Ramkrishnan, Gehrke (McGraw Hill) 4) SQL, PL/SQL The Programming Language Oracle :- Ivan Bayross, BPB Publication 5) Introduction to SQL by Reck F. van der Lans by Pearson 6) Database Management System- R. Panneerselvam 7) Ms-Office Complete reference	
	Web References: 1) https://www.oreilly.com/library/view/relational-theory- 2) https://en.wikipedia.org/wiki/Database 3) https://hackr.io/blog/dbms-normalization 4) https://en.wikipedia.org/wiki/Database_normalization	

Course Code: CC202	**Operating System**	**Credits: 04**	**Marks : 100**
Course Outcomes	After completion of this course students will be able to - 1) Possess knowledge of Operating Systems and their types. 2) Apply the concept of a process and scheduling algorithms. 3) Realize the concept of deadlock and different ways to handle it. 4) Understand various memory management techniques and file system.		

Unit No.	**Descriptions**	**No. of Periods**
I	**Introduction of Operating System-** Definition, Objectives, Functions, Generations of OS, Types of OS (Batch, Multiprogramming, Time Sharing, Real time, Distributed, Personal, Mobile). OS Structure (Monolithic, Layered, Microkernel, Exokernel, Client-Server).	**15**
II	**Process Management –** Process Management- Introduction to Processes, Process Model, Process creation, Process termination, Process hierarchy, Process states.	**15**
III	**Memory Management-** Memory Management- Introduction to memory management, Requirements (Relocation, Protection, Sharing, Logical organization, Physical organization). Memory partitioning- Fixed partitioning, Dynamic partitioning, Paging, Segmentation. Concept of Virtual memory.	**15**
IV	**File System-** Files & File system, File structure, File types, File access, File attributes, Basic file operations. Directories- Single-level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.	**15**
	Books Recommended: 1. Modern Operating Systems, Andrew S Tanenbaum, 3rd Edition, PHI, 2010. 2. Operating Systems, Achyut S Godbole, 2nd Edition, McGraw Hill Publications.	

	3. Operating Systems, Internals & Design Principles, William Stalling, 6th Edition, .Pearson Publication, 4. Operating System, Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne, 2008 Operating System, Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne, 7th Edition,2004	

Course Code: CC 203	**Object Oriented Programming Using C++**	**Credits: 04**	**Marks : 100**
Course Outcomes	After completion of this course students will able to - 1) Understand object-oriented programming and advanced C++ concept. 2) Apply the concepts of object, classes and constructor. 3) Design C++ Programs based on object, class, inheritance, abstraction, encapsulation, dynamic binding and polymorphism. 4) Implement concept of polymorphism in program.		

Unit No.	**Descriptions**	**No. of Periods**
I	**INTRODUCTION TO OOP** • Difference between POP & OOP • Structure of C++ Program • Basic Concepts of OOP – Objects, Classes, Data Abstraction and Data Encapsulation, Inheritance, Polymorphism, Dynamic Binding, Message Passing • Benefits & Features of OOP • Data types, Keywords and Operators • Control Structure – Conditional and Looping	15
II	**OBJECT, CLASSES & CONSTRUCTOR** • Class Definition, Function Definition and Declaration • Arguments to a Function - Passing Arguments to a Function, Default Arguments • Calling Functions, Inline Functions • Scope Rules of Functions and Variables • Member Function Definition – Inside class and Outside the class using scope Resolution Operator • Accessing Members from Object(S) • Static Class Members - Static Data Member, Static Member Function • Friend Function and Friend Classes • Declaration and Definition of a Constructor & Destructor	15
III	**INHERITANCE** • Concept of Inheritance • Base Class & Derived Class	15

	• Types of Inheritance – Single, Multiple, Hierarchical, Multilevel, Hybrid Inheritance • Dynamic Memory Allocation / Deallocation using New and Delete Operator	
IV	**POLYMORPHISM** • Concept of Polymorphism • Static Polymorphism and Dynamic (Compile time) Polymorphism • this pointer • Pointers to Derived Classes • Virtual Functions • Pure Virtual Function	15
	Books Recommended: 1) The C++ Programming Language, 4th Edition by Bjarne Stroustrup 2) Object Oriented Programming with C++ by E. Balagurusamy 3) Let Us C++ by Yashavant P. Kanetkar 4) C++: The Complete Reference by Herbert Schildt	

Course Code: AEC 204	**Financial Accounting with Tally**	**Credits: 04**	**Marks : 100**
Course Outcomes	After completion of this course students will able to – 1. Use basic accounting terminology, procedures and systems of maintaining accounting records. 2. Understand financial statements 3. Learn to create company, enter accounting voucher entries and also print financial statements, etc. in Tally. 4. Demonstrate MIS reports in Tally ERP.		

Unit No.	**Descriptions**	**No. of Periods**
I	**Introduction to Financial Accounting** Meaning and Definition of Financial Accounting, Objectives of Accounting, Various users of Accounting Information, Accounting Terminologies, Accounting Concepts and Conventions, Double entry system, Types of Accounts and Golden rules of accounting. Books of Prime Entry, Subsidiary Books and Ledger Creation.	**15**
II	**Preparation of Financial Statements** Trial Balance – Meaning, Definition, purpose and features, preparation of Trial Balance. Final Accounts – Introduction, Objectives of Final Accounts, Adjustments before Preparing Final Accounts, Preparation of Trading Account, Profit and Loss Account, Balance Sheet.	**15**
III	**Introduction to Tally** Tally History and Journey, Difference between manual accounting v/s computerised accounting, Tally features, Tally Fundamentals - Company Data – Gateway of Tally, Creating and Maintaining a Company, Loading a Company, F11: Company Features, F12: Configuration. Voucher Entry, Inventory - Stock Groups, Stock Categories, Stock Items, Units of Measurement, Bills of Materials, Batches & Expiry Dates.	**15**

IV	**Report Generation in Tally** Printing – Printing Configuration for vouchers, printing reports – Profit and Loss A/C, Balance Sheet, Inventory, Interest Calculations, Day Book etc. Data Management – Backup & restore, Split a Company, Import Data, Export of Data, E-Capabilities, Tally ODBC. Introduction to GST, Objectives of GST.	15
	Books Recommended: **1.** Anthony, RN. and Reece. J.S.: Accounting Principles: Richard Irwin Inc. **2.** Gupta. R.L.and Radhaswamy. M: Financial Accounting; Sultan Chand and Sons, New Delhi. **3.** Shukla. M.C., Grewal T.S., and Gupta, S.C.: Advanced Accounts: S. Chand & Co. New Delhi. **4.** Advance Accountancy:- Maheshwari **5.** Advance Accountancy:- R.L.Gupta **6.** Computerized Financial Accounting Using Tally - Rajan Chougale. **Websites** 1) www.accountingcoach.com 2) www.futureaccountant.com	

Course Code: AEC 205	**Mathematical Foundations For Computer Applications**	**Credits: 04**	**Marks : 100**
Course Outcomes	After completing this course, students should demonstrate competency in the following skills: 1) Basic knowledge of set theory, functions and relations concepts, matrix needed for designing and solving problems. 2) Construct simple mathematical proofs and possess the ability to verify them. 3) Write an argument using logical notation and determine if the argument is valid or is not valid. 4) Use graph algorithms to solve problems.		

Unit No.	**Descriptions**	**No. of Periods**
I	**SETS** 1.1 Introduction. 1.2 Methods of describing of a set: Tabular form, Set builder form. 1.3 Finite set, Infinite set, Empty set, Subset, Universal set, Equal sets, Disjoint sets, Complementary set. 1.4 Operation on Sets: Union of sets, Intersection of sets, Difference of sets, Examples. 1.5 De Morgan's Laws (without proof). 1.6 Venn diagram, Examples. 1.7 Cartesian product of two sets, Examples. 1.8 Idempotent laws, Identity laws, Commutative Laws, Associative laws, Distributive laws, Inverse laws, Involution laws. 1.9 Duality. 1.10 Computer Representation of sets and its operations. 1.11 Relations and Functions: Introduction, Operations on Functions, Injective, surjective and bijective functions	15

II	**Logic** 2.1 Introduction. 2.2 Definition: Statement (Proposition). 2.3 Types of Statements: Simple and compound statements. 2.4 Truth values of a statement. 2.5 Truth Tables and construction of truth tables. 2.6 Logical Operations: Negation, Conjunction, Disjunction, Implication, Double Implication. 2.7 Equivalence of Logical statements. 2.8 Converse, Inverse and Contra positive. 2.9 Statement forms: Tautology, Contradiction, and Contingency. 2.10 Duality, Laws of logic: Idempotent laws, Commutative laws, Associative laws, Identity laws, Involution laws, Distributive laws, Complement laws, De Morgan's laws. 2.11 Argument: Valid and Invalid arguments. 2.12 Examples based on above.	**15**
III	**Matrices** 3.1 Introduction. 3.2 Types of matrices: Row matrix, Column matrix, Null matrix, Unit matrix, Square Matrix, Diagonal matrix, Scalar matrix, Symmetric matrix, Skew - symmetric matrix, Transpose of a matrix, 3.3 Definition of Determinants of order 2nd & 3rd and their expansions 3.4 Singular and Non-Singular Matrices 3.5 Algebra of Matrices: Equality of matrices, Scalar Multiplication of matrix, Addition of matrices, Subtraction of matrices, Multiplication of matrices. 3.6 Elementary Row & Column Transformations 3.7 Inverse of Matrix (Using Elementary Transformations) 3.8 Examples based on above.	**15**
IV	**Graphs** 4.1 Introduction 4.2 Simple graph, Multi graph, Pseudo Graph 4.3 Digraph 4.4 Weighted Graph 4.5 Degree of Vertex, Isolated Vertex, Pendant Vertex. 4.6 Walk, Path, Cycle. 4.7 Types of Graph: Complete, Regular, Bi-Partite, Complete Bi-partite. 4.8 Matrix Representation of Graph: Adjacency and Incidence Matrix. 4.9 Operation on Graph: Union, Intersection, Complement. 4.10 Examples based on above.	**15**
	Reference Books: 1. Discrete Mathematics & Structures by Satinder Bal Gupta, University Science Press 2. Fundamental Approach to Discrete Mathematics by D. P. Acharjya, Sreekumar, New Age International Publishers 3. Discrete Mathematical Structures by Kolman, Busby, Ross, Pearson Education Asia 4. Matrices by Shantinarayan, S. Chand & Co. New Delhi 5. Discrete Mathematics by Schaum Series 6. Discrete Mathematics by K D Joshi 7. David Makinson, "Sets, Logic and Maths for Computing", Springer Indian Reprint, 2011. 8. Kenneth H. Rosen, "Discrete Mathematics and Its Applications", Tata McGraw Hill, 4th Edition, 2002. 9. Trembley, J.P. and Manohar, R, "Discrete Mathematical Structures with Applications to Computer Science", Tata McGraw Hill, New Delhi, 2007.	

Course Code: CCL 206	Lab Course-III Based on CC201 and AEC 204	Credits: 02	Marks : 50
Course Outcomes	After completion of this course students will be able to - 1) Use MS-Access DBMS and design database 2) Perform operations on data using MS access features 3) Create company using Tally ERP 4) Perform accounting using Tally ERP		

	List of Practical's:
Sr. No.	**Description**
1	Write procedure for creating database in Ms-Access.
2	Establish relationship between tables and write steps for it.
3	Generate form in Ms-Access and write steps in detail.
4	Create reports using different queries based on multiple tables and write steps in detail for it.
5	Lab assignment based on Case Studies **a)** Library system: **b)** HR Management System **c)** Inventory Management System Design normalized data structures with appropriate constraints. (at least 5 tables for each system), Design forms, Create different query using query wizard, Create at least 3 reports using report wizard (at least 5 records)
6	Practical's based on Tally ERP a) Company creation, features and configuration b) Ledger creation ,group creation c) Creating masters and recording day to day transactions d) Allocation of tracking expenses and income e) Management of purchase, sales and taxes f) Reports

Course Code: CCL 207	Lab Course-IV Based on CC 203	Credits: 02	Marks: 50
Course Outcomes	After completion of this course students will be are able to - 1) Understand the difference between the top-down and bottom-up approach 2) Describe the object-oriented programming approach in connection with C++ 3) Apply the concepts of object-oriented programming 4) Illustrate the process of data file manipulations using C++		

	List of Practical's:
Sr. No.	**Description**
1	Write a simple program (without Class) to use of operators in C++.
2	Illustrating Control Structures.
3	Write a program to create a class and creating an object.
4	Illustrating different Access Specifiers.
5	Write a oop program to demonstrate static data member.
6	Demonstrate arguments to the function.
7	Illustrating inline function.
8	Define Member function-outside the class using Scope Resolution Operator.
9	Illustrating friend class and friend function.
10	Create constructors – default, parameterized, copy.
11	Destructor.

12	Dynamic Initialization of Object.
13	Illustrating Inheritance – single, multiple and multilevel.
14	Perform static and dynamic polymorphism.
15	Demonstrate virtual & pure virtual function.

18. Course Equivalence:

Semester- I

Paper No	Old Syllabi Course Title	Course Code	Revised Syllabi Course Title
101	Fundamentals of Computers	CC 101	Fundamentals of Computer
102	Programming in 'C' Part-I	CC 102	Introduction to Programming Using C
103	Principles of Management	AEC 103	Principles of Management
104	Financial Accounting	AEC 204	Financial Accounting with Tally
105	Office Management And Communications	AEC 104	Business Communication
106	Lab Course Based on Paper-101	CCL 107	Lab course-II Based on AEC 105
107	Lab Course Based on Paper-102	CCL 106	Lab Course-I Based on CC 102

Semester- II

Paper No	Old Syllabi Course Title	Course Code	Revised Syllabi Course Title
201	Software Packages	AEC 105	Office Automation
202	Programming in 'C' Part-II	CC 102	Introduction to Programming Using C
203	Bank Management	-	-
204	Financial Accounting with Tally	AEC 204	Financial Accounting with Tally
205	Principles of Marketing		-
206	Lab Course Based on Paper-201, 204	CCL206	Lab Course-III Based on CC201 and AEC 204
207	Lab Course Based on Paper-202	CCL207	Lab course-IV Based on CC 203

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Estd. 1962
NAAC 'A++' Grade

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शिवाजी विद्यापीठ, कोल्हापूर – 416004.
दुरध्वनी (ईपीएबीएक्स) २६०९००० (अभ्यास मंडळे विभाग– २६०९०९४)
फॅक्स : ००९१-०२३१-२६९१५३३ व २६९२३३३.e-mail:bos@unishivaji.ac.in

Ref../SU/BOS/Com & Mgmt./ No 0 0 3 1 7 **Date : 16/09/2021**

To,

The Principal
All Affiliated (Commerce & Management) Colleges/Institutions,
Shivaji University, Kolhapur

Subject : Regarding Syllabi of BCA Part-II (Sem-III/IV) Choice Based Credit System (CBCS) degree programme under the Faculty of Commerce & Management.

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the revised syllabi of **BCA Part-II (Sem-III/IV) Choice Based Credit System (CBCS)** under the Faculty of Commerce & Management.

This syllabi shall be implemented from the academic **year 2021-2022** onwards. A soft copy containing the syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in (Student - Online Syllabus).

The question papers on the pre-revised syllabi of above mentioned course will be set for two examination These chances are available for repeater students, if any.

You are therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully,

Dy. Registrar

Encl : As above

Copy to,

1. I/c Dean, Faculty of Commerce & Management
2. Chairman, Board of Studies

} for information

3. Director, BOEE
4. Appointment Section
5. P. G. Admission Section
6. B.Com and O. E. 1 Section
7. Affiliation Section (U.G./P.G.)
8. Computer Center/I.T.
9. Eligibility Section
10. Distance Education
11. P.G. Seminer Section

} for information and necessary action.

SHIVAJI UNIVERSITY, KOLHAPUR.

Estd. 1962

NAAC "A++" Grade

Faculty of Commerce and Management

Syllabus For

BCA Part II (Sem III & IV) (CBCS)

(To be implemented from June 2021 onwards)

(Subject to the modifications that will be made from time to time)

BCA-II (Sem.-III)

Course code: CC 301	Web Technology	Credit :04	Marks:100
Course Outcomes	After completion of this course student should be able to- 1. Understand basics of website and web development life cycle. 2. Design website using HTML and CSS 3. Implement client side scripting for website development 4. Understand importance and working of HTML5		
UNIT No.	**Description**		**No. of Periods**
I	**Introduction - Internet & Website** 1.1 Internet-Basics, Internet Protocols(HTTP,FTP,IP) 1.2 World Wide Web(WWW) 1.3 HTTP, DNS, IP Address 1.4 Working of Website 1.5 Web Browser, Web Server, Types 1.6 Types of Websites(Static and Dynamic Websites) 1.7 Web Development lifecycle 1.8 Basics of web hosting		15
II	**HTML and CSS** 2.1 Introduction to HTML, History, Features 2.2. HTML tags & attributes 2.3 HTML Form elements 2.4. HTML Frameset 2.5. Limitations of HTML 2.6 Basics of CSS, Syntax 2.7 Types of CSS, Importance of CSS 2.8. CSS Selectors-Group, id, class 2.9. CSS properties- Border, background, list, image, margins 2.10. Advantages and limitations of CSS		15
III	**JAVA Script** 3.1 Introduction to JavaScript. 3.2 Difference between client side and server side scripting. 3.3 Identifier & operators 3.4 Control structure 3.5. Dialog boxes 3.6 Functions 3.7 Event Handling 3.8 Objects 3.9 Form Validation		15
IV	**HTML 5** 4.1 Introduction to HTML5 4.2. Difference between HTML and HTML5 4.3 HTML5- Attributes, events 4.4 HTML5 canvas 4.5.HTML5 Audio & Video		15

	4.6 HTML5 Drag & Drop 4.7 Web Forms 2.0	
	Reference Books: **1.** Complete HTML-Thomas Powell 2. HTML and JavaScript–Ivan Bayross 3. Javascript:The Complete Reference by ThomasPowell, FritzSchneider 4. Introducing HTML5-BruceLawson,RemySharp 5.HTML BlackBook- Steven Holzner 6.HTML5&CSS3- Castro Elizabeth 7thEdition 7.Web Development and Design Foundations with HTML5- Terry A. Felke-Morris	

BCA-II (Sem III)

