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SHIVAJI MAHAVIDYALAYA,UDGIR
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PRINCIPAL

COURSE OUTCOMES FOR ALL UG PROGRAMMES

Course English

CO-BA FY-1: Understanding Prose Fiction

a. Learners can appreciate the texts in the English Prose Fiction genre.

b. Through responding to different texts of Prose Fiction, the learners acquainted themselves with the wide range of expressions in the English language.

c. Learners carried out the tasks of interpretation of novels and short stories by studying the critical analyses of the prescribed texts.

CO-BAFY-2: Understanding Poetry in English

a. Learners are able to appreciate English Poetry with an understanding of diverse poetic forms and themes.

b. Through responding to different Poetic texts the learners got acquainted with the various nuances of poetic expressions in the English language.

c. Learners carried out the tasks of interpretation of poems by studying the critical analyses of the prescribed texts.

CO-BAFY-3: Understanding Non-Fictional Prose in English

a. Learners are able to appreciate English Non-fictional prose with an understanding of various prose writings as developed through ages.

b. Through responding to different Prose writings learners enriched themselves in the use of prose for diverse thematic expressions.

c. Learners attained certain degree of proficiency in the interpretation of English prose.

CO-BAFY-4: Understanding Drama in English

a. Learners are able to appreciate English Drama with an understanding of various dramatic texts.

b. Through responding to different plays learners got introduced to various types of dramatic experiences.

c. Learners are able to critically analyse texts from different dramatic genres.

CO-BASY- 5: Indian Writing in English

a. Learners will be able to appreciate the texts in Indian Writing in English

b. Through responding to different texts of Indian Writing in English the learners will acquaint themselves with the wide range of expressions in the Indian English language.

c. Learners will carry out the tasks of literary interpretation by studying the critical analyses of the prescribed texts.

CO-BASY- 6: American Literature

a. The learners will gain an overall insight of the American literature, and understand the background, historical context, the importance of American literature and its role in the society.

b. The learners will identify, explicate, and respond to key themes and elements in American literature in various literary genres.

c. Students will be enabled to review and recognize the body of literary works from America and will be able to understand the American spirit as well as to analyze various literary innovations and their culture.

CO-BASY- 7: Indian Literature in English Translation

a. The students will acquire an introductory knowledge of Indian literary heritage.

b. The students will be familiarized with the significant socio-cultural issues in India through close reading of literary texts from diverse regions.

c. The students will realize the intellectual potential available from the Indian literary texts from various Indian languages.

CO-BASY- 8: Women's Literature

a. Students will be able to critically analyze the structure and meaning of various literary works written by women authors.

b. Students will acquire knowledge of the major concerns of the women through a reading of the representative works from different nations.

c. Students will be acquainted with the richness and depth of the female experience as depicted

through their literary representations.

CO-BATY-9: Literary Criticism -I (DSE-ENG-I)

a. Learners will be able to understand the historical background of the canon of Western Literary Criticism

b. Learners will appreciate the various theories developed during the Classical times and European Renaissance

c. Learners will be sensitized to the foundations of different critical traditions

CO-BATY-10: Modern English Structure: Understanding English Phonology Course (GE-ENG-I)

a. The learners will be able to perceive, and transcribe the sounds of the English language, while learning the acoustic and articulatory properties.

b. The learners will gain practical skills of transcribing data in the International Phonetic Alphabet (IPA).

c. The ability of synthesizing speech will be acquired.

CO-BATY-11: Literary Criticism - II (DSE-ENG- II)

a. Learners will understand the basic principles of Literary Criticism as revealed from the study of the individual critics.

b. Learners will perceive the development of English Literary Criticism through the ages.

c. An ability to appreciate literary text through the practice of actual critical analysis will be gained.

CO-BATY-12: Modern English Structure: Understanding English Grammar Course (GE-ENG- II)

a. The learners will be able to have an appreciable understanding of English grammar.

b. The learners will gain capability of producing grammatically and idiomatically correct spoken and written discourse.

c. The learners will acquire the skill of locating language errors and ambiguities.

CO-Skill Enhancement Course (SEC) – UG Second Year: Employability Skills

a. Learners build Vocabulary comprising Spelling and Pronunciation in English.

b. They developed Conversation Skills-oral and written communication.

c. They developed professional skills and Soft Skills, to entre in the work places.

CO-Skill Enhancement Course (SEC) – UG Third Year: Life Skills

a. Learners developed personal and social skills within themselves.

b. Gender awareness got created within them for the smooth functioning at workplace and in the society.

c. They developed skills for individual and group activities.

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Course Hindi

CO Paper- I & III: कथा साहित्य:

i) हिंदी साहित्य की कहानी और उपन्यास विधा से छात्रों का परिचय होगा।
ii) कथा साहित्य की लेखन शैली से परिचय होगा।
iii) छात्रों में चिंतन एवं लेखन शैली का विकास होगा।
iv) विभिन्न पात्रों की मानसिकता तथा लेखन क्रिया कलापों से छात्रों में सही और गलत को परखने की क्षमता विकसित होगी।
v) साहित्य के माध्यम से विविध समस्याओं से अवगत होकर उन समस्याओं के समाधान के लिए छात्रों को प्रेरणा मिलेगी।

CO paper II & IV: नाटक तथा एकांकी

i) हिंदी नाटक और एकांकी विधा का परिचय होगा।
ii) नाटक के प्रति छात्रों में रूचि उत्पन्न होगी।
iii) संवाद लेखन तथा वाचन कौशल का विकास होगा।
iv) छात्रों को रंगमंच से संबधित जानकारी प्राप्त होगी।
v) अभिनय के प्रति रूचि निर्माण होगी साथ ही अभिनय के क्षेत्र में करियर बनाने का अवसर प्राप्त होगा।

CO Paper- I & II : साहित्य भारती (SL)

I) अहिंदी क्षेत्र के छात्रों को हिंदी भाषा का व्यावहारिक ज्ञान प्राप्त होगा।
II) द्वितीय भाषा के रूप में छात्रों को हिंदी और साहित्य का सामान्य परिचय होगा।
III) अहिंदी क्षेत्र के छात्रों में हिंदी के प्रति रूचि उत्पन्न होगी।
IV) विविध साहित्यिक रचनाओं के माध्यम से छात्रों में नैतिक मूल्यों का विकास होगा।