Course code: CC 302	Computer Network and Internet	Credit :04	Marks:100

Course Outcomes	After completion of this course student should be able to- 1. Understand the concept of computer network. 2. Identify different components required to build different networks. 3. Recognize the functions of network layers and different protocols. 4. Discuss the important features of the Internet and Web.	
UNIT No.	**Description**	**No. of Periods**
I	**Introduction to Computer Network:** Definition of a Computer Network, concept of Network, Components of a computer network, use of computer networks. Simplex, Half duplex & Full duplex. Components of computer networks-files server, workstation. Network devices-hub, repeater, bridge, router, gateway. Classification of computer network- geographical spread (LAN,WAN, MAN).	15
II	**Data Transmission & Topologies:** Data transmission-serial and parallel transmission. Data communication-analog and digital transmission. Transmission Medias- I) Guided media - twisted pair, coaxial cable, optical fibers. II) Unguided media-radio waves, microwaves, infrared. Topologies- bus, star, ring, mesh, tree.	15
III	**TCP/IP and OSI Model:** **Introduction-** Concept of Error detection & control code. Flow control- Stop and Wait protocol, sliding window protocol. Routing & Routing algorithms-shortest path, flooding, distance vector. Switching techniques- circuit, packet & message switching, Connection oriented and connectionless services. **TCP/IP Model-** Introduction, Working and Functions of – Process/Application layer, Host to Host/Transport layer, Internet layer, Network access/Link layer. **OSI Model-**Introduction, Working and Functions of – Physical layer, Data Link Layer, Network Layer, Transport Layer, Session Layer, Presentation Layer, Application Layer.	15
IV	**Internet** Introduction to internet. Evolution of Internet, Difference in Internet, Intranet & Extranet. Domain Name System (DNS). Web browsers & its features, Search engines, Netiquette, Introduction to Web 3.0, Advantages of Web 1.0, 2.0 and 3.0. Internet security threats and security solutions.	15
	Reference Books: 1. Computer Networks Andrew Tanenbaum, Pearson Education 2. Computer Networks Fundamentals and applications, R S Rajesh, K S Easwarakumar, R Balasubramanian, VIKAS Publishing House Pvt. Ltd. 3. Data Communication and Networks, James Irvin, David Harle Wiley 4. Computer Networks protocols, Standards and Interface Black C. Prentice Hall of India 5. Computer Communication Networks William Stalling Prentice Hall of India	

BCA-II (Sem III)

Course code: CC 303	Data Structure using C	Credit :04	Marks:100

Course Outcomes	After completion of this course student should be able to- 1. Use and implement appropriate data structure for the required problems using a programming language such as C. 2. Understand various searching & sorting techniques 3. Implementing various data structures viz. Stacks, Queues 4. Implementation of Linked Lists and Trees.	
UNIT No.	**Description**	**No. of Periods**
I	**Introduction to data structures** • Introduction to Data Structures • Data and Information • Data structures and its types • Data structures operations	15
II	**Sorting and Searching Methods** • Introduction to Sorting and searching • Bubble Sort • Insertion sort • Selection sort • Merge sort • Linear search • Binary search and hashing concept	15
III	**Stacks and Queues** • Concept of Abstract Data types • Introduction to stack • Primitive Stack operations: Push & Pop • Array and Linked Implementation of Stack in C • Application of stack: Prefix and Postfix • Expressions, Evaluation of postfix expression • Definition of queue. • Operations on queue. • Types of queue-Linear, Circular. • Applications of queue	15
IV	**Linked Lists and Trees** • Introduction to linked lists • Implementation of Linked list • Operations on linear linked list, circular linked list, doubly linked list • Sequential and linked lists • Operations such as o Traversal o Insertion o Deletion o Searching • Trees : definition, terminologies, representation, types • Tree Traversal- (Preorder, Inorder, Postorder)	15
	Reference Books: 1. 1Data Structure Through C- By Dr. Sahani.	

	2. Data Structures Using C Yashwant Kanitkar – BPB Publication 3. Introduction to Data Structures using C-Ashok Kamthane 4. Data Structures using C-Bandopadhyay & Dey(Pearson) 5. Data Structures using C-By Srivastava BPB Publication. 6. Data Structure using C by A.M. Tanenbaum, Yecidyanlang	

BCA-II (Sem III)

Course code: AEC304	Elements of Statistics	Credit :04	Marks:100

Course Outcomes	After completion of this course student should be able to- 1) Explain various term used in Statistics. 2) Describe the Measures of Central Tendency and Dispersion 3) Understand Analysis of Bivariate data(Correlation and Regression) 4) Elaborate Sampling Techniques and Time Series Analysis.

UNIT No.	Description	No. of Periods
I	**Introduction to Statistics** 1.1 Meaning and Scope of Statistics, Primary and Secondary data. 1.2 Frequency, Frequency distribution, Qualitative and quantitative data, Discrete and Continuous variables. 1.3 Representation of frequency distribution by graphs: Histogram, Frequency polygon, Frequency curve, O give curve. Representation of Statistical data by Bar diagram and Pie chart. 1.4 Numerical examples based on 1.2, 1.3.	15
II	**Measures of Central Tendency and Dispersion** 2.1 Measures of central Tendency (Averages) 2.1.1 Meaning of averages, Requirements of good average. 2.1.2 Definitions of Arithmetic mean (A.M.), Combined mean, Median, Quartiles, Mode, Relation between mean, median and mode. 2.1.3 Merits and Demerits of Mean, Median and Mode. 2.1.4 Numerical examples based on 2.1.2. 2.1.5 Determination of Median and Mode by Graph. 2.2 Measures of Dispersion (Variability): 2.2.1 Meaning of Variability, Absolute and Relative measures of dispersion. 2.2.2 Definitions of Q.D., M.D., S.D. and Variance, Combined variance and their relative measures, Coefficient of Variation (C.V.). 2.2.3 Numerical examples based on 2.2.2.	15
III	**Analysis of Bivariate data:** 3.1 Correlation: 3.1.1 Concept of Correlation, Types of correlation (Positive, Negative, Linear and Non-linear), Methods of studying correlation: Scatter diagram, Karl Pearson's Correlation Coefficient (r) and Spearman's Rank Correlation Coefficient (R). 3.1.2 Interpretation of $r = +1$, $r = -1$, $r = 0$. 3.1.3 Numerical examples on 3.1.1and 3.1.2 3.2 Regression: 3.2.1. Concept of Regression, Definitions of regression coefficients and Equations of regression lines. Properties of regression coefficients (Statements only) 3.2.2 Numerical examples on 3.2.1.	15

IV	**Sampling Techniques and Time Series Analysis:** 4.1 Sampling Techniques: 4.1.1 Definitions of Sample, Population, Sampling, Sampling Method and Census method. Advantages of sampling method over census method. 4.1.2 Types of sampling: Simple Random Sampling (with and without replacement), Stratified Random Sampling, Merits and Demerits of S.R.S. and Stratified Sampling. 4.1.3 Simple examples on Stratified Sampling. 4.2 Time Series: (Analysis and Forecasting) 4.2.1 Meaning and components of Time Series 4.2.2 Methods of determination of trend by (I) Method of Moving Averages. (II) Method of Progressive Averages. (III) Method of Least Squares (St.Line only) 4.2.3 Numerical examples on 4.2.2.	15
	Note: Use of Nonprogrammable calculator is allowed. **Reference Books:** 1) Mathematical Statistics by H.C. Saxena and J. N. Kapur 2) Business Statistics by G. V. Kumbhojkar 3) Fundamentals of Statistics by S. C. Gupta 4) Business Statistics by S. S. Desai 5) Business Statistics - SIM-Shivaji University, Kolhapur	

BCA-II (Sem.-III)

Course code: AEC305	Human Resource Management and Materials Management	Credit :04	Marks:100

Course Outcomes	After completion of this course student should be able to- 1. Understand Human Resource Planning Process. 2. Elaborate Performance Appraisal, Training and Development, Wage and salary Administration. 3. Explain functions of material management 4. Demonstrate 5 R in purchasing and Inventory control techniques.	
UNIT No.	**Description**	**No. of Periods**
I	**Human Resource Management:** Definitions, Objectives, Functions, Scope and Activities of HRM, Human Resources Planning: Definition and objectives of Human Resource planning, HRP process, Concept of Recruitment and Selection -Recruitment policy-Sources of Recruitment-Selection procedure – Promotion and demotion policy- Transfer policy.	15
II	**Performance Appraisal, Training and Development, Wage and salary Administration** Performance Appraisal Concept and objectives of performance Appraisal-Process of Performance Appraisal and methods Training and Development: Meaning and Definition- Need-Objectives-Importance of Training-Training Methods-Evaluation of Training Programme. Wage and Salary Administration Methods of wage payments-Employee Remuneration factors determining the level of remuneration- Profit sharing-Fringe Benefits and welfare incentives. Wages& Salary Administration	15
III	**Introduction to Material Management:** Definition, Objectives, Importance of Material Management. Functions of Material Management, Integrated approach to Material Management, Challenges in Material Management, Future of Material Management in India and Role of Computer in Material Management.	15
IV	**Purchasing & Inventory Management-** Purchasing-Definition, Objectives, Purchasing as a profit centre, 5R in purchasing, Purchasing cycle. Inventory Management-Definition, types of inventory, inventory costs, need of inventory.EOQ, Basic EOQ model. Vendor Managed Inventory, Selective Inventory control techniques.	15
	Note: Students should study your own institute/college from the perspectives of first two units. Students should study the different heads of salary sheet from office of institute/college/any business organisation. The details of every heads should be learnt i.e. PF, ESI, Income Tax, DA, HRA and the like.	
	Reference Books: 1) Personnel Management by Edwin Flippo. 2) Personnel & Human Resource Management - Text &Case by P.Subba	

	Rao. 3) Human Resource Management by Garry Desslar, Pearson Education Asia. 4) Purchasing and Materials Management by P. Gopalakrishnan 5) Materials Management-An Integrated Approach-Prentice Hall India, New Delhi-P.Gopalkrishnan & M.Sudarshan 6) Materials Management-Procedure,Text & Case-Prentice Hall India-A.K Dutta 7) Materials and Logistics Management-Everest Publication-L.C Jhamb	

BCA-II (Sem.-III)

Course code: CCL 306	Lab Course-V Based on CC301	Credit :02	Marks: 50
Course Outcomes	After completion of this course student should be able to- 1: Understand Web Design Concept 2: Design Web Pages using CSS, HTML & Java Script		
Sr. No.	**List of Practical's**		
1.	Design web page using heading and formatting tags in HTML		
2.	Design web page using tags-marquee, Image tags, hyperlink, list		
3.	Create Railway timetable using Table tag		
4.	Create HTML form for students registration		
5.	Create your class timetable using table tag.		
6.	Design a web page of your home town with an attractive background color, text color, an Image, font etc. (use internal CSS).		
7.	Use Inline CSS to format your resume that you created.		
8.	Use External CSS to format your class timetable as you created.		
9.	Use External, Internal, and Inline CSS to format college web page that you created.		
10.	Design a web page of your home town with an attractive background color, text color, an Image, font etc. (use internal CSS).		
11.	Demonstrate dialogue boxes in java script		
12.	Write a program in java script to perform arithmetic operations.		
13.	Write a java script function that reverse a number.		
14.	Demonstrate Objects in Javascript.		
15.	Write a javascript function to check the number prime or not .		
16.	Changing the background color of a web page using javascript DOM.		
17.	Validating html form elements using javascript.		
18.	Write a program in javascript to print the fibonacci series.		
10.	Demonstrate events in Javascript		
20.	Design web page using HTML5 Tags		

BCA-II (Sem.-III)

Course Code: CCL307	Lab Course VI based on CC303 and AEC304	Credit :02	Marks:50

Course Outcomes	After completion of this course student should be able to- 1. Implement various data structures viz. Stacks, Queues, Linked Lists and Trees 2. Apply Ms Excel features for Data Manipulation and Analysis.

Sr.No.	Practical's on CC303
1	Write a program to implement stack using static method.
2	Programs to implement applications of stack.
3	Write a program to implement Queue using static method.
4	Programs to implement applications of queue.
5	Write a program to create linked list, add node to linked list and Remove node from linked list.
6	Write a program to implement types of linked list.
7	Write a program to implement stack and queue dynamically.
8	Write a program to sort given elements using bubble sort, insertion sort, selection sort
9	Write a program to search given element using Linear Search.
10	Write a program to search given element using Binary Search.
	Practical's on AEC304 Ten Lab assignments based on AEC 304 using following Excel features: • Create workbook • Excel Charts • Apply Custom Data Formats • Use Advanced Fill Options • Apply Advanced Conditional Formatting and Filtering • Apply Custom Styles and Templates • Use Custom Views • Functions • Apply functions in formulas • Mathematical Functions • Financial functions • Useful Data Functions • Some Other Useful Functions • Look up data by using functions • Apply advanced date and time functions • Functions for Manipulating Text • Pivot tables

BCA II (Sem. IV)

Course Code: CC 401	RDBMS	Credits:04	Marks: 100
Course Outcomes	After completion of this course student should be able to- 1. Describe the fundamental elements of Relational Database Management Systems. 2. Explain various commands in data languages with example. 3. Understand various subqueries & joins. 4. Apply the control statements and stored procedures.		

Unit No.	Descriptions	No. of Periods
I	**Introduction to RDBMS** • Concept of RDBMS • Difference between DBMS and RDBMS • Terminologies: relation, attribute, domain, tuple, entities • Entity relationship model • Relational Model: Structure of Relational Database • Concept of RelationalAlgebra • Role and Responsibilities of DBA • **Database Protection:** Security Issues, Threats to Databases, Security Mechanisms	15
II	**Basics of MySQL** • Difference between SQL and MySQL • Creating a Database and Tables • DDL,DML,DCL,TCL Commands • Clauses- Order by, where and group by • Functions in MySQL o Aggregate functions(avg, count, min, max, sum) o String Functions(concat, instr,mid, length, strcmp, trim, ltrim, rtrim) o Math Functions(abs, ceil, floor, mod,pow, sqrt) o Date and Time Functions(adddate, datediff, day, month, year, hour, min, sec)	15
III	**Subqueries and Joins in MySQL** • Subqueries ➢ Concepts of Sub queries ➢ sub queries with IN, EXISTS,NOT EXISTS ➢ subqueries restrictions ➢ Nested subqueries ➢ ANY/ALL clause ➢ correlated sub queries ➢ Group by and Having clause • Concepts of Join • Types of Join ➢ Inner Join	15

	➢ Outer Join ➢ Left Join ➢ Right Join ➢ Cross Join • **Views** (creating, altering dropping, renaming and manipulating views)	
IV	**MySQL control statements and stored procedures** • Control Statements- If, case and loop • Stored procedures – Creating and executing procedures with and without parameters • Cursors- Declare, open, fetch, close • Triggers- Create, show and drop trigger, Types of trigger	**15**
	Books Recommended: 1.Introduction to Database Systems C. J. Date Pearsons Education 2. Database System Concept Korth, Silberschatz and Sudarshan MGH 3. Fundamentals of Database Systems Elmasri Navathe Pearson Education 4. SQL /PL SQL For Oracle 11G BlackBook Dr.Deshpande Wiley Dreamtech 5. ORACLE PL/SQL Programming Scott Ulman TMH 9th 6. SQL, PL/SQL the programming language of Oracle Ivan Bayross BPB 4th Edition	

BCA-II (Sem IV)

Course code: CC 402	Software Engineering	Credit :04	Marks:100
Course Outcomes	After completion of this course student should be able to- 1. Understand life cycle models, requirement elicitation techniques, understand the concept of analysis and design of software. 2. Develop SRS document. 3. Use of analysis and design tools for system development. 4. Apply software engineering concepts in software development to develop quality software.		
UNIT No.	**Description**		**No. of Periods**
I	**Introduction to Software Engineering:** Introduction to system, Characteristics of system, types of system, Program vs Software, Definition of Software Engineering, importance, principles of software engineering, Difference between software engineering and software programming, Members involved in software development. SDLC (General software development life cycle with all phases) **Software process models:** Overview of software models (Waterfall, Prototyping and Spiral model).		15
II	**Requirement Engineering:** What is Requirement Engineering, Types of requirements, Requirement elicitation techniques- Traditional methods and Modern methods, Verification and validation process, Formal technical review, Principles of Requirement Specification, Software Requirement Specification document, Characteristics of good SRS.		15
III	**Analysis and System Design tools:** Data Flow Diagrams (DFD), Data Dictionary, Entity-Relationship Diagrams, Decision Tree and Decision Table. Input and Output Design- I/O design considerations, Structured Chart, HIPO chart, Characteristics of Good Design, ***CASE STUDIES*** – Library Management System, Inventory Management System.		15
IV	**Software Testing and Software Quality Assurance** **Software Testing:** Definition, Test characteristics, Types of testing: Black-Box Testing , White-Box Testing ,Unit testing , Integration testing, Validation testing, System testing. **Software Quality Assurance:** **Introduction-** Quality, and its attributes, quality control, quality assurance, cost of quality, SQA activities, SQA plan.		15

	References (Books, Websites etc): 1. Software Engineering a Practitioners Approach by S. Pressman & Roger, Seventh Edition, McGraw Hill International Edition. 2. Software Engineering by Sommerville, , 7th edition, Pearson Publication 3. Software Engineering by K.K. Aggarwal & Yogesh Singh, New Age International Publishers. 4. Web sites of NPTEL / Swayam 5. www. edx.com	

BCA-II (Sem IV)

Course code: CC 403	DOT NET Technology	Credit :04	Marks:100

Course Outcomes	After completion of this course student should be able to- 1. Understand features of C# DOT NET 2. Implement various server controls for website development 3. Apply validation and state management for interactive website development 4. Design and develop dynamic web application using ADO.Net	
UNIT No.	**Description**	**No. of Periods**
I	**Introduction to .NET Framework** 1.1. Overview of .NET 1.2. Features of .NET 1.3. Managed and unmanaged code 1.4. Meta Data 1.5. .NET types and .NET object and name spaces 1.6. Architecture of DOT NET Framework: CLR, CTS, MSIL, JIT, CLS, FCL 1.7. Types of JIT 1.8 Visual studio .NET IDE	15
II	**C# Basics** 2.1 Introduction to C# 2.2 Entry point method, command line arguments 2.3 Different valid forms of main() 2.4. Difference between .Exe and .DLL 2.5 Parameter Passing mechanism, Out parameter 2.6 Data types 2.7 Type Casting, Boxing & Unboxing 2.8 Partial class and implementation 2.9 Control structures	15
III	**ASP .NET** 3.1. Asp.Net Server controls 3.2. Web form lifecycle 3.3. Validtion controls 3.4. Navigation controls 3.5 Response.redirect, server.response, 3.6 Cross page posting 3.7 State Management	15
IV	**ADO.NET** 4.1 Data Controls in ASP.Net 4.2 ADO.Net Classes-Connection, Command, DataReader, DataAdapter,Dataset 4.3 Connected and Disconnected architecture 4.4 Data binding using ADO.net 4.5 Report generation, simple and parameterized reports	15
	Books Recommended: 1. ASP .NET-The Complete Reference Tata MacGraw Hill 2. ASP.NET 4 Unleashed by Stephen Walther, Kevin Scott Hoffman, Sams Publishing	