CO Paper V मध्ययुगीन कविता

I) भारतीय भक्ति साधना का परिचय होगा।

II) भक्ति साहित्य के अध्ययन के माध्यम से छात्रों में मानवता का भाव विकसित होगा।

III) समाजिक सहिष्णुता की वृत्ति का विकास होगा।

IV) भक्ति तथा नीति की शिक्षा से छात्रों का आत्मिक तथा अध्यात्मिक विकास होगा।

V) जीवन दर्शन तथा जीवन मूल्यों का विकास होगा।

CO Paper VI & VIII निबंद तथा तथा कथेत्तरगद्य

i) निबंध विधा का परिचय होगा।

ii) छात्रों में वैचारिक प्रगल्भता तथा बौध्दिक प्रौढता का विकास होगा।

iii) कथेत्तर गद्य की रचनाओं के अध्ययन से चिंतनशीलता की वृध्दि होगी।

iv) विविध कथेत्तर गद्य की विधाओं का परिचय होगा।

CO Paper- III: कथेत्तरगद्य (SL)

i) अहिंदी क्षेत्र के छात्रों को द्वितीय भाषा के रूप में हिंदी भाषा तथा हिंदी साहित्य का ज्ञान होगा।

ii) कथेत्तर गद्य के अध्ययन से छात्रों में चिंतनशीलता, वैचारिकता का विकास होगा।

iii) अहिंदी क्षेत्र के छात्र हिंदी की कथेत्तर गद्य की विधाओं तथा रचनाओं से परिचित होंगे।

iv) कथेत्तर गद्य की विविध रचनाओं के द्वारा छात्रों में देशभक्ति, सामाजिक दायित्व, कर्तव्यपरायनता, नैतिकता आदि मूल्यों का विकास होगा।

CO Paper- IV: नाटक तथा प्रयोजन मूलक हिंदी (SL)

i) हिंदी साहित्य के बृहत इतिहास का परिचय होगा।

ii) हिंदी साहित्य के सृजन की पृष्ठभूमि का बोध होगा।

iii) साहित्यिक प्रवृत्तियों का ज्ञान होगा।

iv) छात्रों को जीवन दर्शन तथा जीवन मूल्यों की शिक्षा प्राप्त होगी।

v) साहित्य के इतिहास का अध्ययन भविष्यकालीन निर्माण में महत्वपूर्ण साबित होगा।

CO Paper I & II : हिंदी भाषा कौशल)SEC)

i) छात्र साहित्य के साथ-साथ भाषा जैसे विषय में प्रात्यक्षिक की शिक्षा को ग्रहण करते हैं।
ii) पत्र लेखन के भेदों का परिचय पाकर विविध प्रकार के पत्र लेखन की शैली पर अमल करते हैं।
iii) ई-मेल आय.डी. पंजीकरण, मेल भेजने की विधी, वेब संर्चिंग आदि कार्य विधी में कौशल हाशिल किए।
iv) अच्छे वक्ता के गुणों को आत्मसात करते हुए संभाषण कौशल में उन्नत्ति की प्रेरणा मिली।
v) पटकथा की संकल्पना और स्वरूप को जानते हुए संवाद किस ढंग के होते है और कैसे लिखे जाते है इस बात का कौशल आत्मसात किया हैं।

CO Paper IX हिंदी साहित्य का इतिहास

i) हिंदी साहित्य के बृहत इतिहास का परिचय होगा।
ii) हिंदी साहित्य के सृजन की पृष्ठभूमि का बोध होगा।
iii) साहित्यिक प्रवृत्तियों का ज्ञान होगा।
iv) छात्रों को जीवन दर्शन तथा जीवन मूल्यों की शिक्षा प्राप्त होगी।
v) साहित्य के इतिहास का अध्ययन भविष्यकालीन निर्माण में महत्वपूर्ण साबित होगा।

CO Paper X: हिंदी भाषा

i) हिंदी भाषा के प्रति छात्रों में रूचि उत्पन्न होगी।
ii) हिंदी भाषा के प्रयुक्ति क्षेत्रों से परिचय होगा।
iii) प्राद्योगिकी के युग में हिंदी भाषा की उपयोगिता से छात्र परिचित होंगे।
iv) बहुभाषिक विशाल भारत की संपर्क भाषा के रूप में हिंदी भाषा उपयोगीता सिध्द होगी।
v) हिंदी भाषा अध्ययन के द्वारा नये नये रोजगार के अवसर प्राप्त होंगे।

CO Paper XI: साहित्य शास्त्र

i) छात्रों में साहित्य का शास्त्रीय पद्धति से अध्ययन करने की दृष्टि विकसित होगी।

ii) छात्र साहित्यशास्त्र के महत्व को आत्मसात करेंगे।
iii) शब्द और अर्थ के संबधों का बोध होगा।
iv) भाषाई शिल्प के परिवर्तनों का बोध होगा।

CO Paper XII: भाषा शिक्षण

i) भाषा शिक्षण के महत्व से परिचय होगा।
ii) हिंदी भाषा की व्याकरणिक कोटियों से परिचय होगा।
iii) भाषाई शुध्दता एवं कुशलता के द्वारा रोजगार के अवसर प्राप्त होंगे।
iv) हिंदी भाषा के साथ साथ विज्ञान तथा व्यापार की अद्यतन जानकारियाँ प्राप्त होंगी।
v) छात्रों में लेखन कौशल विकसित होगा।

Paper III & IV: हिंदी भाषा कौशल)SEC)

i) छात्रों में व्यवसायाभिमुख कौशल विकसित करना।

ii) कौशल के अनेक क्षेत्रों से हिंदी को जोड़ना।

iii) छात्रों में लेखन कौशल विकसित करना।

iv) छात्रों को रोजगार के अवसरों से परिचित एवं प्रेरित करना।

v) छात्रों को कौशल के माध्यम से सम्पूर्ण व्यक्तित्व को विकसित करना।

vi) कौशल विकास के माध्यम से राष्ट्र निर्माण में योगदान देना।

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Course Marathi BA/B.Com./B.Sc. FY

CO Paper- I: आधनिुनिक मराठी कथा वाङ्मय.

CO Paper- I: आधुनिक मराठी कथा वाङ्मय.

१) विद्यार्थ्यांनी कथा वाङ्मय हा प्रकार व्यवस्थितपणे समजून घेतले आहेत.

२) विद्यार्थ्यांना मराठी कथा साहित्य प्रकाराचे कालानुक्रमे स्वरूप लक्षात आले.

३) हा पेपर अभ्यासल्या नंतर विद्यार्थ्यांना साहित्याच्या विविध प्रकाराची ओळख झाली.

४) कथा साहित्यप्रकाराची अभिरुची निर्माण झाल्याने यासारखी अनेक कथा त्यांनी मिळून वाचलेल्या आहेत.

५) या अभ्यासाच्या माध्यमातून विद्यार्थ्यांना विविध बोलीभाषेचा परिचय झाला.

६) भाषिक कौशल्यांचा या पेपरच्या अनुषंगाने विद्यार्थ्यांमध्येही कला काहीप्रमाणात अवगत झाली

CO Paper-II मध्ययुगीन आणि आधुनिक मराठी पद्यवाङ्मय

CO paper II मध्ययुगीन आणि आधुनिक मराठी पद्य वाङ्मय

१)मध्ययुगीन व आधुनिक काव्यप्रकाराची ओळख झाली

२)कवितेच्या परंपरेचा अभ्यास करता आला.

३) कवितेचे विविध प्रकार, प्रवाह, प्रकृती व परंपरा यांचे आकलन झाले.

४) कवितेचे रचना बंदाची ओळख झाली.

Paper III मराठी कथात्म साहि त्य

१) चरित्र आत्मकथन कथा प्रवास वर्णन ललित गद्य या वांग्मय प्रकारातून विद्यार्थ्यांना साहित्य आणि संस्कृतीची ओळख झाली.

२) अभ्यासक्रमातील घटकांच्या माध्यमातून महान व्यक्तिमत्वाचा परिचय झाला.

३) चरित्र, आत्मकथनातून महान व्यक्तिमत्वाचा, अनुभूतीचा उपयोग त्यांच्या जीवनात होत असल्याचे त्यांच्या लक्षात आले.

४) कथात्म साहित्यातील विविध लेखन प्रकारांची यानिमित्ताने विद्यार्थ्यांना माहिती झाली.

५) मराठी कथात्म साहित्य अभ्यासताना विद्यार्थ्यांची वाचन आणि लेखन अभिरुची वृद्धिंगत झाली.

६) साहित्याचा मानवी जीवनावर होणारा परिणाम या घटकाच्या अभ्यासातून विद्यार्थ्यांच्या लक्षात आला.

CO Paper IV. मध्ययुगीन आणि आधनिुनिक मराठी पद्य वाङ्मय.

१)विद्यार्थ्यांच्या भाषिक आकलनाची पूर्तता झाली.

२) ओवी ते लावणी असा काव्याचा प्रवास समजला.

३) मराठी कवितेच्या वैभवशाली परंपरा ची ओळख झाली.

४) अलंकार, ओवी, मुक्तछंद ,उपदेशपर कवितेची ओळख झाली

MARATHI **BA/B.Com./B.Sc. SY**

CO Paper V निवडक मराठी गद्य

१) मराठी गद्य साहित्याची ओळख झाली.

२) ऐतिहासिक टप्यावरील बदलते गद्य अभ्यासले.

३) मध्ययुगीन आधुनिक काळातील गद्य लेखनाचे बारकावे तपासता आले.

४) गद्य साहित्यातील विविध लेखनप्रकार माहिती झाली.

५)अभ्यास घटका आधारे तत्कालीन परीस्थितीवर प्रकाश टाकता आला. .

CO Paper VI- मराठी नाट्यम साहित्य.

१]आधनिक मराठी नाटकाच्या प्रेरणा समजून घेतल्या.
२] साठोत्तरी मराठी नाटकांचा नाटकाच्या जाणिवांचा अभ्यास केला.
३]नाट्य प्रकारांचा जवळून अभ्यास केला.

४]जागतिकीकरणाच्या परिप्रेक्ष्यातून मराठी नाटकांची मीमांसा केली.
५]आधनिक नाटकाच्या प्रवाहातील वांग्मयीन आणि रंगमंचाची मल्यांची मीमांसा केली.

Co Paper VII निवडक कादंबरी वाङ्मय .

१]कादंबरी वाङ्मम प्रकार समजून घेतला.

२]मराठी कादंबरी वाङ्मम कालानुक्रमे स्वरूप समजून घेतले.

३]कादंबरी वाङ्मम लेखना नुसार विविध प्रकाराची ओळख तयार झाली. ४]कादंबरी वाङ्मम यात विद्यार्थ्यांची अभिरुची निर्माण झाली.

५) कादंबरी लेखनाची संरचनासूत्र लक्षात आले.

CO Paper – VIII वैचारिक साहि-त्य

१] वाङ्ममयीन व भाषिक आकलन क्षमता वाढली.
२]कालानुक्रमे अभ्यास घटकाद्वारे अध्ययन सुलभता निर्माण झाली.
३]आधुनिक कालखंडातील विचारधारा समजून घेतली.
४]अभ्यासाच्या व लेखनाच्या अभिरुची विकसित झाल्या.
५]वैचारिक वाङ्ममयाचा परिचय घडला.

Course Marathi BA/B.Com./B.Sc. TY

CO paper-IX मध्ययगु ीन मराठी वांग्मयाचा इति हास.

१) मराठी वांग्मयाचा स्वरूप अभ्यासता आले.

२) मध्ययुगीन संत वांग्मयाचा परिचय करून घेता आले.

३) मध्ययुगीन साहित्य बद्दलची अभिरुची वाढली.

४) साहित्यातून प्रकट झालेल्या मानवी मूल्यांचा परिचय झाला.

५) वांग्मय निर्मितीच्या प्रेरणा माहीत झाल्या.

CO Paper X साहित्य विचार.

१) साहित्य म्हणजे काय त्याची लक्षणे विद्यार्थ्यांच्या लक्षात आली.

२) भामह, रुद्रट, दंडी, भरतमुनी या काव्य शास्त्राची ओळख झाली.

३) अतिशयोक्ती,रस,ध्वनी व पाश्चात्यांनी सांगितलेले प्रयोजन लक्षात आले.

४) साहित्याची भाषा आणि शब्द शक्ती विचार विद्यार्थ्यांनी आकलन करून घेतले.

५) भरत मुनीचा रस सिद्धांत आणि साहित्य सिद्धांताचे महत्त्व त्यांच्या लक्षात आले.

CO Paper XI मध्ययुगीन मराठी वाङ्मयाचा इतिहास

१) मध्ययुगीन रचनाप्रकार अवगत झाले.
२) संत साहित्य, पंडित साहित्य, शाहिरी साहित्य बखर साहित्य या प्रकाराची माहिती झाली.
३) मध्ययुगातील महानुभव, नाथ, वारकरी ,समर्थ दत्तसंप्रदायाची विचार व आचार पद्धती लक्षात आली.
४) मध्ययुगीन भाषेतील शब्दकळा व भाषिक सौंदर्य विद्यार्थ्यांनी आकलन करून घेतले.

CO Paper XII भाषावि ज्ञान व व्याकरण

१) अभ्यासघटक अभ्यास केल्यानंतर विद्यार्थ्यांमध्ये भाषेबद्दलची आवड निर्माण झाली.
२) भाषाविज्ञान आणि मराठी भाषा यांचा सहसंबंध लक्षात आला.
३) भाषेचे मुख्य कार्य कोणते असतात? हे लक्षात आले.
४) ऐतिहासिक भाषा विज्ञान म्हणजे काय? याचा परिचय झाला.
५) अर्थपरिवर्तन व ध्वनी परिवर्तन या भाषिक परिवर्तनाची माहिती मिळाली.
६) प्रमाण लेखनाचे नियम व्यवहारात किती उपयोगी असतात हे लक्षात आले.
७) व्याकरणातील प्रयोग विचार व विभक्ती विचार यांचे स्वरूप समजून घेतले.