	3. Bill Evjen, Professional ASP.NET 3.5 in C# and VB, Wrox Publication 4. Kogent Solutions, C# 2008 Programming covers. NET 3.5 (Black Book), Dreamtech Press 5.Microsoft ASP.NET 4.0 Step by Step - George Shepherd, Microsoft Press 6. Mastering ASP.Net - BPB Publication 7. ASP.net – The Complete Reference- Tata McGraw Hill 8. ASP.NET Programming – Murach 9. ASP.NET 4.0 Programming- Joydip Kanjilal	

BCA II (Sem IV)

Course code: AEC 404	Entrepreneurship Development	Credit :04	Marks:100
Course Outcomes	After completion of this course student should be able to- 1. Define characteristics, function and types of entrepreneurs and know the role of Entrepreneurship in Economic Development. 2. Identify Business Opportunities and prepare business plan. 3. Know project finance agencies. 4. Understand New Opportunities and Challenges in digital entrepreneurship.		
UNIT No.	**Description**		**No. of Periods**
I	**Introduction to Entrepreneurship :** Evolution, Concept and definition of an entrepreneur, Characteristics, function and types of entrepreneurs, Qualities of an Entrepreneur, Growth of Entrepreneurship in India, Role of Entrepreneurship in Economic Development, Women Entrepreneurship in India.		15
II	**Business Opportunity Identification**: Search for Business Ideas, Market Assessment, Sources of Information and Environmental Analysis, Entrepreneurial opportunities in India, Business Opportunity identification and selection.		15
III	**Business Plan Preparation and Project Finance** Meaning of Business plan, Significance and Contents of a Business Plan, developing Business Plan, Presenting Business Plan and Preparation of project report. Project Finance: Introduction, Types of Finance, Sources of Finance, Venture Capital, Start-up and Make-in-India program, MUDRA. Support Agencies: Support to Entrepreneurs by DIC, SIDBI, SIDCO, SSIB, NSIC, SISI, Other Institutions etc. Entrepreneurship promotion by Government through various schemes.		15
IV	**Digital Entrepreneurship:** Meaning and Introduction, New Opportunities and Challenges, Choosing a Digital Business Idea, Creating a Digital Business Design. Digital Business Model. Digital business platforms. Different Electronic interface to consumers. Components of business website. IT Entrepreneurs: Azim Premji, N.R. Narayan Murthy and Shiv Nadar		15
	References Books: 1.Dr. Dilip Sarwate, Entrepreneurship Development and Project Management, Everest Publishing house 2.Vasant Desai, Dynamics of Entrepreneurship development and Management, Himalaya Publishing House 3. David H Holt, Entrepreneurship and New Venture Creation, Prentice Hall 4. Paul Ajit Kumar, Paul, Entrepreneurship Development, Himalaya Publishing House Mumbai 5. Raj Shankar – Entrepreneurship: Theory and Practicel – Vijay Nicole Imprints Pvt. Ltd. 6. S.S. Khanka – Entrepreneurial Development – S. Chand And		

" A" Re- accredited By NAAC
(2014) with CGPA-3.16

SHIVAJI UNIVERISTY, KOLHAPUR-416 004. MAHARASHTRA
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शिवाजी विद्यापीठ, कोल्हापूर - ४१६ ००४.
दुरध्वनि: (ईपीएबीएक्स) २६०९००० विस्तारीत / . २६०९०९४)
फॅक्स : ००९१-०२३१-२६९१५३३ व २६९२३३३.
e-mail : bos@unishivaji.ac.in Web-site :www.unishivaji.ac.in

Ref.No./SU/BOS/Commerce /BCA/2231 Date : 10 Jun 2015

The Principal,
All Affiliated B.C.A. Colleges
Shivaji University, Kolhapur.

Subject: Regarding revised Syllabi, Nature of Question Paper and Equivalence of B.C.A. Part-III (Semester V & VI) under the Faculty of Commerce.

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the revised syllabi of B.C.A. Part-III (Semester -V & VI) under the Faculty of Commerce.

This syllabi will be implemented from the academic year 2015-16 (i.e. from June 2015) onwards. A soft copy (C.D.) containing the syllabus is enclosed herewith. This syllabi is also available on university website www.unishivaji.ac.in.

The question papers on the pre-revised syllabi of above mentioned course will be set for the examinations to be held in Oct/Nov-2015 & March/April-2016. These two chances are available for repeater students, if any.

You are, therefore requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully,
Sd/-
Dy. Registrar

Encl: -As above.
Copy to:-
1. Dean, Faculty of Commerce
2. Chairman, Board of Studies in Business Management — For information
3. Appointment Section
4. Other Exam--35
5.Affiliation Section (P.G.)
6. Computer Centre
7.P.G. Admission
8.Meeting Section
9.P.G.Seminar
10.Eligibility Section — For information & necessary action.

SHIVAJI UNIVERSITY, KOLHAPUR

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Revised Syllabus For

Bachelor of Computer Applications

Semester – V and VI

(Under Faculty Of Commerce)

Syllabus to be implemented from June 2015-16 onwards.

Revised Syllabus of

BACHELOR OF COMPUTER APPLICATIONS (BCA) COURSE

(Under the Faculty of Commerce)

w.e.f. Academic Year 2015-16

Structure of the Course:

Paper No.	Name of The subject	Teaching Scheme		Examination Scheme		
		Theory per week	Total Practical per week per batch	Theory Marks	Internal Marks	Total Marks
B.C.A. Part- III Semester – V						
501	Management Accounting	4	--	80	20	100
502	E-Commerce	4	--	80	20	100
503	Computer Network	4	--	80	20	100
504	RDBMS with Oracle	4	--	80	20	100
505	Visual Programming	4	--	80	20	100
506	Lab Course based on 504 and 505	--	4	--	50	50
507	Mini Project	--	2	--	50	50
	Total	20	06	400	200	600
B.C.A. Part- III Semester - VI						
601	Strategic Management	4	--	80	20	100
602	Data Mining and Data Warehousing	4	--	80	20	100
603	Linux Operating System	4	--	80	20	100
604	Java Programming	4	--	80	20	100
605	Lab Course based on Paper no.- 603	--	4	--	50	50
606	Lab Course based on Paper no. 604	--	4	--	50	50
607	Major Project	--	2	80	20	100
	Total	16	10	400	200	600

BCA-III (Sem.-V)
Paper No. 501: Management Accounting

Objectives: To make the students able to apply the techniques of Management Accounting

Unit - 1: Introduction to Management Accounting: **10**

Meaning and Nature of Management Accounting, Role of Management Accountant in Planning, Controlling and Decision Making, Difference between Financial Accounting and Management Accounting, Tools and Techniques of Management Accounting.

Unit 2: Financial Statement Analysis **10**

Importance of Financial Statement Analysis, Techniques of Financial Statement Analysis- Ratio Analysis, Classification of Ratios- Profitability Ratio, Turnover Ratios, Liquidity Ratios, Solvency Ratios.

Unit 3 : Cost-Volume- Profit(CVP) **10**

Analysis and Decision Making- Break Even Analysis, Cost-Volume- Profit Analysis, Decision Making- Make or Buy Decisions, Shut Down or Continue Decisions, Alternative Course of Action etc.

Unit 4: Budgetary Control **10**

Meaning of Budget and Budgetary Control, Objectives, Advantages, Limitations of Budgetary Control, Types of Budget- Production, Sales, Cash, Master Budget, Capital Expenditure, Budgeting.

Reference Books:

1. Management Accounting By Khan and Jain
2. Principles of Management Accounting By Manmohan and Goyal
3. Principles of Management Accounting BY Maheshwari
4. Management Accounting By Pandey I. M.
5. Introduction to Management Accounting By Charles T. Homgren

BCA-III

(Sem.-V)

Paper No. 502: E-Commerce

Unit-1- Introduction **12**

1.1 E-Commerce- Concept, Definition, Goals
1.2 Components and functions
1.3 Advantages and Limitations
1.4 Challenges and opportunities
1.5 E-Commerce models-C2C, C2B, C2G, B2C, B2B, B2G
1.6 EDI- Concept, components,
1.7 Working mechanism of EDI
1.8 Advantages and disadvantages of EDI

Unit-2-Electronic payment System **12**

4.1 Concept of e-payment
4.2 Difference between traditional and electronics payment system
4.3 Digital cash
4.4 Credit and Debit card system, Smart Card
4.5 Prepaid, post paid and instant payment system
4.6 Electronic funds transfer
4.7 Concept of e-banking

Unit-3-E-Security **12**

6.1 Concept of E-security
6.2 Security threats- concept and types
6.3 Malicious code
6.4 Phishing and identity theft
6.5 Hacking and cyber vandalism
6.6 Credit card fraud/Theft
6.7 Spoofing
6.8 Denial of service (DoS)
6.9 Firewall and proxy server

Unit-4-Security Solutions **12**

5.1 Concept of encryption and decryption
5.2 Symmetric and asymmetric key encryption
5.3 Cipher text
5.4 Digital Envelopes
5.5 Digital certificates
5.6 Security socket layer (SSL)
5.7 Limitations of encryption solutions.

References :

1. E-Commerce- Kenneth C.Laudon and Carol Guercio Traver
2. Internet marketing and E-commerce-Ward Hanson and Kirthi Kalyanam
3. E-Commerce Concepts , Models , Strategies by -- G.S.V Murthy
4. E-Commerce by --Kamlesh K Bajaj and Debjani Nag
5. Electronic Commerce by --Gary P. Schneider
6. E-Commerce A Managers Guide, Ravi Kalkota

B.C.A.- Part-III
Sem-V
Paper- 503 Computer Network

UNIT –1Basics of Data communication **12**

1.1. Data Communication concept

1.1.1 Components-sender, receiver, message, transmission media

1.1.2 Data Flow- simplex, half-duplex, or full-duplex

1.2 Networks

1.2.1 Definition, Advantages and disadvantages

1.2.2 Categories of Networks- LAN, WAN. MAN

1.2.3 Network Architecture-Client-Server and Peer to peer

1.3 Multiplexing and switching

1.3.1 Frequency-Division Multiplexing, Wavelength-Division Multiplexing, Time-Division Multiplexing

1.3.2 Circuit switching, Packet Switching, Message Switching

UNIT – 2 Transmission media and Reference Models **12**

2.1 Transmission Media

2.1.1 Guided Media - Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable

2.1.2 Unguided Media: Radio Waves, Microwaves, Infrared, satellite communication

2.2 Transmission Modes- Parallel and Serial -(Asynchronous, Synchronous)

2.3 Reference Models

2.3.1 OSI reference model

2.3.2 TCP/IP reference model

2.3.3 Comparison of OSI and TCP/IP reference model

2.4 Protocol Standards

2.5 IP address scheme and characteristics of IP address

UNIT-3 Data link, Network and Transport layer **12**

3.1 Data link Layer-

3.1.1Design issues

3.1.2 Framing, error detection and correction

3.2 Network layer

3.2. 1 design issues of network layer

3.2.2 Routing algorithm (shortest path, Flooding, distance vector,)

3.2.3 Congestion control

3.3 Transport layer

3.3.1 Transport Layer Primitives: listen, connect, send, receive, disconnect

3.3.2 Protocols: TCP, UDP

UNIT- 4 Session, Presentation and Application layer **12**

4.1 Session layer:

4.1.1 Services: dialog management, synchronization, activity management, exception handling

4.1.2 Remote procedure calls

4.2 Presentation layer:

4.2.1 Services: Translation, compression, encryption

4.2.2 Cryptography: concept, symmetric key & asymmetric key cryptography

4.3 Application layer:

4.3.1 Function4.3.2 Domain name system (DNS),Hypertext Transfer Protocol (HTTP),Simple Mail Transfer Protocol (SMTP) ,Telnet, File Transfer Protocol (FTP)

Reference Books-

1. Behrouz A. Forouzan- Data Communications And Networking - (4th edition) McGraw-Hill
2. Tanenbaum A.S. "Computer Network", 3rd Edition, Prentice Hall of India
3. Stalling W, "Computer Communication Network".(4th edition). Prentice hall of India 1993
4. Computer Networking: A Top Down Approach Featuring in Internet by James F. Kurose & K. W. Ross

B.C.A. Part – III
(Sem- V)
Paper No. 504: RDBMS with Oracle

Unit –1: Relational Database Management System: **12**

1.1 Concept of RDBMS, Difference between DBMS and RDBMS, Features of RDBMS.

1.2 Introduction of Oracle, Role and responsibilities of DBA.

1.3 RDBMS Terminology- Relation, Tuple, Cardinality, Attribute, Degree, Primary Key, Domain, Codd's Rules

1.4 Relational Model, Functional Dependencies, Normalization and its types.

Unit –2: INTRODUCTION TO SQL: **12**

2.1 Features of SQL, Data types,

2.2 Classification of SQL Commands – DDL (create, alter, drop), DML (insert, update, delete), DCL (grant, revoke), TCL (rollback, commit).

2.3 SQL Integrity Constraints-(Primary key, Foreign key, unique key, not null, default, check)

2.4 Select statement with group by and order by clause

2.5 SQL Operators-arithmetic, relational, Logical, Like, Between, IN operator

2.6 SQL Functions- Arithmetic functions, Conversion Functions, Date function, Aggregate functions, String functions.

Unit – 3: JOIN AND SUB QUERIES: **12**

3.1 Join types - Inner Join, Outer Join, Cross Join and self-Join

3.2 Sub-queries, Multiple sub queries, nesting of sub queries, sub queries in DML commands.

3.3 Correlated queries, Indexes, Sequences. Views-Create View, Drop, View and its Advantages.

Unit – 4: INTRODUCTION TO PL/SQL: **12**

4.1 Introduction to PL/SQL, Block Structure

4.2 Data types in PL-SQL

4.3 Control Structures-Branching statements, Iterative Control statements.

4.4 Cursors –Concept, Types- Implicit, Explicit, Procedure to create explicit cursors, Cursor Attributes.

4.5 TRIGGERS: Concept and types.

References Books:

1) SQL, PL/SQL: The Programming Language- Ivan Bayross- (BPB)
2) Structured Query Language- by Osbome
3) SQL by Scott Ullman.
4) SQL & PL/SQL Black Book for Oracle by Dr,P.S.Deshpande.

B.C.A. Part – III

(Sem- V)

Paper No- 505 Visual Programming

Unit -1: Introduction **12**

1.1 overview, Architecture, Features of .NET ,

1.2 Meta data, CLR, Managed and unmanaged code

1.3 CTS, CLS, .NET base classes

1.4 Introduction to Visual Studio .NET IDE

1.5 Types of JIT compiler

Unit -2: Introduction To C# **12**

2.1 Introduction to C#, Entry point method, command line arguments

2.2 Compiling and building projects, Compiling a C# program using command line utility, CSC.EXE, Different valid forms of main.

2.3 Global stack and heap memory, reference type and data type, casting-implicit and explicit

2.4 Boxing and unboxing, pass by value and pass by reference and out parameters

2.5 Partial class, DLL, Difference between DLL and EXE

Unit-3: Introduction to Web Programming **12**

3.1 Understanding role of WEB server and WEB browser, HTTP request and response structure.

3.2 Introduction to ASP, Types of path, FORM tag

3.3 Types of server controls

3.4 Validation controls-Base validator, compare validator, range validator, grouping control validator

3.5 Web forms life cycle

3.6 Event handling in WEB forms, response.redirect, server.response, cross page post back property of button

3.7 ASP.NET state management

3.8 WEB.config, globalization and localization, AppDomain

Unit- 4: ADO .NET **12**

4.1 Introduction to ADO.Net

4.2 ADO.NET Architecture- Conncetion, command, dat reader, data adapter, data set

4.3 Understanding connected layaer of ADO.NET and disconnected layer of ADO.NET

Reference Books-

1. Inside C# - By Tom Archer, Andrew Whitechapel (Microsoft Pub)
2. ASP.NET Black Book- By Steven Holzner
3. Professional ASP.NET 2 –Wrox Series- Wallace B. McClure

B.C.A. Part – III (Sem- V)

Paper No. 506: Lab Course based on 504 and 505

Lab exercise based on paper 504- RDBMS with Oracle

1. SQL queries on DDL statements.
2. SQL queries on DML statements.
3. SQL queries on Operators-relational, Logical, Like, Between, IN operator
4. SQL queries on Oracle Functions and clauses
5. SQL queries on Join
6. Creating Views and index
7. PL-SQL block on branching statement.
8. PL-SQL block on looping statement.
9. PL-SQL blocks to create explicit cursor.
10. PL-SQL blocks to study attributes of explicit cursor.
11. PL-SQL blocks to create Trigger.

B.C.A. Part – III (Sem- V)
Paper No 507: Mini Project

The group of students may undertake a software project in consultation with the internal guide. The group size should not exceed four students. The student is expected do project in any language studied in Vth or earlier Semesters. The mini Project will be evaluated by the external examiners appointed by University. Project documentation format is as per paper no 607.

SHIVAJI UNIVERSITY, KOLHAPUR

B.C.A. Part – III
(Sem- VI)
Paper No.601 Strategic Management

Objectives:

1) To acquaint the students with the basic concepts of strategic management and its growing importance in modern era.

2) To familiarize the students with the process of strategic management.

Unit-1: Introduction to Strategic Management **(15)**

a) Strategic Management: Meaning and definitions of strategy and strategic Management- Need for Strategic Management- Steps involved in Strategic Management Process- Role of Board of Directors, Chief Executive Officers and Senior Management in Strategic Management

b) Strategic management in different context: Strategic management in small business, multinational corporations, manufacturing and service organizations (especially software companies) public sector, voluntary and not-for-profit organizations and professional organizations-

c) Strategic Management in India

Unit-2: Levels of Strategies **(15)**

a) Corporate-level Strategies: Grand, Stability, Expansion, Retrenchment, Combination Strategies and Corporate Restructuring

b) Business- Level Strategies: Cost Leadership, Differentiation and Focus Business Strategy,

c) Tactics of Business Strategies

Unit-3: Strategy Formulation **(15)**

a) Developing a vision and mission statement- Characteristics of a good vision and mission statement

b) Defining organizational goals and objectives- Characteristics of objectives

c) Analysis of internal and external environment: SWOT Analysis and TOWS Matrix

d) Generating strategic options and choosing a strategy

e) Challenges faced during strategy formulation

Unit-4: Strategy Implementation, Evaluation and Control (15)

a) Concept of strategy implementation- Inter-relationship of strategy formulation and implementation-

b) Process of strategy implementation: resource allocation- structures for strategies (Mechanistic, organic tall, flat-SBU, matrix, network, structures), strategic leadership. Functional strategies (marketing, financial, operational and personnel)

c) Concept of strategic evaluation and control- importance of strategic evaluation- problems in strategic evaluation-

d) Process of strategic control– types and techniques of strategic control

Reference Books:

1) Strategic Management and Business Policy--- Azhar Kazmi, Tata McGraw Hill, 3rd Ed. 2009.

2) Strategic Management, Concepts and Cases--- Fred R. David, Pearson Education, 9th Ed. 2005.

3) Competitive Advantage--- Michael E. Porter, Free Press.

4) Globalization, Liberalization and Strategic Management---V. P. Michael. Himalaya Publishing House

5) Crafting and Executing Strategy- The quest for competitive advantage, Concept and Cases--- A.A. Thompson, A.J. Strickland, John E. Gamble, Arum K.Jain , Tata McGraw Hill-2010

6) Business Policy and Strategic Management---P. Subba Rao, Himalaya Publishing House

7) Strategic Management---Alpana Trehan, Kogent, LearningSolutions Inc.

8) Strategic Management--- Nitish Sengupta, K.J.S. Chandan , Vikas Publishing House Pvt. Ltd. New Delhi.

9) Strategic Management--- Pendra Kachru, ExcelBooks, New Delhi.

10) Strategic Management---Saroj Datta, Jaico Publishing House, New Delhi.

11)Strategic Management----N. Chandrsekaran and P.S. Ananthanarayanan, Oxford University Press, New Delhi

12) Business Policy and Strategic Management---Sukul Lomash and P.K. Mishra, (Vikas Publishing House Pvt. Ltd. New Delhi)

B.C.A. Part – III

(Sem- VI)

Paper No. 602 Data Mining and Data Warehousing

Unit - 1: Introduction to Data Mining **12**

1.1 Basic Data mining Task

1.2 DM versus Knowledge Discovery in Databases

1.3 Data Mining Issues

1.4 Data Mining Metrics

1.5 Social implementation of Data Mining

1.6 Overview of Application of Data mining

1.6.1 Architecture of DW

1.6.2 OLAP and Data Cubes

1.6.3 Dimensional Data Modeling - star , snowflake schemas

1.6.4 Data processing - Need Data cleaning. Data integration and Transformation, Data reduction

1.6.5 machine learning

1.6.6 pattern matching

Unit - 2:Data Mining techniques **14**

2.1 Frequent item - set and association rule mining: apriori algorithm, use of sampling for frequent item- set tree algorithm

2.2 graph sampling : frequent sub graph mining . tree mining ,sequence mining

2.3 **Classification and prediction:**

2.3.1 Decision tree [3 hrs]

2.3.2 Construction, performance, attribute selection

2.3.3 Issues : Over fitting tree pruning methods, missing values, continuous classes

2.3.4 Classification and regression tree(CART)

2.3.5 Bayesians Classification [6 hrs]

2.3.6 Bayesians theorem , Narvee Bayes classifier

2.3.7 Bayesian networks

2.3.8 Inference

2.3.9 Parameter and structure learning

2.3.10 Leaner classification [4 hrs]

2.3.11 Least squares, logistics , perception and SVM classifiers

2.3.12 Prediction [3 hrs]

2.3.13 Linear regression

2.3.14 Non-linear regression

Unit – 3: Clustering **12**

3.1 K-means

3.2 expectation maximization (EM) algorithm

3.3 Hierarchical clustering , Carrolton clustering

Unit - 4: Software for Data mining and application of Data mining **10**

4.1 R

4.2 Weka

4.3 Sample applications of data mining

Reference Book

1. Data Mining : Concept and Techniques Han Elsevier ISBN : 978938031913

2. Margaret H. Dunham , S. Shridhar Data Mining- Introductory and advanced topics Pearson education

3. Tom Mitchell- machine learning McGraw hill 1997

B.C.A. Part – III

(Sem- VI)

Paper No - 603: Linux Operating System

Unit-1 Introduction 12

1.1 Operating system

1.2 Types of operating system

1.3 Functions of operating system

1.4 History and development of Linux

1.5 Features of Linux

1.6 Login , logout procedure, Concept of shell, kernel, Kernel-shell relationship

Unit-2 Handling files and directory's 12

2.1 Concept of file, types, file system tree

2.2 Different GPU (clear ,cal , date, wc, who)

2.3 file handling- ls ,cat ,cp, mv , rm commands , listing file names, using meta characters (* , ? ,[ ]).

2.4 Concept of directory , home directory , directory handling commands- cd , mkdir, rmdir,pwd.

2.5 Basic file attributes, change file/directory, chmod command

2.6 Filters-cut, paste, sort, unique, head, tail, grep commands.

2.7 Command linking using pipe (|) operator, command substitution.

Unit-3 VI editor 12

3.1 Vi Editor, use of VI , features of VI

3.3 Different modes and working with VI editor

3.4 Command mode -cursor movements(k,j,h,l), delete(character, line, word), Screen up , down, use of repeat factor , joining lines (J), searching for pattern (/ and ?)

3.5 Input mode- switching with (I,o,r,s,a,I,O,R,S,A)

3.6 ex mode – saving (w, x, q)

Unit- 4 Simple Shell programming 12

4.1 Concept of Shell Script, running a shell script

4.2 Statements – read , echo , test , if, case , exit.

4.3 Loops- while, until, for

4.4 Command line arguments

4.5 Exit status of a command

Reference books-

1. Unix concept and applications ----- Sumitabha Das
2. Unix shell programming- Yashwant Kanetkar
3. Linux programming- Foreword By- Alan Cox
4. RedHalt Linux 718 By Bill Ball , David Pitts

B.C.A. Part – III

(Sem- VI)

Paper No-604: Java Programming

Unit- 1- Introduction To Java **12**

1.1 History and features of Java Programming
1.2 Difference between Java & C++
1.3 Java Environment
1.4 Java tokens, constants, variables, data types, type casting
1.5 Operators and Expressions
1.6 Implementing Java Program
1.7 Branching and looping statements
1.8 Class, objects, methods
1.9 Constructors and destructor

Unit-2- Inheritance and Packages **12**

2.1 Defining sub class, subclass constructor
2.2 Inheritance-Multiple and hierarchical
2.3 Defining packages, system packages
2.4 Creating & accessing packages
2.5 Adding a class to package
2.6 Polymorphism- function overloading and over ridding, its difference

Unit-3- Multithreading and Exception Handling **12**

3.1 Creating threads, extending a thread class- declaring the class, run() method
3.2 Stopping and blocking threads
3.3 Life cycle of thread
3.4 Using thread method
3.5 Thread priority
3.6 Introduction to exception
3.7 Syntax of exception handling code
3.8 Multiple catch statement
3.9 Using finally statement
3.10 Throwing exception

Unit- 4- Applets Programming & Introduction to AWT **12**

4.1 Introduction to applets
4.2 Building applet code
4.3 Applet life cycle
4.4 Adding applet code to HTML file
4.5 Introduction to Abstract Window Toolkit (AWT)

Reference Books:

1. Programming with JAVA, A Primer, 2nd Editions, E Balagurusamy
2. Java Programming- Rajendra Salokhe (Aruta Pub)
3. Core Java an integrated approach – Dr R. Nageshwara

B.C.A. Part – III
(Sem- VI)
Paper-No-605: Lab Course based on Paper no.- 603

Practicals-

1. Login , logout procedure (user/ login name and password)
2. Copy, move, delete files form different directories.
3. Change file access permissions using chmod and confirm using ls –l command
4. Use of filter commands
5. Creating text files using VI editor.

Shell scripts-

1. Shell script to get any number and display its square , cube sum of its digits
2. Use of command line arguments in a script.
3. Script using if statement.
4. Script handling use of case structure.
5. Scripts with command substitution such as to count number of files, number of users working on Linux network etc,

B.C.A. Part – III (Sem- VI)
Paper No 606: Lab Course based on Paper no. 604

Sample programs

1. Java programs based on command line arguments
2. Java programs based Type Casting
3. Java programs based on branching and looping statements
4. Java programs based on constructors
5. Java programs based on method overloading
6. Java programs based on interfaces
7. Java programs based on inheritance
8. Java programs based on packages
9. Java programs based on multithreading
10. Java programs based on exception handling
11. Java programs with applets

B.C.A. Part – III
(Sem- VI)
Paper No 607: Major Project

A group of maximum four students prepare a major project under the guidance of internal teacher. Project report will be evaluated by the internal teacher out of 20 marks and there will be viva-voce examination for 80 marks.(Documentation – 20 Marks, Online Presentation-- 30 Marks, Viva-Voce -- 30 Marks.) The panel for viva-voce examination will be appointed by university. The student should prepare the project report on the work carried out as a project in semester VI.

Guidelines for Project:

Number of Copies: The student should submit two Hard-bound copies of the Project Report.

Acceptance/Rejection of Project Report:

The student must submit an outline of the project report to the college for approval. The college holds the right to accept the project or suggest modifications for resubmission. Only on acceptance of draft project report, the student should make the final copies.

Format of the Project Report:

The student must adhere strictly to the following format for the submission of the Project Report.

a. Paper:

The Report shall be typed on white paper, A4 size, for the final submission. The Report to be submitted to the must be original and subsequent copies may be photocopied on any paper.

b. Typing:

The typing shall be of standard letter size, 1.5 spaced and on one side of the paper only. (Normal text should have Arial Font size 11 or 12. Headings can have bigger size)

c. Margins:

The typing must be done in the following margins:

Left -----1.5 inch, Right ----- 1 inch

Top ----- 1 inch, Bottom ----- 1 inch

d. Front Cover:

The front cover should contain the following details:

TOP : The title in block capitals of 6mm to 15mm letters.

CENTRE: Full name in block capitals of 6mm to 10mm letters.

BOTTOM: Name of the University, Course, Year of submission -all in block capitals of 6mm to 10mm letters on separate lines with proper spacing and centering.

f. Blank Sheets:

At the beginning and end of the report, two white black bound papers should be provided, one for the purpose of binding and other to be left blank.

Documentation Format

a) Cover Page
b) Institute/College Recommendation
c) Guide Certificate
d) Declaration
e) Acknowledgement
f) Index
g) Chapter Scheme

1) Introduction to Project
   - -Introduction
   - -Existing System
   - -Need and scope of Computer System
   - -Organization Profile

2) Proposed System
   - -Objectives
   - -Requirement Engg.
   - • Requirement Gathering
   - • SRS

3) System Analysis
   - System Diagram
   - • DFD
   - • ERD
   - • UML(if applicable)

4) System Design
   - • Database Design
   - • Input Design
   - • Output Design

5) Implementation
   - - System Requirement
   - - Hardware
   - - Software
   - - Installation process
   - - User Guideline

6) Output(with valid Data)
   (Minimum 6 reports)

7) Conclusion and Suggestions
   - • Conclusion
   - • Limitations
   - • Suggestion

8) References:-

i) Books:-

ii) Journals:-

iii) Periodicals and Newspapers:-

iv) Web

v)Questioner/Schedule(if used)

vi)Source code(Include Main Logic source code)

EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS-

B.C.A. Part- III Semester – V			
Old Papers		New Papers	
Paper No.	**Titles of the old Papers**	**Paper No.**	**Titles of the old Papers**
501	Software Engineering – II	504	RDBMS with Oracle
502	Computer Network	503	Computer Network
503	Unified Modeling Language	505	Visual Programming
504	Internet Programming	502	E-Commerce
505	Enterprise Resource Planning (ERP)	501	Management Accounting
506	Lab Course VII (Based on Paper No. 504)	506	Lab Course based on 504 and 505
507	Mini Project	507	Mini Project
B.C.A. Part- III Semester – VI			
Old Papers		New Papers	
Paper No.	**Titles of the old Papers**	**Paper No.**	**Titles of the New Papers**
601	Linux	603	Linux Operating System
602	Data Warehousing & Data mining	602	Data Mining and Data Warehousing
603	Java Programming	604	Java Programming
604	Management Support System	601	Strategic Management
605	Lab Course VIII (Based on Paper No. 601)	605	Lab Course based on Paper no.- 603
606	Lab Course IX (Based on Paper No. 603)	606	Lab Course based on Paper no. 604
607	Major Project	607	Major Project

2. Authentication letter from Principal that the courses claimed are as per the affiliating University curriculam.

Gandhi Education Society Kundal's
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Establishment: -1998 NAAC REACCREDITED 'B' GRADE
President Ph. No (02346) 271720
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Incharge Principal
Dr. J. A. Patil
M.A., B.Ed, M.Phil., Ph.D.

Ref. No.:

Date: - 11/10/2022

1.3.2 NUMBER OF PROGRAMS HAVING EXPERIMENTAL LEARNING THROUGH PROJECT WORK

Year	NUMBER OF PROGRAMS
2020-21	31
2019-20	27
2018-19	26
2017-18	26
2016-17	26

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Incharge Principal
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M.A., B.Ed, M.Phil., Ph.D.

Ref. No.:

Date: - 11/01/2022

Certificate

This is to certify that following courses are as per the affiliating University curriculum and include experiential learning through project work:

Year 1: 2020-21

Sr. No.	Programme Name	Number of Papers include experiential learning through project work
1	B.A in Marathi	5
2	B.A in English	6
3	B.A in History	5
4	B.A in Economics	5
5	BCA in Computer Application	2
6	B.Sc. in Chemistry	1
	BSc Compulsory English	1
7	B.Sc. in Zoology	1
8	B.Sc. in Computer Science	1
9	B.A. II, Environmental Studies	1
10	B.Com. II, Environmental Studies	1
11	BCA II, Environmental Studies	1
12	B.Sc. II, Environmental Studies	1
	Total	31

K.G.D.B.L. College, Kundal * Tal.Palus.Dist.Sangli *

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Incharge Principal
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Ref. No.:

Date: - 11/01/2022

Certificate

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Year 2: 2019-20

Sr. No.	Programme Name	Number of Papers include experiential learning through project work
1	B.A in Marathi	5
2	B.A in English	6
3	B.A in History	5
4	B.A in Economics	5
5	BCA in Computer Application	2
6	B.A. II, Environmental Studies	1
7	B.Com. II, Environmental Studies	1
8	BCA II, Environmental Studies	1
9	B.Sc. II, Environmental Studies	1
	Total	27

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Incharge Principal
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Ref. No.:

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Year 3: 2018-19

Sr. No.	Programme Name	Number of Papers include experiential learning through project work
1	B.A in Marathi	5
2	B.A in English	6
3	B.A in History	5
4	B.A in Economics	5
5	BCA in Computer Application	2
6	B.A. II, Environmental Studies	1
7	B.Com. II, Environmental Studies	1
8	BCA II, Environmental Studies	1
	Total	26

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Date: - 1/10/2021

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Year 4: 2017-18

Sr. No.	Programme Name	Number of Papers include experiential learning through project work
1	B.A in Marathi	5
2	B.A in English	6
3	B.A in History	5
4	B.A in Economics	5
5	BCA in Computer Application	2
6	B.A. II, Environmental Studies	1
7	B.Com. II, Environmental Studies	1
8	BCA II, Environmental Studies	1
	Total	26

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Date: - 11/10/2022

Certificate

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Year 5: 2016-17

Sr. No.	Programme Name	Number of Papers include experiential learning through project work
1	B.A in Marathi	5
2	B.A in English	6
3	B.A in History	5
4	B.A in Economics	5
5	BCA in Computer Application	2
6	B.A. II, Environmental Studies	1
7	B.Com. II, Environmental Studies	1
8	BCA II, Environmental Studies	1
	Total	26

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3. tabulated list of programs having experimental learning through project work/field work/internship program wise, for all 5 assessment years, showing sl. no., name of program, no. of. students, department, date, year and duration, and year, in excel sheet, attested by principal.

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Ref. No.:

Date: 01/10/2022

1.3.2 Average percentage of courses that include experiential learning through project work/field work/internship during last five years (10)

Sr. No.	Program name	Number of Students	Department	Year	Duration
1	B.A III	14	B.A III Marathi	2020-21	1 Month
2	B.A III	11	B.A III English	2020-21	1 Month
3	B.A III	18	B.A III History	2020-21	1 Month
4	B.A III	19	B.A III Economics	2020-21	1 Month
5	BCA III	13	BCA III Computer Application	2020-21	1 Month
6	B.Sc. III	47	B.Sc. III Chemistry	2020-21	1 Month
7	B.Sc. III	4	B.Sc. III Zoology	2020-21	1 Month
8	B.Sc. III	2	B.Sc. III Computer Science	2020-21	1 Month
9	B.A II	58	B.A. II Environmental	2020-21	1 Month
10	B.Com II	36	B.Com. II Environmental	2020-21	1 Month
11	BCA II	26	BCA II Environmental	2020-21	1 Month
12	B.Sc II	63	B.Sc. II Environmental	2020-21	1 Month
			2019-20		
1	B.A III	12	B.A III Marathi	2019-20	1 Month
2	B.A III	11	B.A III History	2019-20	1 Month
3	B.A III	12	B.A III Economisc	2019-20	1 Month
4	B.A III	14	B.A III English	2019-20	1 Month
5	BCA III	20	BCA III Computer Application	2019-20	1 Month
6	B.A II	66	B.A.II Environmental	2019-20	1 Month
7	B.Com II	28	B.Com. II Environmental	2019-20	1 Month
8	BCA II	15	BCA II Environmental	2019-20	1 Month
9	B.Sc II	37	B.Sc. II Environmental	2019-20	1 Month

Incharge Principal

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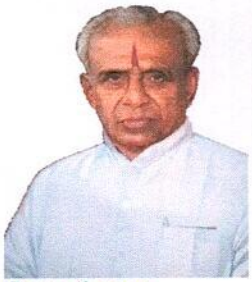

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Ref. No.:

Date: -

Year-2018-19					
1	B.A III	10	B.A III Marathi	2018-19	1 Month
2	B.A III	11	B.A III History	2018-19	1 Month
3	B.A III	11	B.A III Economisc	2018-19	1 Month
4	B.A III	14	B.A III English	2018-19	1 Month
5	BCA III	16	BCAIII Computer Application	2018-19	1 Month
6	B.A II	61	B.A. II Environmental	2018-19	1 Month
7	B.Com II	34	B.Com.II Environmental	2018-19	1 Month
8	BCA II	18	BCA II Environmental	2018-19	1 Month
Year-2017-18					
1	B.A III	10	B.A III Marathi	2017-18	1 Month
2	B.A III	11	B.A III History	2017-18	1 Month
3	B.A III	17	B.A III Economisc	2017-18	1 Month
4	B.A III	10	B.A III English	2017-18	1 Month
5	BCA III	31	BCAIIIComputer Application	2017-18	1 Month
6	B.A II	53	B.A. II Environmental	2017-18	1 Month
7	B.Com II	33	B.Com. II Environmental	2017-18	1 Month
8	BCA II	21	BCA II Environmental	2017-18	1 Month
Year-2016-17					
1	B.A III	11	B.A III Marathi	2016-17	1 Month
2	B.A III	14	B.A III HIstory	2016-17	1 Month
3	B.A III	24	B.A III Economisc	2016-17	1 Month
4	B.A III	14	B.A III English	2016-17	1 Month
5	BCA III	21	BCA III Computer Application	2016-17	1 Month
6	B.A II	57	B.A. II Environmental	2016-17	1 Month
7	B.Com II	39	B.Com. II Environmental	2016-17	1 Month
8	BCA II	27	BCA II Environmental	2016-17	1 Month

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Incharge Principal
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Dist.Sangli.