B.A. I-SL मराठी

१)मध्ययुगीन व आधुनिक गद्य पद्य वाङ्मयाचा परिचय होतो.
२)मराठीतील वाडमय प्रकाराची ओळख होते
३) मराठी साहित्य निर्मिती आणि त्यांच्या प्रेरणा संबंधी आकलन होते.
४) मराठी भाषेतील व्याकरणाची उपयोजन समजून येते
.५)भाषा ज्ञान वाढते

१) मराठी भाषेच्या उपयोजनाचा परिचय होईल
२) मराठी साहित्याची ओळख होईल
३)गद्य आणि पद्य यातील विविध प्रकाराचा परिचय होईल
४) मराठी भाषेच्या प्रमाण लेखनाची ओळख होईल
५)जीवनमूल्ये कलामूल्ये यांच्याशी परिचय होईल

B.COM. I-SL मराठी

१)मध्ययुगीन व आधुनिक गद्य पद्य वाङ्मयाचा परिचय होतो.
२)मराठीतील वाडमय प्रकाराची ओळख होते
३) मराठी साहित्य निर्मिती आणि त्यांच्या प्रेरणा संबंधी आकलन होते.
४) मराठी भाषेतील व्याकरणाची उपयोजन समजून येते
.५)भाषा ज्ञान वाढते

उपयोगिता
१) मराठी भाषेच्या उपयोजनाचा परिचय होईल
२) मराठी साहित्याची ओळख होईल
३)गद्य आणि पद्य यातील विविध प्रकाराचा परिचय होईल
४) मराठी भाषेच्या प्रमाण लेखनाची ओळख होईल
५)जीवनमूल्ये कलामूल्ये यांच्याशी परिचय होईल

B.COM. II-SL मराठी

१) मध्ययुगीन व आधुनिक गद्यपद्य वाङ्मयाचा परिचय झाला
मराठीतील वाडमय प्रकारांची ओळख झाली
२) मराठी साहित्य निर्मिती आणि त्यांची प्रेरणा यांचे आकलन होते
३) मराठी भाषेतील व्याकरणाची उपयोजन करण्यासंबंधीची माहिती मिळाली.
४) मराठी गद्य पद्य घटकांच्या स्वरूपाची ज्ञान झाले

B.Com Course Outcome

१) वाणिज्य शाखेतील विविध गुणतालिका समजून घेण्यास मदत होते
२) अंकगणित आणि सांख्यिकी शास्त्र यांची ओळख होते
३) व्यवहार जीवनामध्ये हिशोब आवकजावक करण्यास सहकार्य होते
४) व्यावहारिक व गणितीय ज्ञान उंचावते

B.Sc. Course Outcome

१) विज्ञान विद्यार्थ्यांमध्ये वैज्ञानिक दृष्टीकोन वाढीस लागतो
२) विद्यार्थी चिकित्सक आणि संशोधक वृती तयार करतात
३) विद्यार्थी संशोधनाला प्रवर्त होऊन नवीन काहीतरी शिकण्याचा प्रयत्न करतात
४) वैज्ञानिक शोधामुळे मानवी जीवन सुकर करण्यासाठी विद्यार्थ्यांची धडपड सुरू होते
५) तंत्रज्ञान आणि मानवी जीवन यांचा मेळ घालण्यासाठी विद्यार्थी साहित्याचा वापर करतात

B.AII SEC Subject Outcome

१) संभाषण कौशल्य विकासाला सहाय्यक करते
२) मराठी भाषा क्षमतेच्या वाढीस विद्यार्थ्याला मदत होते
३) संभाषण क्षेत्राची तारीख खुली होतात
४) आणि विविध व्यवसायाच्या संधी विद्यार्थ्यांसाठी खुल्या होतात

B.AII SEC Subject Outcome

१) मराठी भाषिक क्षमतांच्या वाढीस मदत झाली
२) विद्यार्थ्यांमध्ये मराठी भाषिक कौशल्य विकास आस्वाद मिळाला
३) विविध क्षेत्रातील व्यवसायाच्या संधी उपलब्ध झाल्या
४) मराठी भाषेतील ग्रंथ प्रकाशनाची स्वरूप विद्यार्थ्यांना समजण्यास मदत झाली

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Course Sanskrit

1. Familiarize students with the holistic approach of Sanskrit literature,
2. provide a panoramic view of the modern studies, researches and approaches worldwide in the field of Sanskrit.
3. Studies and develop a practical interest in the subject, provide students with a scope of gaining an in depth and comprehensive understanding of various facets of Sanskrit language, literature and ancient Indian culture through learning texts from different disciplines of Sanskrit studies, such as Veda, Literature, Grammar, Linguistics, Philosophy, Indian Epigraphy, Palaeography etc.,
4. Offer a platform of comparative studies on western methods of literary theory and interpretation, western methods of logic, Computational Linguistics etc.,
5. Establish the relevance of ancient Indian ideas and wisdom in today's context
6. Acquaint students with Rigvedic hymns and etymological interpretation of words for understanding the meaning of the Rigveda,
7. One of the oldest literary compositions of the world.

Course Urdu

CO's SL Urdu for B.A. B.Com. B.Sc. FY & SY

1. Appreciation skills of Urdu literature developed among students.
2. To understand Urdu Shayari , Qasida, Marsiya, Masnavi& Ghazal.
3. To develop how to write Ghazal and Nazam.
4. Understand Urdu Nasar , Dastan , Novel , Afsana.
5. To develop skill for Fiction writing.

B.A.FY Prose Fiction

Dastan Aur Novel

A general Introduction to prose

1. To developed interest in fiction literature.
2. To introduce mixed social and cultural aspects of Urdu.
3. To develop the ability to understand the cultural diversity of the subcontinent and to train good taste.
4. Student understand the fiction and nonfiction writing.

B.A.FY 2 Understanding Urdu poetry (QasidaAur Ghazal)

1. Student received the knowledge of Urdu Shayari.
2. Students explained the various genera of Urdu Shayari.
3. Cultivating students' tastes and developing creativity in them.

B.A.FY 3 Understanding Fiction (AfsanaAur Drama)

1. To develop the ability to understand
2. Speak & write correct Urdu
3. Learn and able to appreciate Urdu Afsana
4. Student understand the fiction wirting
5. Learn & able to appreciate Urdu Drama
6. Understand of various dramatic text
7. Understand the history of Drama

B.A.FY 4 Understanding in Urdu MasnaviAurNazam

1. Student explained the importance of Urdu Ghazal
2. Student understand the poetry writing
3. Student explained the importance of Masnavi in Urdu literature

B.A.SY 5 Understanding in Urdu Inshaiya Ayr Drama

1. Students Understand the fiction & nonfiction writing
2. Learners are able to appreciate of Urdu Drama
3. Students are able to critically analyses text from different dramatic genres

4. Students understand the nonfiction writing
5. Students understand the history of Drama and Theatre in the world
6. Students understand the skills of Urdu Drama writing
7. Expression skills through dramatization build among students
8. Students explain the process and evolution of Inshaiya nigari
9. Develop the interest in nonfiction writing in Urdu

B.A.SY 6 Understand Urdu MarsiyaAur Rubai

1. Understand the formative elements of Masnavi and Rubai with the reference to the Persian.
2. genres the gradual development In Urdu.
3. Compare and contrast the art of Masnavi and Qasida.
4. Elicit the views of others on the matters of issues.