4. attendance sheet/certificate of successful completion of project work/internship/field work by competent authority of the organizations where project work/internship/field work is done, indicating the period with signature of students, attested by Principal.

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Establishment: -1998
President
Hon. Arun Ganpati Lad
Incharge Principal
Dr. P. B. Lad
M.A., Ph.D.

Ref. No.:

Date: - 25/3/2024

Certificate

This is to certify that following students from department of English, during the academic year 2020-21 have submitted STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr No.	Student Name
1	KADAM ABHIJEET UDDHAV
2	BADARE NILAM DNYANDEV
3	KALE SHUBHAM SATISH
4	KOLI AJAY ADHIKRAO
5	KOLI ANKIT MAHADEV
6	KUMBHAR VARSHA KHANDERAO
7	SAWANT DIGVIJAY SIDHDARTH
8	YADAV PRASAD DATTATRAYA
9	YADAV SWATI GANPATI
10	HOWAL PANKAJ GAUTAM
11	LAD SANIRAJ MANIK

(Dr. B. D. Waghmare)
HoD

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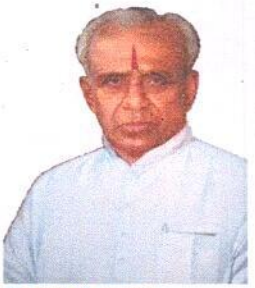

Incharge Principal
Dr. P. B. Lad
M.A., Ph.D.

Ref. No.:

Date: - 25/3/2024

Certificate

This is to certify that following students from department of History, during the academic year 2020-21 have successfully completed STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Buchade Vikas Manik
2	Gavali Omkar Popat
3	Gotpagar Amar Ranjendra
4	Howal Chetan Shashikant
5	Howal Rohit Ramesh
6	Jadhav Sanchita Sunil
7	Jagtap Amoit Ganpat
8	Lad Amol Dilip
9	Lad Ranjeet Sambhaji
10	Madane Omkar Satish
11	Mahind Ankita Mohan
12	Mohite Nikhil Tatyaso
13	Pawar Abhijeet Mukundrao
14	Ritankav Sumit Sampat
15	Salunkhe Laxman shashikant
16	Edake Komal Dadaso
17	Parte Rupali Rangrao
18	Kshirsagar Ayesha Bapu

(Dr. V . R. Mane)

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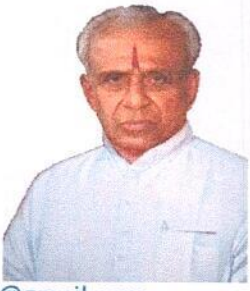

Incharge Principal
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Ref. No.:

Date: - 25/3/2021

Certificate

This is to certify that following students from department of Marathi, during the academic year 2020-21 have successfully completedSTUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr No.	Student Name
1	Jadhav Sangram Subhash
2	JamdadeSushilkumarSambhaji
3	Karde Pratik Tanaji
4	Lad Saurabh Anil
5	Mohite Sangram Dnyandev
6	Nagavkar Komal Mukund
7	Patil Kishor Damaji
8	Pawar Vikrant Jayvant
9	Sawant Kiran Narayan
10	SolwandeKrishnu Pandit
11	Tadake Komal Sanjay

(Dr. D.M. Honmane)

HoD

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Principal
DR. P. B. Lad
M.A. Ph.D.

Ref. No.:
25/3/2024

Date: -

Certificate

This is to certify That flowing students from department of Economics, during the academic year2020-21 have submitted students group projects as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name of students
1	Chapekar Pranav Jayant
2	Deshmukh Prasad Prakash
3	Garje Vishal Anil
4	Gorad Shridhar Satish
5	HovalAkshata Vasant
6	Jadhav RushikeshTanaji
7	Jadhav Vittal Bharat
8	Jankar Komal Samaji
9	KumbharSmita Sunil
10	Lad Jayraj Shankar
11	Lad Sandesh Ajit
12	Mali Pranav Chandrakant
13	Mali SataymParashant
14	Nikam Amrut Jaysing
15	Patil Rushikesh Anil
16	Shinde Girish
17	Shinde SuhasDilip
18	Suryawashi Omkar Maruti
19	Thorbole Shubham Suresh

Incharge Principal
Krantiagrani Dr.G.D.Bapu Lad
Mahavidyalaya,Kundal
Tal.Palus.Dist.Sangli

K.G.D.L. College, Kundal ★ Tal.Palus.Dist.Sangli ★

Dr. M. G. sadamate
Head of Department

Gandhi Education Society's
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President
Hon. Arun Ganpati Lad
Ph. No (02346) 271720
Website – www.kgdbapuladcollege.in
Email:- kgdblm@gmail.com

Incharge Principal
Dr. P. B. Lad
M.A., B.Ed., Ph.D.

Ref. No.:

Date: - 25/3/2021

Certificate

This is to certify that following students from department of Computer Application, during the academic year 2020-21 have submitted STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Student List	Project Title	Guide Name
1	Jangam Vaishnavi Ramesh Dudhal Ashwini Ashok Bhise Shivani Suresh	Online Real Estate Management	Mr. A. A. Shinde
2	Sathe Pooja Shankar Kshirsagar Aarti Bapu Pawar Divya Dhanaji Sawant Pritija Mahendra	Online Cars Booking	Mr. A. A. Shinde
3	Thorbole Pratap Kisan Sarwade Rutik Dagadu Yadav Pradip Maruti	Online Café	Mr. A. A. Shinde
4	Khot Nilesh Rajaram Bansode Hrutvik Suresh Mali Mahindra Gajanan	Jeevan Medical Management System	Mr. A. A. Shinde

(Mr.S.P.Nalawade)
HOD H.O.D.
Computer Department.
Krantiagrani G.D.Bapu Lad College
Kundal.Tal:Palus.Dist:Sangli

Incharge Principal
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Incharge Principal
Dr. P. B. Lad
M.A., B.Ed, Ph.D.

Ref. No.:

Date: - 25/3/2024

Certificate

This is to certify that following student from B.A II Environmental Studies, during the academic year 2020-21have successfully completedSTUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	GavdeAvadhutVishanu
2	Aadke Omkar Vikas
3	Aqa Manudin Nasar
4	Bad Dnyaneshwar Balu
5	Banne AvdhutBaswant
6	Bansode Aniket Maruti
7	Bavade Archana Krushna
8	Chavan DipaliHanmant
9	Chavan Radha Vijay
10	DawkareAakash Manohar
11	DhokaleMeghaHanmant
12	Dubal Jaydeep Jaywant
13	Edake Swarup Shriram
14	Ghadage Archana Vijay
15	GhadageSatyajeet Suresh
16	Gujale Atul Jaivan
17	Hatale Shivaji Uttam
18	Howal Shubham Prakash
19	Jadhav Akshay Mohan
20	Jadhav Aniket Baban
21	Jadhav Ganesh Arjun
22	Jadhav Pratik Ashok
23	Joshi Ajankya Anil
24	Kadam Omkar Mansing
25	Kale Arati Suresh

Subject Teacher

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Incharge Principal
Dr. P. B. Lad
M.A., B.Ed, Ph.D.

Ref. No.:

Date: - 25/3/2024

Sr.No.	Name
26	Kale Komal Sudam
27	Kale ShobhitJaykar
28	KambharRushikesh Jaywant
29	Kangvde Sagar Balaso
30	Kare Abhijeet Madhukar
31	Katkar Sahyadri Sanjay
32	Koli Vijay Shibaji
33	Kulkarni Pradnya Ramesh
34	Lad MayariBalasaheb
35	Lad Aniket Vilas
36	Madane Sani Satish
37	Mali Dattatray Somling
38	Mane Jayashri Janardhan
39	Mohite JyoisnaRagendra
40	Mohite PruthvirayBalkrushna
41	Mohite Sagar Shivaji
42	Mundewadi Vaishnavi Mohan
43	NalavadeSnehal Sunil
44	Patil Abhijeet Ganpati
45	Pawar Varsha Sarjerao
46	Sathe Narayan Baburao
47	Sathe Sushant Yashwant
48	Sawant Ajinky Gorkha
49	Sawant Kajal Chandrkant
50	Sawant Pragti Suryakant
51	Sawant Rushikesh Subhash
52	Sawant Rutujayogesh
53	Shinde Rushikesh Vijay

Subject Teacher

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Principal
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Incharge Principal
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M.A., B.Ed, Ph.D.

Ref. No.:

Date: - 25/3/2024

Sr.No.	Name
54	Sutar Virat Santaji
55	Thorbole Aniket Kakaso
56	Thorbole Pratik Kisan
57	Thorbole Sujata Ashok
58	VarudeMayariBhikaji

Teacher Incharge

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Incharge Principal
Dr. P. B. Lad
M.A., B. Ed, Ph.D.

Ref. No.:

Date: - 25/3/2024

Certificate

This is to certify that following student from B.Com. II Environmental, during the academic year 2020-21have successfully completedSTUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	BhopaleShubhagiChandrkant
2	Babar RushikeshHanmant
3	Chavan GouravDevabal
4	Dhere Pooja Dattatrya
5	Hushare Madhuri Parshuram
6	Jadhav Jeevan Jaywant
7	Jadhav Anurag Subhash
8	Jadhav Nishigandha Ashok
9	Jadhav PruthmeshJalindhar
10	JangmRushikeshPlallilarurjun
11	Kabugade Omkar Dinkar
12	Kadam Sonal Ravindra
13	Kale Ganesh Nanaso
14	KamblePrafull Jaganath
15	Kumbhar Sneha Bajrang
16	LipareSudamJagamath
17	Mali Archana Rajaram
18	Mane sakshiJambukumar
19	Mulla Sufiya Ansar
20	Patil Ankita Mahadev
21	Patil RatujaTanaji
22	Patole Ashwini Bhaskar
23	Pawar Akash Nagnath
24	Pawar Nikita Prakash
25	Pawar Pradnya Prakash

Teacher Incharge

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Ref. No.:

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Sr.No.	Name
26	Pawar Pratikha Suresh
27	Pawar Priyanka Ashok
28	Pawar SayaliSambhaji
29	Ritankar Reshmi Ravindra
30	Saah Dhananjay Sharmanand
31	Sawant Pratibha Adhik
32	ShirkeHarshalShankur
33	Surve Dipak Shankar
34	Tamboli Samira Rafik
35	Topkar Sujata Sateri
36	Varude Amruta Subhash

Teacher Incharge

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Incharge Principal
Dr. P. B. Lad
M.A., B.Ed., Ph.D.

Ref. No.:

Date: - 25/3/2021

Certificate

This is to certify that following student from BCA II Environmental, during the academic year 2020-21have successfully completedSTUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	AVAGHADE MANALI RAJU
2	DUBAL VISHWAJEET JAYSING
3	GADACHE ONKAR DHANANJAY
4	HONMANE PRITI SANJAY
5	JANGAM ALANKAR SANJAY
6	KADAM TUSHAR DATTATRAY
7	KALE VAISHNAVI GAUTAM
8	KHURASANE TEJAL VIJAY
9	KURALE RUSHIKESH HANMANT
10	LAD BHARATI RAJENDRA
11	MAHAPURE ADARSH MANIK
12	MAHIND SURAJ SHIVAJI
13	MOHITE AKANKSHA BALASO
14	MOHITE AMOL RAMESH
15	MOHITE TEJAL SHANKAR
16	MORE ANIKET KRISHNAT
17	MORE NAMRATA ARUN
18	MORE PRAJWAL RAJENDRA
19	PATIL ARATI ASHOK
20	PATIL KAJAL RAJENDRA
21	SALUNKHE SNEHAL VASANT
22	SAWAT MALLESHWARI NIVAS
23	SHELAR AKSHAY MANU
24	SHIRTODE VAISHALI RAYABA
25	VADAR RAVINDRA MARUTI
26	WAGHMARE SOURAV NAGNATH

Teacher Incharge

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Incharge Principal
Krantiagrani Dr.G.D.Bapu Lad

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Incharge Principal
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Ref. No.:

Date: - 25/3/2024

Certificate

This is to certify that following students from B.Sc. II Environmental, during the academic year 2020-21 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	AVAGHADE PALLAVI SHIVAJI
2	AVATE NIKHIL PRAKASH
3	BAKARE VISHWAJEET NAMDEV
4	BHAGAWAT ADITI DATTA
5	CHAVAN DIGVIJAY ARJUN
6	CHAVAN POOJA HANMANT
7	DESAI ASHITOSH HARIBHAU
8	DESHMUKH RAVIRAJ BHARAT
9	DUKE VAISHALI SURESH
10	DUPATE ABHISHEK RAJENDRA
11	GAIKWAD SANJANA SANJAY
12	GAVADE SHUBHAM DIPAK
13	GAYKWAD SNEHAL SACHIN
14	GHORAPADE RUTUJA CHANDRAKANT
15	GURAV SOMNATH BHAIRUNATH
16	HONMANE PRANAV DHANAJI
17	JADHAV AKASH ARJUN
18	JADHAV MANGESH DHANAJI
19	JADHAV PRANAV SUBHASH
20	JADHAV VARSHA LALASO
21	KARANDE AKASH SUKUMAR
22	KATKAR PUNAM DINESH
23	LAD AKSHAY AMAR
24	LAD NIKHIL RAJENDRA
25	LAD PRAJAKTA SANJAY

Teacher Incharge

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Incharge Principal
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Incharge Principal
Dr. P. B. Lad
M.A., B.Ed, Ph.D.

Ref. No.:

Date: - 25/3/2024

Sr.No.	Name
26	LAD RASIKA SHIVAJI
27	LAD ROHAN MAHADEV
28	LIPARE DINESH RAJENDRA
29	MAHADIK GANESH PANDURANG
30	MALI AKASH SAMBHAJI
31	MALI ARATI GAJANAN
32	MOHITE AKSHAY MOHAN
33	MOHITE ANIKET SHANKAR
34	MOHITE NIRANJAN RAJENDRA
35	MOHITE PRASHANT BHAGWAN
36	MOHITE SHUBHAM SHANKAR
37	MOHITE VINAYAK SHANKAR
38	MORE KIRAN SHRIRANG
39	MULIK SANSKAR SANJAY
40	NALAWADE MAYURI SANJAY
41	PARIT SAUMED BHIKAJI
42	PATIL ARYAN DAULAT
43	PATIL PRANAV PRAKASH
44	PATIL SHUBHAM PRAVIN
45	PATIL SUNNY SANJAY
46	PATOLE PRANITA JAGANNATH
47	PATOLE SALONI BHASKAR
48	PAWAR AISHWARYA SHIVAJI
49	PAWAR NITIN MADHUKAR
50	PAWAR SHIVJEET ARUN
51	PAWAR SUPRIYA RAMESH
52	PAWAR YUVRAJ MAHADEV
53	POTDAR SARANG KIRAN
54	RAWAL VISHWAJEET SHIVAJI
55	SANKPAL PRAJWAL YUVRAJ
56	SAWANT CHAITRNYA DATTATRAYA

Teacher Incharge

K.G.D.L. College, Kundal, Tal. Palus, Dist. Sangli

Principal
Incharge Principal
Krantiagrani Dr.G.D.Bapu Lad

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Incharge Principal
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Ref. No.:

Date: - 25/3/2021

Sr.No.	Name
27	PAWAR SUPRIYA RAMESH
28	PAWAR YUVRAJ MAHADEV
29	POTDAR SARANG KIRAN
30	RAWAL VISHWAJEET SHIVAJI
31	SANKPAL PRAJWAL YUVRAJ
32	SAWANT CHAITRNYA DATTATRAYA
33	SAWANT SIDDHARTH ADHIKRAO
34	SAWANT SUNNY SANJAY
35	SHIKALGAR IRFAN SIKANDAR
36	SUTAR TUSHAR SHANKAR
37	TAPKIRE NILESH JANARDHAN
38	THORAT SAURABH ARVIND
39	YADAV PRATIK DIPAK

Teacher Incharge

K.G.D.L College, Kundal Tal.Palus.Dist.Sangli

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Incharge Principal
Dr. P. B. Lad
M.A., Ph.D.

Ref. No.:

Date: - 25/3/2024

Certificate

This is to certify that following students from department of Chemistry, during the academic year 2020-21 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Patil Sanket Sambhaji
2	Sarika ramdas bachal
3	Hubale Rahul Jagannath
4	Aniket subhash mohite
5	Sahil maulana pathan
6	Sachin Ananda Honmane
7	Sony krishna lad
8	Mali Shubham Ajay
9	Vikrant vishvas pawar
10	Ghashi Swaliya Yusufali
11	Mayuri Shankar Kumbhar
12	Ankita Dhanaji Nalage
13	Vaishnavi sunil salunkhe
14	Rupali Natha Pawar
15	Suraj Ganesh Kamble
16	Vaibhav Namdev Dhanawade
17	Rohit Sarjerao Mane
18	Aniket Dilip kadam
19	Pruthviraj vishwas patil
20	Sourabh Mahadev Koli
21	Sourabh Mahadev koli
22	Shubham Dipak mane
23	Aniket Rajesh Chavan
24	Ganesh Jotiram Salunkhe
25	Vaibhav sambhaji sawat

(Mr. P.D. Kamble)
HoD

K.G.D.L. College, K. Tal Palus, Dist. Sangli

Principal

Incharge Principal

Gandhi Education Society Kundal's
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Incharge Principal
Dr. P. B. Lad
M.A., Ph.D.

Ref. No.:

Date: - 25/3/2024

Certificate

This is to certify that following students from department of Chemistry, during the academic year 2020-21 have successfully completed STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
26	Vishvajeet balvant Jadhav
27	Dattatraya arvind jadhav
28	Abhijeet Arun mohite
29	Abhishek suresh pawar
30	Ganesh Hanmant Jadhav
31	Pritam Kadam
32	Dattatraya arvind jadhav
33	Priyanka Dasharath Bhosale
34	Sakshi Vijay Lad
35	Mandale Supriya Vasant
36	Aishwarya Subhash Mane
37	Snehal shivaji valekar
38	Raviraj Yuvraj Suryawanshi
39	Pranav Ganesh Pawar
40	Omkar Viaks Sandage
41	Sawant Swapnil shahaji
42	Sanket sambhaji suryawanshi
43	Manthan Manohar Pawar
44	Ajay vasant chavan
45	Suraj Pradip jadhav
46	Shailesh Krishnat Pawar
47	Nikhil rajendra mohite
48	Prashant Satish mohite

(Mr. P.D. Kamble)
HoD

K.G.D.L. College, Kundal, Tal Palus, Dist. Sangli

Principal
Incharge Principal
Krantiagrani Dr.G.D.Bapu Lad

Gandhi Education Society Kundal's
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Incharge Principal
Dr. P. B. Lad
M.Sc., Ph.D.

Ref. No.:

Date: 25/3/2021

Certificate

This is to certify that following students from department of Computer Science, during the academic year 2020-21 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Narayan Changdev Koli
2	Nikhil Anil Jadhav

(Mrs. S.L. Nalawade)
HoD

K.G.D.L. College Kundal Tal Palus Dist Sangli

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Incharge Principal
Dr. P. B. Lad
M.Sc., Ph.D.