B.A.SY 7 Study in KhakaAurSwaneh Nigari

1. Students understand the need and importance of nonfiction writing in Urdu.
2. Students understand the meaning, types of Autobiography.
3. Students understand the difference between Khaka and Sawaneh.
4. Develop interest in Khaka nigari and Sawaneh nigari.

B.A.SY 8 Study in NazamaurJadeed Ghazal

1. Humanistic values developed among students through Urdu poetry.
2. Estimate the role of Urdu poetry in building the cultural and literary heritage of Indian in relation to other Indian languages.
3. Skills of appreciation of Urdu Poetry developed among students.
4. Understand the art of Nazam and Jadeed Ghazal and the characteristic features of language used in both the genres.
5. Understand the meaning of new words, phrases, idioms, etc. Used in the test. Understand the connotative meaning of the words used in poetry.

B.A. TY Study of History of Urdu

Tareekh -e- Urdu Zaban -o- Adab

1. To improve the knowledge about Tareek -e- Urdu Zaban -o- Adab
2. To improve the knowledge about Urdu Adab
3. To explain the various theories about origin of Urdu language
4. Evaluate the growth of Hind – Aryayi languages and development of Urdu

B.A.TY 10 Study in Criticism in Urdu

(AdabiTanqeed)

1. The learner develop the knowledge about literary criticism
2. The learner evaluate the gradual development of literary criticism in Urdu with reference to theoretical / perspectives
3. Critically analyses the different schools of criticism / thought that are prevalate in Urdu

B.A.TY 11 Study in fiction and nonfiction History

1. Learner understand the history fiction and nonfiction literature in Urdu
2. Understand the beginning growth and socio-cultural in fiction and nonfiction genres

B.A.TY 12 Study in Criticism

(Adbi Tanqeed)

1. Understand the nature and Scope of literary criticism.
2. Estimate the contribution of different literary critics to Urdu in practical.
3. Understand the contrast the two major literary critical schools, of East and West.
4. Learner Analyze the different schools of criticism / thought that are prevalent in Urdu.

Skill Enhancement Course (SEC) UG. Second Year

Translation and Interview and Press Conference

1. Learner find out the role of translation in putting across colloquiual registers and cascading cultural trophies.
2. Writing skill development among students.
3. Learner understand the importance of media.

Skill Enhancement Course (SEC) UG. Third Year

Mass Media in page and Ishteharsaaziaur Nama nigari

1. Learner learn the Urdu typing in Urdu Inpage in Unicode.
2. Learner understand the importance of Mass Media and Nama nigari.

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Course- Economics

B. A. I Year Economics:

1. Micro Economics (Compulsory) : Paper I & III

1. Understand Meaning, nature and scope will be studied in this course.
2. Obtain more knowledge in the field of modern economics by studying this course.
3. Increase the utility and application to acquire more satisfaction in life.
4. Get the knowledge about Production, Cost and Revenue.
5. Students will be acquainted with the various markets from the point of view of competition.
6. This course will be helpful to realize the actual markets through competitive point of view.
7. The acquisition of knowledge about providing share of different factors of production.

2. Economy of Maharashtra (Optional) : Paper II & IV

1. Awareness about development in economy of Maharashtra will be created.
2. Students will able to understand the various challenges of Economy in Maharashtra.
3. Students will able to study the Problems and various challenges of economy in Maharashtra.
4. This study would be able to suggest remedies for different issues of economy in Maharashtra.

3. Statistical Methods (Optional): Paper II & IV

1. Students will be able to understand the various basic statistical tools and methods of data analysis, methods of sampling and census.
2. Interest among the students to learn technical papers like Statistics, Quantitative Technique, Mathematical Economics and Econometrics will be created.
3. Understanding of the basic concepts of data interpretation with the help of Statistics will be generated.
4. This course is useful for the students to get job where the data analysis is comprehensively used.
5. Understanding of the basic concepts of data interpretation with the help of statistics will be facilitated.

B. A. II Year Economics:

1. Macro Economics (Compulsory): Paper V & VII

1. Understand the basic introductory principles of macroeconomic theory.
2. To help students to understand the basic analytic framework and models of macroeconomics in a gradual manner.
3. To equip students to analyses the real world economic issues in a rational manner.

4. Understand and comment upon real economic issues like inflation, money supply, GDP and their inter-linkages.
5. Understand and comment upon real economic issues like employment and multiplier, acceleration, banking system, open economy, and their interlinkages.
6. It will also allow the students to evaluate various macroeconomic policies in terms of a coherent logical structure.

2. Quantitative Techniques (Optional): Paper VI & VIII

1. The course is helpful to study other branches of economics and research.
2. The course will be useful for the students to understand data analysis, estimation and inference since the course is best on the techniques of statistics.
3. Students will study price differentiation between base year and current year.
4. Students will study the change in economic factors in course of times.
5. Student will use techniques easily in the research of humanities.
6. The course will be useful to the student since the course is best on the statistics techniques like deviation , correlation, regression, time series analysis, .
7. Students will study the economic & social trend with the help of moving average method as well as index number.

3. Cashless Transactions: SEC I

1. Discuss Banking systems inexistence and how they are structured
2. Explain the relative importance of new modes of payments (cashless) in transactions.
3. Discuss the main types of cashless instruments and the main techniques employed by banks.
4. Students will able to use various online mode of payments and can run such their own business.

4. Data Collection: SEC II

1. Demonstrate their understanding of sampling methods and the ability to use collection of data.
2. Identify the appropriate sample techniques for different kinds of research questions.
3. Identify the appropriate source of data in relation to the collection of research data.
4. Able to classify and present the collected data in the form of graph, bar diagram, chart etc.

B. A. III Year Economics:

1. History of Economic Thoughts (Optional) DSE-ECO I & II : IX & XI

1. Pupils will understand the basic economic concepts by studying the course.
2. Students will be able to understand the basic thoughts and ideas of various foreign as well as domestic economic thinkers.
3. Students will acquire the judgment power by studying the comparative approach.
4. Agricultural Entrepreneurship will be adopted by pupils.

5. Students will get knowledge of the exploitation of Indian Economy in the British rule.
6. Students will know how much the political Leadership is successful in solving the economic problems of the society.
7. The students will know the importance of Eastern Economic Ideas on the world level.
8. Students will able to understand the philosophy of both western and Indian thoughts. These courses provide a solid grounding to the learners on the history of ideas and the larger issues of epistemology in social sciences.

2. **Quantitative Techniques (Optional)** : DSE-ECO I & II : IX & XI

1. The course is helpful to study other branches of economics and research.
2. The course will be useful for the students to understand data analysis, estimation and inference since the course is best on the techniques of statistics.
3. Students will study price differentiation between base year and current year.
4. Students will study the change in economic factors in course of times.
5. Student will use techniques easily in the research of humanities.
6. The course will be useful to the student since the course is best on the statistics techniques like deviation, correlation, regression, time series analysis, .
7. Students will study the economic & social trend with the help of moving average method as well as index number.

3. Indian Economy (Compulsory) : GE-ECO I: X

1. Student will acquire the knowledge and understand various aspects of Indian Economy.
2. Demonstrate knowledge and understanding of the basic issues in Economic Development.
3. Student will understand various challenges before Indian Economy.
4. Student will be able to suggest various measures to policy makers for solution of economic problem.
5. Develop a perspective on the different problems and approaches to economic planning and development in India.
6. Understand the role of the Indian Economy in the global context, and how different factors have affected this process.
7. Develop ideas of the basic characteristics of Indian economy, its potential on natural sources.
8. Grasp the importance of planning undertaken by the government of India, have knowledge on the various objectives, failures and achievements as the foundation of the ongoing planning and economic reforms taken by the government.

4. Public Finance (Compulsory): GE-ECO II: XII

1. The student will get broad idea about public expenditure, public revenue , public debt, deficit financing and federal finance.
2. Student will able to analyse different concept of public finance.
3. The student will understand the imbalance between public revenue and public expenditure.
4. The students will suggest various measures to decrease deficit.
5. The student will be able to evaluate working of recent finance commission.

5. Financial Inclusion and Financial Literacy: SEC-ECO III

1. Student will be able to create their own financial plan.
2. Student will be able to create their own budget.
3. Student will propose a personal saving and Investment plan.
4. Student will be examining how their choice of carrier and lifestyles will affect their financial plan.
5. Student will be aware about financial inclusion and financial literacy.

6. Entrepreneurship Development: SEC-ECO IV

1. Understand the concept of entrepreneurship and its functions.
2. The student will also be able to describe the process of entrepreneurship.
3. Explain the competencies of an entrepreneur.
4. Understand the meaning and ways of generating ideas and able to prepare a business plan.
5. Understand the reasons for success and failure of a business plan.
6. Identify the various support structure available for promoting entrepreneurship.

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Course- Geography

Paper- CCGEOG-I An Introduction to Physical Geography

1. To know the formation of continents and Oceans
2. To study the rotation and revolution of the earth and its impact

Paper- CCGEOG - II An Introduction to Human Geography

1. To know the skills human adaptation to nature
2. To understand man environment relationship

Paper- CCGEOG - III Practical Geography

1. To develop abilities among the students to interpret the toposheets, calculate time using longitudes.
2. To learn the techniques of showing the relief and landforms.

Paper- CCGEOG - IV Geomorphology

1. To develop skills among the students to identify the landforms and their agents.
2. To have the knowledge of types rocks and weathering.

Paper- CCGEOG - V Population Geography

1. To study the phases of transition of population growth.
2. To study structure and composition of population with reference to India.

Paper- CCGEOG - VI Practical Geography

1. To develop the skills among the students to interpret the results using representation tools

B. A. Second Year

Paper-SEC-1 Tourism Geography

1. To have the basic knowledge of tourism and its significance.
2. To study the behavioural aspects of tourists in tourist places.

Paper- CCGEOG-X Oceanography

1. To have the knowledge of physical and chemical properties of oceans.
2. To know the types of oceanic currents and their distribution.

Paper- CCGEOG-XI Settlement Geography

1. To provide in depth knowledge about settlement geography
2. To prepare students for various competitive examinations.

Paper-CCGEOG-XI (OR) Geography of Regional Planning

1. To understand and evaluate the concept of region in geography and its role and relevance in regional planning.
2. To identify the issues relating to the development of region and regional disparities.

Paper- XII Practical Geography

1. To develop the technique of representation and analyses of data.

Paper-SEC-2 Soil Geography

1. To have the knowledge of physical and chemical properties of soil.
2. To know the types of soils, their formation, and fertility levels.

B. A. Third Year

DSE GEOG-XV & XVIII Practical Geography

1. To know the skills of construction of projection and map making.
2. To use different projections for the representation of different parts of the globe.

SEC-III An Introduction to Research Methodology

1. To develop the temperament among the students to study the subjects in a systematic and scientific way.

SEC-III Watershed Management (Or Paper)

1. To manage and utilize the runoff water, to protect, conserve and improve the land of watershed, to moderate the floods peaks at down stream area, to rehabilitate the water supply schemes in rural areas and to create water balance sheet for rural area

DSE GEOG-XVI Environmental Geography

1. To provide in depth knowledge about environment.
2. To prepare students for various competitive examinations.
3. To nurture scientific and research approach among the students.

DSE GEOG-XVI Health Geography (Or Paper)

1. To make students acquaint with the concepts like health, disease, preventive and curative medicine.
2. To know the factors affecting on health and health policies and programmes in India.

GE GEOG-XVIII Geography of Maharashtra

1. To aware the students about agricultural and demographic problem and make them able to find remedial measures on these problems.
2. To aware the students with available natural resources and need of conservation and protection.
3. To prepare the students for understanding the region as a dynamic entity.

DSE GEOG-XV & XVIII Practical Geography

1. To make students acquaint with the basic concepts of different survey methods and their use in the field.
2. To develop the skills of village survey and report writing.

SEC-IV Disaster Management

1. To keep students abreast with recent developments in geoinformatics.
2. To help students to make use of interpretation skills in decision-making and planning for the benefit of society.

SEC-IV Interpretation of Aerial Photographs and Satellite Imagery (Or Paper)

1. To keep students abreast with recent developments in geoinformatics
2. To help students to make use of interpretation skills in decision making and planning for the benefit of society

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Course -History

PAPER NO. & NAME: Paper I & V, Historiography

1. This paper has wide scope for study of Historiography.
2. This paper focus on importance of Historical sources.
3. This paper put light on relation of History with related subjects and other Sciences.
4. This paper enable the students to understand Research Methodology in Social Sciences.
5. This paper is useful to contribute constructively towards the building of Indian Historiography.
6. In Research Methodology student will understand the role of Historian.
7. This paper is useful to make preparation for historical research.

PAPER NO. & NAME: Paper – II& VI, India after Independence

1. This paper has wide scope for study of India after Independence.
2. This paper focus on importance of National leaders and their contribution to our nation building.
3. This paper put light on relation of India with other country.
4. Students will understand Political development in India.
5. To contribute effectively towards the building of nation.
6. Student will understand the policy of various leaders.
7. To make preparation for competitive examination.