Ref. No.:

Date: -25/3/2024

Certificate

This is to certify that following students from department of Zoology, during the academic year 2020-21 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Potdar Shivani Ulhas
2	Mali Shubham Vikas
3	Lad Akshay Amar
4	Potdar Sarang Kiran
5	Parbat Omkar Vijay

(Mrs. S. B. Lad)
HoD

K.G.D.L. College, K.undal * Tal.Palus.Dist.Sangli *

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Incharge Principal
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Incharge Principal
Dr. P. B. Lad
M.A., Ph.D.

Ref. No.:

Date: - 28/3/2020

Certificate

This is to certify that following students from department of English, during the academic year 2019-20 have submitted STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	Walikar Kaveri Shekappa
2	Gotpagar Prajakta Vikas
3	Jadhav Dipali Balaso
4	Thombare Ajit Ashok
5	Jadhav Pratiksha Pandurang
6	Kale Vrushali Sudam
7	Mahind Suraj Sanjay
8	Pawar Harshal Popatrao
9	Gotpagar Aishwarya Prakash
10	Kudalkar Nisha Popat
11	Salagar Prajakta Shivaji
12	Adsule Minakshi Ashok
13	Manglekar Akira Aslam
14	Marale Madhuri Dhanaji

(Dr. B. D. Waghmare)
HoD

K.G.D.B. College, Kundal ★ Tal.Palus.Dist.Sangli ★

Incharge Principal
Krantiagrani Dr.G.D.Bapu Lad
Mahavidyalaya,Kundal.
Tal.Palus.Dist.Sangli.

Gandhi Education Society Kundal's
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President
Hon. Arun Ganpati Lad
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Website – www.kgdbapuladcollege.in
Email:- kgdblm@gmail.com

Incharge Principal
Dr. P. B. Lad
M.A., Ph.D.

Ref. No.:

Date: - 28/3/2020

Certificate

This is to certify that following students from department of History, during the academic year 2019-20 have successfully completed STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Lokare Vrushab Vikas
2	Mahind Rushikesh Sanjay
3	Mane Priyanka Vitthal
4	Madane Priyanka Satish
5	Lad Shivaji Ashok
6	Jadhav Snehal Shantaram
7	Lad Dhiraj Bhaskar
8	Lad Vishwajit Hanmant
9	Lad Kirun Uttam
10	Barbole Akshay Bhimarao
11	Patil Ashish Baban

(Dr. V . R. Mane)

K.G.D.B.L. College, Kundal ★ Tal.Palus, Dist.Sangli ★ (EPUN)

Incharge Principal
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Mahavidyalaya,Kundal.
Tal.Palus.Dist.Sangli.

Gandhi Education Society Kundal's
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Incharge Principal
Dr. P. B. Lad
M.A., B.Ed, Ph.D..

Ref. No.:

Date: - 28/3/2020

Certificate

This is to certify that following students from department of Marathi, during the academic year 2019-20 have successfully completedSTUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	Jadhav Ashitosh Akash
2	Jadhav Harshal Digambar
3	Jadhav Suraj Pandurang
4	Lad Pranali Mohan
5	Lad Prasidhi Prakash
6	Lad Snehal Sanjay
7	MadaneGorakhBalu
8	Madane Kajal Pandurang
9	Mane ShubhangiVitthal
10	NaraleTanajiBhimarav
11	Pawar Sujata Dipak
12	Shinde Suraj Hanmant
13	SolwandeAkshay Rajaram

(Dr. D.M. Honmane)
HoD

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Incharge Principal
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Principal
DR. P. B. Lad
M.A. Ph.D.

Ref. No.: 28/3/2020

Date: -

Certificate

This is to certify That flowing students from department of Economics, during the academic year2019-20 have submitted students group projects as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name of students
1	More Abhijit Bajirav
2	Jadhav Sunny Chandrakant
3	PatoleSuhasaniJalindar
4	Edake Shivaji Shankar
5	MadaneIndrajitAtmaram
6	Lad Sujit Vijay
7	Patil MeghaPadurang
8	Nalawade Surekha Sagar
9	Jadhav Komal Bapu
10	Pawar Rakesh Rajendra
11	Pawar Suraj Saurabh
12	Kshirsagar Abhishek Sanjay

Incharge Principal
Krantiagrani Dr.G.D.Bapu Lad
Mahavidyalaya,Kundal
Tal.Palus.Dist.Sangli.

K.G.D.B. College Kundal Tal.Palus.Dist.Sangli

Dr. M. G. sadamate
Head of Department

Gandhi Education Society's
Krantiagrani Dr. G. D. Bapu Lad Mahavidyalaya, Kundal
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Email:- kgdblm@gmail.com

Incharge Principal
Dr. P. B. Lad
M.A., B.Ed., Ph.D.

Ref. No.:

Date: - 28/3/2020

Certificate

This is to certify that following students from department of Computer Application, during the academic year 2019-20 have submitted STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Student List	Project Title	Guide Name
1	Bhise Komal Vilas Pawar Swapnali Arun Thorble Snehal Sanjay	Online Nursery Management	Mr. A. A. Shinde
2	Dubal aishwarya Jayshing Jangam Anjali Ashok Thorat Snehal Nishikant	Online Gas Booking Management	Mr. A. A .Shinde
3	Hadadare Sujay Krishna Londe Rohit Vinayak	Online College Management System	Mr. A. A. Shinde
4	Mali Aniket Sudam Kadam Akshaykumar Balaso Pawar Rushikesh Ashok	Online Book Management System	Mr. S. P. Nalawade
5	Patil Komal Kishor Mali Mrunali Shankar	Online Tutorial Management System	Mr. S. P. Nalawade
6	Patil Shivraj Narendra Chavan Sachin Sambhaji Lad Harshal Sachin	Online Shoping Management System	Mr. S. P. Nalawade
7	Khade Dhanjay Dattatray Pawar Shubham Hanmant Sawant Sushant Sampat	Online Gym Management System	Miss. D. R. Mane

(Mr. S. P. Nalawade)
H.O.D.
Computer Department.
Krantiagrani G.D.Bapu Lad College
Kundal.Tal:Palus.Dist:Sangli.

HOD

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Incharge Principal
Dr. P. B. Lad
M.A., B.Ed, Ph.D.

Ref. No.:

Date: - 28/3/2020

Certificate

This is to certify that following student from B.A II Environmental Studies, during the academic year 2019-20 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	BADARE NILAM DNYANDEV
2	BUCHADE VIKAS MANIK
3	CHAPHEKAR PRANAV JAYANT
4	DESHMUKH PRASAD PRAKASH
5	DESHMUKH RAHUL RAMESH
6	CHAVAN PARIMAL LAXMAN
7	EDAKE KOMAL DADASO
8	EDAKE VIKI DILIP
9	GARJE VISHAL ANIL
10	GAVADE ATUL BHANUDAS
11	GAVADE SUMIT DINKAR
12	GAVALI OMKAR POPAT
13	GORAD SHRIDHAR SATISH
14	GOTPAGAR AMAR RAJENDRA
15	GURAV KUNDLIK HANMANT
16	HOWAL AKSHATA VASANT
17	HOWAL ROHIT RAMESH
18	HOWAL PANKAJ GAUTAM
19	JADHAV GANESH GUNVANT
20	JADHAV SANCHITA SUNIL
21	JADHAV SANGRAM SUBHASH
22	JAGTAP AMIT GANPAT
23	JAKUNE RAHUL RAMANNA
24	JAMDADE SUSHILKUMAR SAMBHAJI
25	KADAM ABHIJEET UDDHAV

Subject Teacher

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Incharge Principal
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Sr.No.	Name
26	KALE SHUBHAM SATISH
27	KAMBLE SUMIT SURYAKANT
28	KARADE PRATIK TANAJI
29	KOLI AJAY ADHIKRAO
30	KOLI ANKIT MAHADEV
31	KSHISAGAR AYESHA BAPU
32	KUMBHAR VARSHA KHANDERAO
33	LAD JAYRAJ SHANKAR
34	LAD RANJEET SAMBHAJI
35	LAD RUSHIKESH ARJUN
36	LAD SANDESH AJIT
37	LAD SOURAV ANIL
38	MADANE KISHOR SHASHIKANT
39	MADANE OMKAR SATISH
40	MADANE SAGAR BAPUSAHEB
41	MAHIND ANKITA MOHAN
42	MAHIND PRAVIN PANDURANG
43	MALI PRANAV CHANDRAKANT
44	MALI RAJBANDINI SANJAY
45	MALI SATYAM PRASHANT
46	MOHITE NIKHIL TATYASO
47	MOHITE SANGRAM DNYANDEV
48	NAGAVKAR KOMAL MUKUND
49	NALAGE VISHVARAJEET ARJUN
50	PATHAN JAVED
51	PATIL KISHOR DAMAJI
52	PAWAR ABHIJEET MUKUNDRAO
53	PAWAR VIKRANT JAYWANT
54	SALUNKHE LAXMAN SHASHIKANT

Subject Teacher

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Dr. P. B. Lad
M.A., B.Ed, Ph.D.

Ref. No.:

Date: - 28/3/2020

Sr.No.	Name
55	SALUNKHE NIKHIL POPAT
56	SANKPAL AMIOL DATTATRAYA
57	SATHE AMOL SUBHASH
58	SAWANT DIGVIJAY SIDHDARTH
59	SAWAT KIRAN NARAYAN
60	SHINDE SUHAS DILIP
61	SHINDE GIRISH EKNATH
62	SURYAVANSHI OMKAR MARUTI
63	TADAKHE KOMAL SANJAY
64	THORBOLE SHUBHAM SURESH
65	YADAV PRASAD DATTATRAYA
66	YADAV SWATI GANPATI

Subject Teacher

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Incharge Principal
Dr. P. B. Lad
M.A., B. Ed, Ph.D.

Ref. No.:

Date: - 28/3/2020

Certificate

This is to certify that following student from B.Com. II Environmental, during the academic year 2019-20 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Barge Heevanvasant
2	Buchade Vishal Dilip
3	Chavan TejshreeUttam
4	DubalSatyeshwari Sanjay
5	Ghadage Prajwal Jaywant
6	Jadhav Vikram Sopan
7	Kambal Akash Cithoba
8	Kurkure Monika Pravin
9	Lad Aishwarya Sushant
10	Lad Santosh Laxman
11	Madane Aditi Kiran
12	Mali Anjali Prakash
13	Mandale Aira Uttam
14	Mane Sagar shailesh
15	Mohite Prakash Shankar
16	Mohite Vishal Shankar
17	Patil Pratiksha Vilas
18	Patil Revatiramachandra
19	Pawar Amruta Shivraj
20	Pawar Amruta Tanaji
21	Pawar Rohit Sanjay
22	Pawar SayaliZunzar
23	Pawar ShivtejDilip
24	Pawar Swapnalisanjay
25	Purohit NareshkaumarOtaranija

Teacher Incharge

K.G.D.B.L. College, Kundal ★ Tal Palus, Dist. Sangli ★

Principal

Incharge Principal
Krantiagrani Dr.G.D.Bapu Lad

Gandhi Education Society Kundal's
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Incharge Principal
Dr. P. B. Lad
M.A., B. Ed, Ph.D.

Ref. No.:

Date: - 28/3/2020

Sr.No.	Name
26	Rajpute Gauri Moreswar
27	Suryawanshi Abhijit Dilip
28	Vishal Dilip Bu

Teacher Incharge

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Principal

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Incharge Principal
Dr. P. B. Lad
M.A., B.Ed., Ph.D.

Ref. No.:

Date: - 28/3/2020

Certificate

This is to certify that following student from BCA II Environmental, during the academic year 2019-20 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	BANSODE RUTVIK SURESH
2	BHISE SHIVANI SURESH
3	DUDHAL ASHWINI ASHOK
4	JANGAM VAISHNAVI RAMESH
5	KHOT NILESH RAJARAM
6	KSHIRSAGAR ARATI BAPU
7	LAD PRADEEP SURESH
8	MALI MAHINDRA GAJANAN
9	PAWAR DIVYA DHANAJI
10	SARWADE RUTIK DAGDU
11	SAWANT PRITIJA MAHENDRA
12	SURYAVANSHI RUSHIKESH SHANKAR
13	THORBOLE PRATAP KISAN
14	WAGHMARE PRITIJA VIKAS
15	YADAV PRADIP MARUTI

Teacher Incharge

K.G.D.L.College.Kundal Tal.Palus.Dist.Sangli

Principal

Incharge Principal
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Tal.Palus.Dist.Sangli.

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Incharge Principal
Dr. P. B. Lad
M.A., B.Ed, Ph.D.

Ref. No.:

Date: - 28/3/2020

Certificate

This is to certify that following students from B.Sc. II Environmental, during the academic year 2019-20 have successfully completed STUDENTSGROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	BACHAL SARIKA RAMDAS
2	BHOSALE PRIYANKA DASHARATH
3	GHASHI SWALIYA YUSUFALI
4	HONMANE SACHIN ANANDA
5	HUBALE RAHUL JAGANNATH
6	JADHAV DATTATRAYA ARVIND
7	JADHAV GANESH HANMANT
8	JADHAV MANGESH DHANAJI
9	JADHAV TUSHAR SURESH
10	JADHAV VISHVAJEET BALVANT
11	KADAM PRITAM PRAKASH
12	KHARAGE KANHAIYA NARENDRA
13	KOLI NARAYAN CHANGDEV
14	KOLI SOURABH MAHADEV
15	KUMBHAR MAYURI SHANKAR
16	LAD SAKSHI VIJAY
17	LAD SONY KRISHNA
18	MALI SHUBHAM AJAY
19	MALI TEJASWINI ANANDA
20	MANDALE SUPRIYA VASANT
21	MANE AISHWARYA SUBHASH
22	MANE PRASAD SAMBHAJI
23	MOHITE ABHIJEET ARUN
24	MOHITE ANIKET SUBHASH
25	MOHITE NIKHIL RAJENDRA

Teacher Incharge

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Principal

Incharge Principal
Krantiagrani Dr.G.D.Bapu Lad

Gandhi Education Society Kundal's
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Incharge Principal
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M.A., B.Ed, Ph.D.

Ref. No.:

Date: 28/3/2020

Sr.No.	Name
26	MOHITE PRASHANT SATISH
27	MOHITE SHUBHAM SHANKAR
28	MULLA AAMAN SHOUJAT
29	NALAGE ANKITA DHANAJI
30	PATHAN SAHIL MAULANA
31	PATIL SANKET SAMBHAJI
32	PAWAR ABHISHEK SURESH
33	PAWAR RUPALI NATHA
34	PAWAR SHAILESH KRISHNAT
35	PAWAR VIKRANT VISHVAS
36	SALUNKHE VAISHNAVI SUNIL
37	SURYAWANSHI RAVIRAJ YUVRAJ

Teacher Incharge

Principal

Incharge Principal
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Principal
Dr. K.M.Nalawade
M.Sc., Ph.D.

Ref. No.:

Date: - 26/3/2019

Certificate

This is to certify that following students from department of English, during the academic year 2018-19 have submitted STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	Howal Anuradha Vikas
2	Jadhav Pradip Pandurang
3	Kumbhar Vaibhav Uttam
4	Jadhav Akshay Rajaram
5	Parale Amruta Jagdish
6	Chavan Shital Shahaji
7	Edake Nayan Nagesh
8	Lad Sagar Sanjay
9	Rakshe Pramod Manik
10	Chavan Avinash Shankar
11	Bhagat Rohini Suresh
12	Chavan Vikram Ashok
13	Dubal Shweta Shashikant
14	Sartape Ashwini Arun

(Dr. B. D. Waghmare)
HoD

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Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya, Kunda
Tal-Palus, Dist-Sangli

Gandhi Education Society's
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Principal
Dr. K.M.Nalawade
M.Sc., Ph.D.

Ref. No.:

Date: - 26/3/2019

Certificate

This is to certify that following students from department of History, during the academic year 2018-19 have successfully completed STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Patil Vishal Vijay
2	Pawar Ruturaj Poapatrao
3	Das Vinayak Anil
4	Thorbole Indrajit Jalindar
5	Nikam Vidhya Sambhaji
6	Tambewagh Umesh Ramesh
7	Patil bhagyashri Sadik
8	Kolekar Swapnil Haridas
9	Mahind Pruthaviraj Mohan
10	Suryawanshi Rohan Hanmant

(Mr. V . R. Mane)

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Principal
Dr. K. M. Nalawade
M Sc., M.Phil, Ph.D..

Ref. No.:

Date: - 26/3/2019

Certificate

This is to certify that following students from department of Marathi, during the academic year 2018-19 have successfully completed STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	SankpalShubhangi Dattatray
2	Gotpagar Ashwini Damu
3	Lad Pooja Jaywant
4	Sawat Seema Kisan
5	Nanvare Pooja Khandu
6	Kharge Saurabh Vijay
7	Thorbole Suraj Balasaheb
8	More Bharti Hindurao
9	Jaujal Chetan Sunil
10	Koli Poonam Mohan

(Dr. D.M. Honmane)
HoD

K.G.D.L.College,Kundal Tal.Palus,Dist.Sangli

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Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya,Kunda
Tal-Palus,Dist-Sangli

Gandhi Education Society's
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Tal Palus, Dist. Sangli 416309 (Maharashtra)
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Recognised under Section 2(f) & 12 (B) by University Grants Commission, New Delhi
Establishment: -1998 **NAAC REACCREDITED 'B' GRADE**
President Ph. No (02346) 271720
Hon. Arun Ganpati Lad Website – www.kgdbapuladcollege.in Email:- kgdblm@gmail.com

Principal
DR. K. M Nalawade
M.Sc. Ph.D.

Ref. No.:

Date: - 26/3/2019

Certificate

This is to certify That flowing students from department of Economics, during the academic year 2018-19 have submitted students group projects as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name of students
1	Babar Shailendra Rajesh
2	Nalage Mayuri Bhagwan
3	Mohite Seema Baban
4	Nalage Vaishnavi Shivaji
5	Devkate Vikas Datta
6	Yedage Rohit Krishnat
7	Patil Prabhakar Navnath
8	Lad Prakash Dilip
9	Jagam Onkar Dilip
10	Jadhav Omkar Vijay
11	Sawant Mahesh Hambirrao
12	Lad Akshay Sharad

Principal
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Mahavidyalaya, Kunda
Tal-Palus. Dist-Sangli.

K.G.D.B.L. College, Kundal ★ Tal.Palus.Dist.Sangli ★

Dr. M. G. Sadamate
Head of Department

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Email:- kgdblm@gmail.com

Principal
Dr. K. M. Nalawade
M.Sc., M.Phil., D.C.S., Ph.D.