PAPER NO. & NAME: Paper III& VII, History of Modern Marathwada

1. This paper has wide scope for study of Modern Marathwada.
2. This paper focus on importance of Hyderabad freedom struggle leaders and their Contribution to national integration.
3. This paper is dealt with overall development of Modern Marathwada.
4. This paper put light on formation of Modern Marathwada.
5. Students will understand major events of Hyderabad freedom struggle.
6. Students will get knowledge about regional History.
7. Student will understand the policy of Nizams and its reactions.
8. To make preparation for competitive examination.

PAPER NO. & NAME: Paper IV& VIII, History of Indian Art and Architecture

1. All Indian art has been produced by professional craftsman following traditions handed down in pupillary succession.
2. Changes inquality reflect the varying, but not deliberatelyt varied, changes in racial psychology, vitality and taste.
3. In order to understand Indian society one should study the Art and Architecture of India.
4. Upon completion of this course, student will be able to demonstrate an understanding of History of the discipline of Art History, its origins and its institutional development.

PAPER NO. & NAME: Paper IV& VIII, Archaeology

1. This paper has wide scope for study of Archaeology.
2. This paper focus on importance of Excavations in history.
3. This paper is dealt with Archaeological overall development of India.
4. This paper put light on Archaeology and public Education.
5. Students will understand scope of Archaeology.
6. Students will get knowledge about Archaeological remains.
7. Student will understand the process of excavation.
8. To make preparation for Historical writings.

SEMESTER –III& IV

PAPER NO. & NAME: Paper IX & XIII, Women's In Indian History

1. This paper deal with achievements Women's of Indian History.
2. The important role played by women in various period of history is depicted.
3. This paper focus on transformation of Women's position in society.
4. This paper will facilitate the enlightened thinking of the students.
5. This paper deals with the position of women at rural & urban level through the time.
6. This paper puts light on religious, social & political condition of women in India & Maharashtra.
7. This paper will enrich the knowledge about women's history among students.

PAPER NO. & NAME: Paper X & XIV, History of Modern Maharashtra

1. This paper deal with achievements in social & Educational fields of Modern Maharashtra
2. The women liberation movement is depicted in this paper.
3. This paper put light on the transformation of Modern Maharashtra with various aspects.
4. This paper will enable the progressive thinking of the students.
5. This paper dealt with the regional and local history trends, the student should understand the concepts.
6. This paper puts light on religious, social & political condition of Modern Maharashtra.

7. The historical aspect of this paper will enrich the knowledge of history among students.
8. This paper is useful for the preparation of the various competitive examinations.

PAPER NO. & NAME: Paper XI & XV, History of Modern World (1775 A.D - 1945 A.D)

1. This paper helps to study the various events in the world.
2. The history of modern world is motivational and inspirational.
3. 18th century was transformational in term of Human development in the history of world.
4. Mankind began to move from slavery towards human right with the liberty, equality & Fraternity.
5. The platform was provided through League of nations and united nation organizations to solve the various issues at international level.
6. The students will understand the importance of democracy due to the study of syllabus.
7. It will help to conserve the feeling of unity and humanitarian principles among the human being.
8. It will help to spread the values of humanity.
9. The students will study & analyze the impact of global affairs over India.

PAPER NO. & NAME: Paper Name- XII & XVI Tourism

1. This paper has wide scope for study of Tourism.
2. It focuses on importance of Historical sources.
3. It is connected with all related subjects.
4. It put light on relation of History with other Sciences.
5. Students will understand Tourism in Social Sciences.
6. To enhance the views regarding the Indian art.
7. To contribute constructively towards the building of Tourism.
8. To enrich the Historical understanding of the students with reference to creative arts.
9. In tourism student will understand the role of Tourism in History.
10. To get jobs in Archeology Department and Tourism Industries.
11. To conserve the Historical Monuments and places in their local areas.

PAPER NO. & NAME: Paper- XII & XVI, Trends in Indian History

1. This paper deals with the trends of Indian historiography.
2. It helps to know and focus on important aspects of historiography.
3. It throws light on various trends of historiography.
4. It will help the students to understand the most important aspects of historiography.
5. It will make the students aware of the different trends of Indian history.
6. It will help the students to understand the importance of various aspects of history writings.

PAPER NO. & NAME: Paper –I& III, History of Ancient India (up to 647 A.D.)

1. This paper dealt with the cultural History of Ancient India.
2. This paper has wide scope to learn about the Indus Valley Civilization and Vedic Age.
3. This paper gives emphasis on the study of various dynasties in Ancient India.
4. This paper puts light on the contribution of various kings.
5. This paper will help students to know the archaeological and literary sources.
6. The Students will know about the great kings in Ancient India.
7. The Students will study the different religions.
8. The students will study the process of decline of the great Dynasties.

PAPER NO. & NAME: Paper – II& IV, History of India (648 to 1526 A.D.)

1. This paper will dealt with the cultural and political history of India up to 1526 A.D.
2. This paper creates a bridge to learn the history from Ancient India to Medieval India.
3. This paper creates an interest about the History of Indian and muslim dynasties.
4. This paper shows the achievements of kings from various dynasties.
5. This paper is useful to understand the political History.
6. This paper helps students to understand the muslim invasion and their impacts onIndia.
7. Student will study the Contribution of different dynasties in Indian History.
8. Student will be able to acquire knowledge about changing dynasties and their impacts On Indian society.

PAPER NO. & NAME: Paper –V & VII, Chhatrpati Shivaji and his Times (1630 A.D. to

1707 A.D.)

1. This paper deals with the history of Chhatrapati Shivaji Maharaj and his times.
2. It helps to know and focus on the nature and policies of ChhatrpatiShivaji'sSwarajya.
3. It throws light on the building of Swarajya and his Kingdom.
4. It is essential to present ChhatrpatiShivaji's contribution in various aspects for people.
5. It will help the students to understand the most important and inspiring history of Medieval Maharashtra.
6. It will help the students to understand the political and administration of this period.
7. It will aware the students about various policies regarding Agriculture, Watermanagement,
8. Environment and Scientific approach of Chhatrpati Shivaji Maharaj.
9. The students will study the process of Mughal kings and British Governors.
10.

Second Year Paper –VI & VIII, History of India (1526 A.D. to 1707 A.D.)

1. This paper contains the cultural History of Mughal India.
2. This paper has wide scope to learn about the political contribution of Mughal Badshah
3. This paper gives emphasis on the study of contribution of British Governor.
4. This paper puts light on different conditions of Indian people under British rule.
5. This paper will help students to know the expansion of Mughal Empire.
6. The Students will know about the great kings in this period.
7. The Students will study the governor Generals policy.
8. The students will study the process of Mughal kings and British Governors.

PAPER NO. & NAME:SKILL ENHANCEMENT COURSE, Paper I & II, TOURISM

1. This paper gives basic information about Tourism.
2. This makes interest among students about Tour for various places.
3. Student will understand the types and management of Tourism.
4. It gives light on historical sites of Tourism.
5. To enhance the views regarding the Indian Tourism.
6. To enrich the understanding of the students with reference to creative sites for Tourist.
7. To enable the students for their vocational careers.
8. To get jobs in Tourism Department and Tourism Industries.
9. To conserve the historical Monuments and places in their local areas.