Ref. No.:

Date: - 28/3/2019

Certificate

This is to certify that following students from department of Computer Application, during the academic year 2018-19 have submitted STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Student List	Project Title	Guide Name
1	Mane Aniket Shivaji	Online Blood Bank	Mr. S. P. Nalawade
	Kamble Sushant Suryakant		
2	Mali Onkar Avinash	Oneway.Cab	Mr. A. A. Shinde
	Mali Suraj Vittal		
3	Lad Dipali Sanjay	Online Car Booking	Mr. S. P. Nalawade
	Lad Dipali Bhaskar		
	Pawar Monika Mohan		
4	Pawar Rutuja Kiran	Online MPSC Academy	Mr. A. A. Shinde
	Shivpuje Anjali Balasaheb		
5	Patil Rutuja Ramchandra	Online Real Estate Management	Mr. A. A. Shinde
	Gadache Pratiksha Sanjay		
6	Awate Virashri Babasaheb	Online Hotel Management System	Miss. D. R. Mane
	Jangam Aishwarya Prakash		
	Kamble Diksha Gulab		
	Radaratti Ashwini Arajun		

(Mr.S.P.Nalawade)
H.O.D.
Computer Department.
Krantiagrani G.D.Bapu Lad College
Kundal.Tal:Palus.Dist:Sangli.

HOD

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Krantiagrani G.D.Bapu Lad
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Principal
Dr. K. M. Nalawade
M.Sc., M.Phil., Ph.D.

Ref. No.:

Date: - 26/3/2019

Certificate

This is to certify that following student from B.A II Environmental Studies, during the academic year 2018-19 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	AdsuleMinakshi Ashok
2	Bandage Sagar Ankush
3	BorboleAkshay Bhimrao
4	Chavan Nakusha Namdev
5	Chavan Abhijit Balaso
6	Dhere Sagar Dattatray
7	Edake Shivani Shankar
8	Gotpagar Aishwarya Prakash
9	Gotpagar Prajakta Vikas
10	Howal Chetan Shahsikant
11	Jadhav Ashitosh Akash
12	Jadhav DipaliBalaso
13	Jadhav Komal Babu
14	Jadhav Pratiksha Pandurang
15	Jadhav Sani Chandrkant
16	Jadhav Snehal
17	Jadhav Suraj Pandurang
18	JasdhavHarshal Digambar
19	Kale VrushaliSudam
20	KashirsagarAbhisekh Sanjay
21	Kudalkar Nisha Popat
22	Kumbhar Prajakta Popat
23	Lad Amol Dilip
24	Lad Dhiraj Bhasakar
25	Lad Kiran Uttam

Subject Teacher

Principal

Principal
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Ref. No.:

Date: - 26/3/2019

Sr.No.	Name
26	Lad Pranali Mohan
27	Lad Pranav Ramchandra
28	Lad Prashidhi Prakash
29	Lad Rohit Hanmant
30	Lad Shivaji Ashok
31	Lad ShrirajSachin
32	Lad Snehal Sanjay
33	Lad Sujit Vijay
34	Lad VishwajitHanmant
35	LokareVrushabh Vilas
36	Madane Priyanka Satish
37	MahindRushikesh Sanjay
38	Mahind Suraj Sanjay
39	Mane Priyanka Vitthal
40	Mane ShubhagiVitthal
41	Manglekar Alia Aslam
42	Marale Madhuri Dhanaji
43	Nalawade Surekha Sagar
44	NaraleTanaji Bhimrao
45	Patil Megha Pandurang
46	PatoleSuhasiniShahsikant
47	Pawar HarshalPopatrao
48	Pawar Rakesh Rajendra
49	Pawar Sachin Ananda
50	Pawar Sujata Dipak
51	Pawar Suraj Subhas
52	Pol Sourabh Shivaji
53	RitunakarSumitSampat
54	Satgar Prajakta Shivaji

Subject Teacher

Principal

Principal
Krantiagrani G. D. Bapu Lao

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Ref. No.:

Date: - 26/3/2019

Sr.No.	Name
55	Sawant Manoj Chandrakant
56	Shinde Komal Datatray
57	SolvandeAkshay Rajaram
58	Solvande Krishna Pandit
59	ThombareAjit Ashok
60	Wali Kaveri Shekappa
61	Yadav Swapnil Ravikumar

Subject Teacher

Principal

K.G.D.L. College, Tal. Palus, Dist. Sangli

Principal
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Tal-Palus, Dist-Sangli

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Principal
Dr. K.M. Nalawade
M.Sc., Mphil, Ph.D.

Ref. No.:

Date: -28/3/2019

Certificate

This is to certify that following student from B.Com. II Environmental, during the academic year 2018-19 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Chavan Radhika bhalchandra
2	Devkule Amit Nivas
3	Gaikwad Dipika Ashok
4	Gaikwad Manoj Sanjay
5	GavadeDhanashriBaban
6	Jadhav Pooja Jalindar
7	Jadhav Ravindra Prakash
8	Jamdade Anita Sawataram
9	Kadam Aishwarya Parshuram
10	KakatkarShubhagi Shashikant
11	Koli Bhakti Shivaji
12	Kulkarni Komal Gajanan
13	Mali Ganesh Prakash
14	Mali Tushar Mahadev
15	Marale Sushant Tanaji
16	MhetreGiridhar Bharat
17	Mohite Alnkar Ashok
18	NalawadeSwapnali Suresh
19	Nivale Omkar Mohan
20	Patil AkshayKumarAdhikrao
21	Pawar Abhaysinh
22	Pawar Akshay Prakash
23	Pawar Amit Sudam
24	Pawar Madhuri Rajaram
25	Pawar Shital Sanjay

Teacher Incharge

Principal

Principal

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M.Sc., Mphil, Ph.D.

Ref. No.:

Date: - 28/12/2019

Sr.No.	Name
26	Sanmukh Amruta Baban
27	Tamboli Aslam Rajak
28	Thobole Swati Sopan
29	Thorbole Adarsh Satish
30	Topkar
31	Varude Anjali Sanjay
32	ShiklgarKayuumRajjak
33	Mali Bharati Shivaji
34	Mali Rajeshwari Shivaji

Teacher Incharge

K.G.D.L. College, Kundal * Tal Palus, Dist Sangli

Principal

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Mahavidyalaya, Kundal
Tal-Palus. Dist-Sangli

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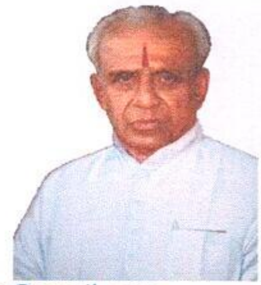
Email:- kgdblm@gmail.com



Incharge Principal

Dr. K. M. Nalawade

M.Sc, M.Phil., Ph.D.

Ref. No.:

Date: - 28/8/2019

Certificate

This is to certify that following student from BCA II Environmental Studies, during the academic year 2018-19 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	BHISE KOMAL VILAS
2	CHAVAN SACHIN SAMBHAJI
3	DUBAL AISHWARYA JAYSING
4	HADADARE SUJAY KRISHNA
5	JANGAM ANJALI ASHOK
6	KAMBLE LAKSHAMAN JAGANNATH
7	KAMBLE RUSHIKESH KIRAN
8	LAD HARSHAL SACHIN
9	LONDHE ROHIT VINAYAK
10	MALI ANIKET SUDAM
11	MALI MRUNALI SHANKAR
12	PATIL KOMAL KISHOR
13	PATIL SHIVRAJ NARENDRA
14	PAWAR RUSHIKESH ASHOK
15	SATHE KARTIK MAHESH
16	SAWAT ABOLI SANJAY
17	THORAT SNEHAL NISHIKANT
18	THORBOLE SNEHAL SANJAY

Teacher Incharge

Principal

Principal
Krantiagrani G. D. Bapu Lad
Mahavidayalaya, Kundal
Tal-Palus, Dist-Sangli

Gandhi Education Society's
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Ph. No (02346) 271720
Website – www.kgdbapuladcollege.in
Email:- kgdblm@gmail.com
Establishment: -1998
President
Hon. Arun Ganpati Lad
Principal
Dr. K.M.Nalawade
M.Sc., Ph.D.

Ref. No.:

Date: - 28/3/2018

Certificate

This is to certify that following students from department of English, during the academic year 2017-18 have submitted STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	Akade Akshay Satish
2	Deshmukh Vishu Baban
3	Devkule Manali Sambhaji
4	GawaleViragi Vijay
5	Jadhav Amruta Dadaso
6	Jadhav Sagar Dilip
7	Lad SatyajitVikas
8	Mali Komal Dashrath
9	Nayanit Dipali Niwas
10	Hingmire Nitin Deepak

(Dr. B. D. Waghmare)
HoD

K.G.D.B.L. College, K. Tal. Palus, Dist. Sangli

Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya, Kunda
Tal-Palus, Dist-Sangli

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Principal
Dr. K.M.Nalawade
M.Sc., Ph.D.

Ref. No.:

Date: - 28/3/2018

Certificate

This is to certify that following students from department of History, during the academic year 2017-18 have successfully completed STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Bhogale Komal Shidshwar
2	Chavan Kasturi Ramesh
3	Edake vishal Shashikant
4	Gavade Amrut Jaganath
5	Hirave Manoj Vasant
6	Howal Priyanka Bhaysgyawnat
7	Koli Archana Shrikant
8	Kumbhar Rupali Ganesh
9	Kumbhar Swapanli Shahaji
10	Mali Swapnali Subhash
11	Pawar Shital Shivaji

(Mr. V . R. Mane)

K.S.D.L. College Kundal Tal-Palus Dist.Sangli

Principal
Krantiagrani G. D. Bapu
Mahavidyalaya,Kund
Tal-Palus.Dist-Sangli

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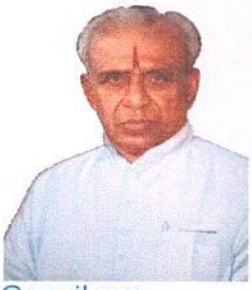

Principal
Dr. K. M. Nalawade
M Sc., M.Phil, Ph.D..

Ref. No.:

Date: - 28/3/2018

Certificate

This is to certify that following students from department of Marathi, during the academic year 2017-18 have successfully completedSTUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	Avate Pravin Rajendra
2	Dupate Amar Sunil
3	Jadhav AkshayNandkumar
4	Kambale Ajit Vishwas
5	MulaniSaddam Iqbal
6	Mulik Rahul Ganpati
7	Patil Dhanashri Vilas
8	Pawar Sonali Shubhas
9	Thombare Suraj Adhik
10	Ranpise Pallavi Babaso

(Dr. D.M. Honmane)
HoD

K.G.D.L. College, Kundal Tal.Palus,Dist.Sangli

Principal
Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya, Kunda
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Gandhi Education Society's
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Principal
DR. K. M Nalawade
M.Sc. Ph.D.

Ref. No.:

Date: - 28/3/2018

Certificate

This is to certify That flowing students from department of Economics, during the academic year2017- 18 have submitted students group projects as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name of students
1	Avate Mayur Namdev
2	Chavan Shrikant Mahantesh
3	Daunde Kajal Ajay
4	Dubal Tejashri Vilas
5	Edake Arun Kundalik
6	Gorad Prajkta Rajendra
7	Jadhav Avinash Prakash
8	Jadhav Kajal Tanaji
9	Jadhav Nilam Chandrakant
10	Jadhav Pooja Uttam
11	Jadhav Supriya Pravin
12	Jangam Omkar Dilip
13	Koli Akshay Mahadev
14	Lad Pratik Jaywant
15	Mohite Somnath Vittal
16	Pawar Pranjali Prakash
17	Shinde Ganesh Sanjay
18	Yadav Jaganath Chandrakant

Dr. M. G. sadamate
Head of Department

Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya,Kunda
Tal-Palus,Dist-Sangli

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Principal
Dr. K. M. Nalawade
M.Sc., M.Phil., D.C.S., Ph.D.

Ref. No.:

Date: - 28/3/2018

Certificate

This is to certify that following students from department of Computer Application, during the academic year 2017-18 have submitted STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Student List	Project Title	Guide Name
1	Jamdade Ankita Shantaram Jamadar Afsana Altaf Edake Shraddha Shrirang	Online Jewellary Shop	Mr. S. P. Nalawade
2	Mali Priyanka Uttam Varude Karuna Sanjay Lad Sneha Anil	Online Book Store	Miss. D. R .Mane
3	Shikalgar Pravej Ilai Pawar Sunil Sadashiv Sande Suddam Ibrahim Chawan Suraj Balaso	Kranti Blood Bank	Miss. D. R. Mane
4	Patil Shubham Dilip Pawar Rushikesh Dilip Patil Rohit Ramchandra Wagavkar Sujit Ashok	Hostel Management	Mr. S.P. Nalawade
5	Mali Kavita Mahadev Avate Pranav Prakash Lad Nilesh Bhimrao Mali Sanket Vitthal	Online FORTUN HOTEL Booking	Mr. A. A. Shinde
6	Chavan Sagar Vijay Patil Kunal Rajendra Salunkhe Aniket Suresh Salunkhe Suhas Suresh	Online Grampanchayt Management System	Mr. A. A. Shinde
7	Kudalkar Akash Popat Lad Suraj Satish Patil Raju Dinkar	E-Store Management System	Mr. A. A. Shinde
8	Sawat Sujata Rajendra Salavade Rohina Gulab Bansode Priyanka Sambhaji Jadhav Vaibhav Jagdish	Online Cars & Bikes Booking	Mr. A. A. Shinde

Principal

Gandhi Education Society Kundal's
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Principal
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Ref. No.:

Date: - 28/3/2018

Certificate

This is to certify that following student from B.A II Environmental Studies, during the academic year 2017-18 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Ashwini DamuGotpagar
2	Babar Shailendra Rajesh
3	Bhagat Rohini Suresh
4	Chavan Avinash Shankar
5	Chavan shitalShahaji
6	Devkate Vikas Datta
7	Dhas Vinayak Anil
8	Dubal Shweta Shashikant
9	EdakeNayan Nagesh
10	Gharge Shubham Ankush
11	Howal Anuradha Vikas
12	Jadhav Omkar Vijay
13	Jadhav Pradeep Pandurang
14	Jaunjal Chetan Sunil
15	Kharge Sourabh Vijay
16	Kolekar Swapnil Haridas
17	Kumbhar Vaibhav Uttam
18	Lad Akshay Sharad
19	Lad Pooja Jaywant
20	Lad Prakash Dilip
21	lad Sagar Sanjay
22	Lad SanirajManik
23	MadaneIndrajeetAtmaram
24	MahindPrathiraj Mohan
25	Mohite Seema Baban

Subject Teacher

Principal

Principal
Krantiagrani G. D. Bapu Lad

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Principal
Dr. K. M. Nalawade
M.Sc., M.Phil., Ph.D.

Ref. No.:

Date: - 28/3/2018

Sr.No.	Name
26	More Abhijeet Bajirao
27	Nalage Mayuri Bhgwan
28	Nalagevaishnavi Shivaji
29	Nanavare Pooja Khandu
30	Nikam Vidhya Sambhaji
31	Parale Amruta Jagdish
32	Patil BhagyashriSadik
33	patil Jaydeep Raghunath
34	Patil SanjeevniUdhav
35	Patil Vishal Vijay
36	Patole Kiran Sunil
37	pawarRuturajPopatrao
38	Phadtare Vipin Santosh
39	Rakshe Pramod Manik
40	Sakate Madhuri Navnath
41	SankpalShubhangi Dattatray
42	Sartape Ashwini Arun
43	Sawant Mahesh Hambirao
44	Sawat Seema Kisan
45	Shinde Suraj Hanmant
46	Suryawanshi Rohan Hanmant
47	Tambhewagh Umesh Ramesh
48	Thombare Mayur Subhash
49	ThorboleIndrajitJalindar
50	Thorbole Suraj Balaso
51	Edake Chetan Shankar
52	Koli Poonam Mohan
53	Yedage Rohit Krushnat

Subject Teacher

K.G.D.L. College, Kundal Tal Palus, Dist. Sangli

Principal

Principal
Krantiagrani G. D. Bapu Lao

Gandhi Education Society Kundal's
Krantiagrani G. D. Bapu Lad Mahavidyalaya, Kundal
Tal Palus, Dist. Sangli 416309 (Maharashtra)
Affiliated to Shivaji University, Kolhapur
Recognised under Section 2(f) & 12 (B) by University Grants Commission, New Delhi
NAAC REACCREDITED 'B' GRADE
Establishment: -1998
President
Hon. Arun Ganpati Lad
Ph. No (02346) 271720
Website – www.kgdbapuladcollege.in
Email:- kgdblm@gmail.com

Principal
Dr. K.M. Nalawade
M.Sc., Mphil, Ph.D.

Ref. No.:

Date: - 28/3/2018

Certificate

This is to certify that following student from B.Com. II Environmental, during the academic year 2017-18 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Koli Kajal Kajal
2	AlatekarAnuja Pavan
3	Bhagwat Ganesh Manik
4	Chavan Umesh Hanmant
5	Chavan Satyam Bhagwat
6	Dupate Jyoti Ashok
7	Jadhav Pooja Ashok
8	Kadam Vijay Mohan
9	KavadeSmita Gajanan
10	Kavare Vidhya Sanjay
11	Kharge Sanjay Hanmant
12	Lad Aarti Bhauso
13	Lad Komal Sunil
14	Lad Pranav Shrikant
15	Lad Mohan Jagannath
16	Lad Sanket Chandrakant
17	Lad Priyanka Vishwas
18	Madane Prajakta Rajendra
19	Madane Vaibhav Dilip
20	Kharge Tanuja Santosh
21	MasalTejasSukhadev
22	MolanePratiksha Somnath
23	Parale Aishwarya Kumar
24	Patil Nisha Nivas
25	Patil Pooja Sanjay

Teacher Incharge

K.S.D.L. College, Kundal * Tal Palus, Dist. Sangli *

Principal

Principal
Krantiagrani G. D. Bapu Lad

Gandhi Education Society Kundal's
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M.Sc., Mphil, Ph.D.

Ref. No.:

Date: - 28/3/2018

Sr.No.	Name
26	Patil Sarika Hanmant
27	Pawar Vikram Vilas
28	Pawar Shubham Dhanaji
29	Salave Pooja Vijay
30	Sawant Priyanka Prakash
31	TakaleAkshay Ramchandra
32	Take Karuna Nilkandh
33	Thorbole Shubham Bhanudas

Teacher Incharge

K.G.D.B.L. College, Kundal ★ Tal-Palus, Dist-Sangli

Principal

Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya, Kunda
Tal-Palus, Dist-Sangli

Gandhi Education Society Kundal's
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Hon. Arun Ganpati Lad Website – www.kgdbapuladcollege.in Email:- kgdblm@gmail.com

Incharge Principal
Dr. K. M. Nalawade
M.Sc, M.Phil., Ph.D.

Ref. No.:

Date: - 28/3/2018

Certificate

This is to certify that following student from B.Com. II Environmental Studies, during the academic year 2017-18 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Koli Kajal Kajal
2	AlatekarAnuja Pavan
3	Bhagwat Ganesh Manik
4	Chavan Umesh Hanmant
5	Chavan Satyam Bhagwat
6	Dupate Jyoti Ashok
7	Jadhav Pooja Ashok
8	Kadam Vijay Mohan
9	KavadeSmita Gajanan
10	Kavare Vidhya Sanjay
11	Kharge Sanjay Hanmant
12	Lad Aarti Bhauso
13	Lad Komal Sunil
14	Lad Pranav Shrikant
15	Lad Mohan Jagannath
16	Lad Sanket Chandrakant
17	Lad Priyanka Vishwas
18	Madane Prajakta Rajendra
19	Madane Vaibhav Dilip
20	Kharge Tanuja Santosh
21	MasalTejasSukhadev
22	MolanePratiksha Somnath
23	Parale Aishwarya Kumar
24	Patil Nisha Nivas
25	Patil Pooja Sanjay

Teacher Incharge

Principal

Principal
Krantiagrani G. D. Bapu Lad

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Incharge Principal
Dr. K. M. Nalawade
M.Sc, M.Phil., Ph.D.

Ref. No.:

Date: - 28/3/2018

Sr.No.	Name
26	Patil Sarika Hanmant
27	Pawar Vikram Vilas
28	Pawar Shubham Dhanaji
29	Salave Pooja Vijay
30	Sawant Priyanka Prakash
31	TakaleAkshay Ramchandra
32	Take Karuna Nilkandh
33	Thorbole Shubham Bhanudas

Teacher Incharge

K. G. D. B. College, Kundal ★ Tal.Palus,Dist.Sangli ★

Principal

Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya,Kunda
Tal-Palus,Dist-Sangli

Gandhi Education Society Kundal's
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Incharge Principal
Dr. K. M. Nalawade
M.Sc, M.Phil., Ph.D.

Ref. No.:

Date: - 21/3/2018

Certificate

This is to certify that following student from BCA II Environmental Studies, during the academic year 2017-18 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	AVATE VIRSHRI BABASAHEB
2	GADACHE PRATIKSHA SANJAY
3	JANGAM AISHWARYA PRAKASH
4	KAMBLE DIKSHA GULAB
5	KHADE DHANANJAY DATTATRAY
6	KSHIRSAGAR PRANALI PRADIP
7	LAD DIPALI SANJAY
8	LAD DIPALI BHASKAR
9	LAD SURAJ SATISH
10	MALI ONKAR AVINASH
11	MALI SURAJ VITTHAL
12	MANE ANIKET SHIVAJI
13	PATIL RUTUJA RAMCHANDRA
14	PAWAR SHUBHAM HANMANT
15	PAWAR MONIKA MOHAN
16	PAWAR RUTUJA KIRAN
17	PAWAR SWAPNALI ARUNA
18	RADARATTI ASWINI ARJUN
19	SALAGAR PRAJAKTA SHIVAJI
20	SAWANT SUSHANT SAMPAT
21	SHIVPUJE ANJALI BALASAHEB

Teacher Incharge

K.G.D. College, Kundal Tal Palus, Dist. Sangli

Principal

Principal
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Mahavidyalaya, Kundal

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Ph. No (02346) 271720
Website – www.kgdbapuladcollege.in
Email:- kgdblm@gmail.com

Establishment: -1998
President
Hon. Arun Ganpati Lad

Principal
Dr. K.M.Nalawade
M.Sc., Ph.D.

Ref. No.:

Date: - 27/3/2017

Certificate

This is to certify that following students from department of English, during the academic year 2016-17 have submitted STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Chaugoule Santosh Maruti
2	Darade Sonia Ankush
3	KhetmalGouriDipak
4	Kumbhar Swarngli Ankush
5	Mane Swapnil Bapurao
6	Nadaf Karishma Jahangir
7	Naik Kiran Kumar
8	Pakale shreyesh dhondiram
9	Patil Rajani Raghunath
10	Pawar Dattatrya Jangam
11	Sawant Nilima Pradip
12	Sawant Yogita Ashok
13	Shinde Ganesh Sambhaji
14	VarudePoonamShashikant

(Dr. B. D. Waghmare)
HoD

K.G.D.B.L. College Kundal Tal.Palus Dist.Sangli

Principal
Krantiagrani G. D. Bapu L
Mahavidyalaya,Kunda
Tal-Palus.Dist-Sangli

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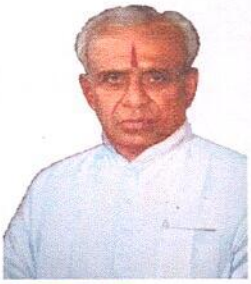
Email:- kgdblm@gmail.com



Principal
Dr. K.M.Nalawade
M.Sc., Ph.D.

Ref. No.:

Date: - 27/3/2017

Certificate

This is to certify that following students from department of History, during the academic year 2016-17 have successfully completed STUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	BHISE AMURTA DILIP
2	GAIKWAD ROHIT VISHVAS
3	GAVALE NARAYAN BHAGAVAN
4	GAVALE VARSHARANI HARSHAVARDHAN
5	GHORPADE PRASAD PANDURANG
6	HIRAVE MANOJ VASANT
7	LAD SHRITEN SURESH
8	MANE RUPALI SHAMARO
9	NIVALE NAMRATA MOHAN
10	PAWAR PRAVIN RAMCHANDRA
11	SOLVANDE ASHWINI DILIP
12	SOLWANDE RUPALI HINDURAO
13	SUHEL ANSAR MULLA
14	WARE ANITA ANIL
15	BARGE ROHIT PRALHAD

(V . R. Mane)

K.G.D.B.L. College ★ Tal.Palus,Dist.Sangli ★ (Regd.)

Principal
Krantiagrani G. D. Bapu
Mahavidyalaya,Kund
Tal-Palus,Dist-Sangl

Gandhi Education Society Kundal's
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Hon. Arun Ganpati Lad Website – www.kgdbapuladcollege.in Email:-kgdblm@gmail.com

Principal
Dr. K. M. Nalawade
M Sc., M.Phil, Ph.D..

Ref. No.:

Date: - 27/3/2017

Certificate

This is to certify that following students from department of Marathi, during the academic year 2016-17 have successfully completedSTUDENTS' GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr.No.	Name
1	Chanvan Ashwini Namadev
2	Chanvan Sarita Amrut
3	Ghadage Vijay Santosh
4	KhargePriti Bharat
5	Mandale Surekha Ramchandra
6	Shingare Atish Shankar
7	Todakar Neha Dipak
8	Waghmare Pravin Vilas
9	TakalevivekNaryan
10	YeadkShalajaKundlik
11	Patil Dhanshri Vilas

(Dr. D.M. Honmane)Principal
HoD

K.G.D.L. College, Kundal, Tal-Palus, Dist.Sangli

Principal
Krantiagrani G. D. Bapu La
Mahavidyalaya,Kunda
Tal-Palus.Dist-Sangli

Gandhi Education Society's
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President Ph. No (02346) 271720
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Principal
DR. K. M Nalawade
M.Sc. Ph.D.

Ref. No.:

Date: - 27/3/2017

Certificate

This is to certify that flowing students from department of Economics, during the academic year 2016-17 have submitted students group projects as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name of students
1	Chavan Kumar Bhagwan
2	Chavan Pranit Atul
3	Devkate Pramod Ashok
4	Gavade Dipak Popat
5	Gavade Priyanka Bhanudas
6	Gorad Omkar Mayappa
7	Gorad Tannaji Dinakar
8	Jadhav Vishal Shashikant
9	Kolekar Rohit Laxman
10	Lad Vishal Maruti
11	Madane Komal Tanaji
12	Mahind Pranali Dhanaji
13	Mali Snehal Shahaji
14	Mokashi Pallavi Subhash
15	Mulik Sandip Ashok
16	Patil shivali prakash
17	Pawar Samrudhi Sanjay
18	Pawar Shivanjali Subhash
19	Pawar Sujit Shamaro
20	Pawar Vinita Vilas
21	Shinde Suhas Krishnath
22	Shinde Suryakant Bandkar
23	Swami Mina Chandrakant
24	Thorbole Kajal Prakash

Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya, Kundal

K.G.D.L. College, Kundal ★ Tal.Palus, Dist.Sangli ★

Dr. M. G. Sadamate
Head of Department

Gandhi Education Society's
Krantiagrani G. D. Bapu Lad Mahavidyalaya, Kundal
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Establishment: -1998
President
Hon. Arun Ganpati Lad

Principal
Dr. K. M. Nalawade
M.Sc., M.Phil., D.C.S., Ph.D.

Ref. No.:

Date: - 27/3/2017

Certificate

This is to certify that following students from department of Computer Application, during the academic year 2016-17 have submitted STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Student List	Project Title	Guide Name
1	Choughule Priyanka Ananda Mali Sneha Anil Lad Amol Dilip Suryavanshi Pranav Vasanat	SQL Tutorials Website	Mr. A. A. Shinde
2	Parale Pooja Sanjay More Pooja Datattaray Chavan Komal Shivaji	KP Gift Gallery	Mr. A. A. Shinde
3	Devekar Shweta Prakash Madane Pooja Bapuso	Online Bus Reservation	Mr. A. A. Shinde
5	Patil Mayur Houserao Pujari Ajay Tukaram Koli Nitin Namdev Joshi Akhilesh Shridhar	Online Gas Booking System.com	Mr. A. A. Shinde
6	Mulla Salman Ansar Harale Dadaso Uttam	Hospital Management System	Mr. S. P. Nalawade
7	Gaikwad Komal Sanjay Thorbole Amruta Satish	Online Shoping Management	Mr. S. P. Nalawade
8	Pawar Pratik Hanmant Edke Kanvhan Dilip Mali Suraj Dhondiram Mulani Nadim Salim	Online Bookshop Management System	Mr. A. A. Shinde

(Mr.S.P.Nalawade)
H.O.D.
Computer Department,
Krantiagrani G.D.Bapu Lad College
Kundal.Tal:Palus.Dist:Sangli

HOD

Principal
Krantiagrani G.D.Bapu Lad
Mahavidyalaya,Kundal.

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Principal
Dr. K. M. Nalawade
M.Sc., M.Phil., Ph.D.

Ref. No.:

Date: - 27/3/2017

Certificate

This is to certify that following student from B.A II Environmental Studies, during the academic year 2016-17 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	AakleAkshay Satish
2	Aiwale Nikhil Mayappa
3	Ambawade Kishor Goutham
4	Aute Pranav Rajendra
5	Avate MayurNamdev
6	Chavan Shrikant Mahantsh
7	DaundeKajal Ajay
8	DevkuleManali Sambhaji
9	DubalTejashri Vilas
10	Dupate Amar Sunil
11	GavaleViraji Vijay
12	Gavle Nisha Raghu
13	Gavle Priyanka Bhagyavant
14	Gorad Prajakta Ravindra
15	Hingmire Nitin Deepak
16	Jadhav Rahul Samparao
17	Jadhav Avinash Prakash
18	Jadhav NilamChandracant
19	Jadhav AkshayNandkumar
20	Jadhav Amruta Dadaso
21	Jadhav Kajal Tanaji
22	Jadhav Pooja Uttam
23	Jadhav Sagar Dilip
24	Jadhav Supriya Pravin
25	Jangam Onkar Dilip

(Subject Teacher)

K. G. D. College, Kundal Tal. Palus, Dist. Sangli

Principal

Principal
Krantiagrani G. D. Bapu Lad Mahavidyalaya, Kundal

Gandhi Education Society Kundal's
Krantiagrani G. D. Bapu Lad Mahavidyalaya, Kundal
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Principal
Dr. K. M. Nalawade
M.Sc., M.Phil., Ph.D.

Ref. No.:

Date: - 27/3/2017

Sr.No.	Name
26	KoliAkshay Mahadev
27	KoliArchna Shrikant
28	Kumbhar Rupali Ganesh
29	Kumbhar Swapnil Shivaji
30	MadanePriyanka Satish
31	MadaneGorakhBalu
32	Madane Kajal Pandurang
33	Mali AkshyakumarShrikrushan
34	Mali Swapnil Subhash
35	Mohite Somnath Vitthal
36	Mulani SaddamIkbal
37	Nalyani Dipak Nivas
38	Patil PrabhakarNavnath
39	Patil Ashish Baban
40	Patil Nilesh Babaso
41	Pawar AkshayVittal
42	Pawar Dipali Balkrishna
43	Pawar Pragati Prakash
44	Pawar Shital Shivaji
45	Pawar Sonali Subhash
46	Pawar Varshali Vikas
47	Ranpise Pallavi Balasaheb
48	Salunkhe Pooja Ramchandra
49	Shinde Ganesh Sanjay
50	SolvandeJoshanaBalu
51	Thombre Suraj Aadhik
52	Yadav Jagannath Chandrakant
53	Chavan EkataAdhik

Subject Teacher

Principal

Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya, Kundal

Gandhi Education Society Kundal's
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Principal
Dr. K. M. Nalawade
M.Sc., M.Phil., Ph.D.

Ref. No.:

Date: - 27/3/2017

Sr.No.	Name
54	Yadhv Amruta Dadaso
55	Yadav Suraj Malhari
56	Shaik Hanif Balu
57	Chavan Kasturi Remesh

Subject Teacher

Principal

Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya,Kunda
Tal-Palus,Dist-Sangli

Gandhi Education Society Kundal's
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Principal
Dr. K.M. Nalawade
M.Sc., Mphil, Ph.D.

Ref. No.:

Date: - 25/3/2017

Certificate

This is to certify that following student from B.Com. II Environmental, during the academic year 2016-17 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Sawant Prajakta Adhik
2	Mujawar Ansari Kajal
3	Sawant Priyanka Mahadev
4	Kadam Supriya Sujit
5	Bhosale Prajakta Dashrath
6	SuryawanshiSujalTanaji
7	Pawar Dhanshri Raghunath
8	Salunkhe Priyanka Subhash
9	Sawant Pallavi Narayan
10	Dupate Varsha Babaso
11	Karande Priyanka Madhukar
12	Nivale Prajakta Mohan
13	Patil Ranjit Netaji
14	ParaleDipati Satish
15	MadaneAsmita Himmat
16	Jadhav SnehalSampatrao
17	Thorbole Shweta Suresh
18	Shinde Sonali Shamrao
19	Harale Manjusha Uttam
20	Pawar RahulNamdev
21	Sutar Vipul Damodar
22	Sudhal Mahesh Pandurang
23	Kadam SandipSambhaji
24	Chavan Ramesh Hanmant
25	Thorbole Vishal Baburao

Teacher Incharge

K.G.D. College, Kundal * Tal Palus, Dist. Sangli *

Principal

Principal
Krantiagrani G. D. Bapu Lad

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Recognised under Section 2(f) & 12 (B) by University Grants Commission, New Delhi
NAAC REACCREDITED 'B' GRADE
Ph. No (02346) 271720
Website – www.kgdbapuladcollege.in
Email:- kgdblm@gmail.com
Establishment: -1998
President
Hon. Arun Ganpati Lad
Principal
Dr. K.M. Nalawade
M.Sc., Mphil, Ph.D.

Ref. No.:

Date: - 25/3/2017

Sr.No.	Name
26	Pawar Shubham Anil
27	Dinde Manisha Vishnu
28	Shinde AkshayJalindar
29	Pawar Gauri Anil
30	Kale KedarSahebrao
31	Edake Rakesh Ganpati
32	Kumbhar Amar Dattatraya
33	Chavan Anil Mahantesh
34	Chavan Manohar Aanda
35	Edake Omkar Dhanjay
36	Pawar Aakash Vishwas
37	Edake Sushant Shivaji
38	KauleAvinash Vasant
39	Lad Nikhil Dilip

Teacher Incharge

K.G.D. College, Kundal * Tal Palus, Dist. Sangli *

Principal

Principal
Krantiagrani G. D. Bapu Lad
Mahavidyalaya, Kundal
Tal-Palus, Dist-Sangli

Gandhi Education Society Kundal's
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Incharge Principal
Dr. K. M. Nalawade
M.Sc, M.Phil., Ph.D.

Ref. No.:

Date: - 27/3/2017

Certificate

This is to certify that following student from B.Com. II Environmental Studies, during the academic year 2016-17 have successfully completed STUDENTS GROUP PROJECT as per guidelines of Shivaji University Kolhapur for internal evaluation:

Sr. No.	Name
1	Sawant Prajakta Adhik
2	Mujawar Ansari Kajal
3	Sawant Priyanka Mahadev
4	Kadam Supriya Sujit
5	Bhosale Prajakta Dashrath
6	SuryawanshiSujalTanaji
7	Pawar Dhanshri Raghunath
8	Salunkhe Priyanka Subhash
9	Sawant Pallavi Narayan
10	Dupate Varsha Babaso
11	Karande Priyanka Madhukar
12	Nivale Prajakta Mohan
13	Patil Ranjit Netaji
14	ParaleDipati Satish
15	MadaneAsmita Himmat
16	Jadhav SnehalSampatrao
17	Thorbole Shweta Suresh
18	Shinde Sonali Shamrao
19	Harale Manjusha Uttam
20	Pawar RahulNamdev
21	Sutar Vipul Damodar
22	Sudhal Mahesh Pandurang
23	Kadam SandipSambhaji
24	Chavan Ramesh Hanmant
25	Thorbole Vishal Baburao

Teacher Incharge

K. G. D. L. College, Kundal Tal Palus, Dist. Sangli

Principal

Principal

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Teacher Incharge

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Principal

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Sr. No.	Name
1	AVATE PRANAV PRAKASH
2	BOLEL PATIL ROHIT RAMCHANDRA
3	CHAVAN SAGAR VIJAY
4	CHAVAN SURAJ BALASO
5	EDAKE SHRADDHA SHRIRANG
6	JADHAV VAIBHAV JAGDISH
7	JAMADAR AFSANA ALTAF
8	KADAM AKSHAY BALASO
9	KUDALKAR AKASH POPAT
10	LAD NILESH BHIMRAO
11	LAD SNEHA ANIL
12	MALI KAVITA MAHADEV
13	MALI PRIYANKA UTTAM
14	MALI SANKET VITTHAL
15	MULANI AMIR ZAKIR
16	PATIL KUNAL RAJENDRA
17	PATIL SHUBHAM DILIP
18	PAWAR RUSHIKESH DILIP
19	PAWAR SUNIL SADASHIV
20	SALUNKHE ANIKET SURESH
21	SALUNKHE SUHAS SURESH
22	SANDE SADDAM IBRAHIM
23	SAWAT SUJATA RAJENDRA
24	SHIKALGAR PARVEJ ILAI
25	SOLAWANDE ARATI SANJAY

Teacher Incharge

K.G.D.L. College, Kundal Tal.Palus, Dist.Sangli

Principal

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Date: - 27/3/2017

Sr.No.	Name
26	VARUDE KARUNA SANJAY
27	WAGAVKAR SUJIT ASHOK

Teacher Incharge

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Principal

Principal
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