Third Year SEMESTER – V &VI

PAPER NO. & NAME: Paper -DSE- HIS-I& II, History of Modern India (1857- 1947 A.D.)

1. This paper introduces Indian Freedom Struggle Movements in broad manner.
2. This paper instills the spirit of nationalism among students.
3. This paper makes the students responsible Citizen of the nation.
4. This paper inculcates moral qualities like Devotion, Unity, Fraternity, Brotherhood in students.
5. This paper makes the students aware of criticizing.
6. This paperenhances the national interest among the students.
7. This paper supports the spirit of competency.
8. This paper inculcates the National and International virtues in the minds of students.
9. This paper enlightens the spirit of fellow feeling.
10. This paper elaborates the Modern Indian History in various contexts.

PAPER NO. & NAME: Paper- DSE- HIS-I& II, History of Modern World

1. This paper introduces the major events in the World history.
2. This paper unfolds the global history with the reference to the present issues.
3. This paper narrates the rise of the various ideologies for the human welfare.
4. This paper examines peace keeping process in the modern World.
5. This paper state the importance of the brotherhood, peace, co-operation and National security.
6. The students will perceive the great revolutions like American revolution, French
1. Revolution, Russian revolution.
7. Students will study the social and economic changes in the world history.
8. Student will understand the relations between the nations in the world.
9. Students will streamline the role of League of Nations and U.N.O.
10. Students understand the consequences of the First and the Second World War regarding the present global crises.

PAPER NO. & NAME: Paper - DGE HIS-I&II, Social Reformers in Modern Maharashtra

1. This paper acquaints the students with social change process in Modern Maharashtra.
2. This paper introduces the educational development in Modern Maharashtra.
3. This paper generates curiosity to study the Modern Times History of Maharashtra.
4. This paper enhances the perception ability of the students.
5. This paper widens the broad view of the students about the society.
6. This paper aware the students to know the contribution of Social Reformers.
7. This paper contributes constructively towards the building of society.
8. This paper makes preparation for competitive examinations.
9. This paper maintains the social harmony.
10. This paper knows the legacy of the great social reformers and thinkers.

PAPER NO. & NAME :Skill Enhancement Course, Paper III & IV,

Appreciation of Indian Art

1. This paper enhances the views regarding the Indian Art.
2. This paper enriches the historical understanding of the students with reference to creative arts.
3. This paper enables the students for their vocational careers.
4. This paper gets jobs in Archaeology Department and Tourism Industries.
5. This paper conserves the historical Monuments and places in their local areas.
6. This paper introduces the students to the Indian art from past to present.
7. This paper unfolds aesthetic prosperity of the Indian art.
8. This paper appreciates the various contexts of Indian art.
9. This paper gives wide exposure to the Indian art through site visits and visual effects.
10. This paper creates awakening to conserve the historical heritage by way of establishing the museums.

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Course- Political Science

Paper Title : INTRODUCTION OF POLITICAL CONCEPTS

Paper - I

1. Pupils will understand the basic Political concepts by standing the course.
2. Students will be able to solve the Political problems by standing this course.
3. Students will acquire the judgment power by standing the various Political ideas, concepts and other Political issues concern with Politics.

Name of Course: GOVERNMENT AND POLITICS OF MAHARASHTRA PAPER-II

1. Students will understand the formation, Government and other Political issues concern with Maharashtra Government.
2. Student will be to solve the Political problems by studying this course.
3. Pupils will acquire to understand various Political issues, Political process and Political activity.
4. Students get various political ideas concern with state Government and other relevant Political issues.

Semester - II

Paper Title : INTRODUCTION OF POLITICAL CONCEPTS Pa[per-III

1. Pupils will understand the basic Political concepts by standing the course.
2. Students will be able to solve the Political problems by standing this course.
3. Students will acquire the judgment power by standing the various Political ideas, concepts and other Political issues concern with Politics.

Name of Course: GOVERNMENT AND POLITICS OF MAHARASHTRA. Paper - IV

1. Students will understand the formation, Government and other Political issues concern with Maharashtra Government.
2. Student will be to Solve the Political problems by studying this course.
3. Pupils will acquire to understand various Political issues, Political process and Political activity.
4. Student get various political ideas concern with state Government and other relevant Political issues.

B.A. Second Year (Semester - III)

INDIAN GOVERNMENT AND POLITICS Paper-V

1. The outcome of course lies in building ideal citizens.
2. The Coures Creats competition ready skilled, man power mass awareness about the political structure and functionary among the youth.
3. It will also go a long way in building Democracy and mass awareness among with about Indian Constitutions with their Fundamental Rights and Duties.

Semester – IV

INTERNATIONAL RELATIONS Paper-VI

1. The Utility of the course Lies in the course Constitution in raising the students awareness about the global International Politics with Key concepts approaches and Political Institutions like UN.
2. It will also helps students to prepare themselves for competitive exams like UPSC, MPSC etc.
3. It will career like Political analyst Media, Professionals and Ideal Politicians.

INDIAN GOVERNMENT AND POLITICS paper-VII

1. The outcome of course lies in building ideal citizens competition ready skilled, man power mass awareness about the political structure and functionary among the youth.
2. It will also go a long way in building Democracy and mass awareness among with about Indian Constitutions with their Fundamental Rights and Duties

INTERNATIONAL RELATIONS Paper-VIII

1. The Utility of the course Lies in the course Constitution in raising the students awareness about the global International Politics with Key concepts approaches and Political Institutions like UN.
2. It will also helps student's toprepare themselves for competitive exams like UPSC, MPSC etc. moreover it will career like Political analyst Media, Professionals and Ideal Politicians.

Third Year Semester -V

Paper Title : INDIAN POLITICAL THOUGHT Paper-IX

1. This course will encourage students to understand and decipher the diverse and often contesting ways in which the ideas of nationalism,
2. democracy and social transformation were discussed in Pre and Post-independence India.

Paper Title: WESTERN POLITICAL THINKER Paper-X

1. The course will narrate students the legacy of the thinkers and orient them
   about continuity and change within the western political tradition.
2. It helps them tostudy historical aspects western state and society

Semester -VI

Paper Title: POLITICAL IDEOLOGY Paper-XI

1. This paper will acknowledge students with various classical political ideologies and its contemporary relevance.

Paper Title: MODERN POLITICAL ANALYSIS Paper-XII

1. This paper content will helpful for student to draw new meaning as per recent time they can understand new concept of political science in the ref.

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Class: B. A. I (Sem. I) SOCIOLOGY

Paper Title: Introduction to Sociology – I

1. Student will be able to demonstrate on understanding of how social call affects individual life.
2. To understand society in context of the sociology theory: Knowledge concepts.
3. The present course outcome is satisfactory which involved students with enthusiastically and curiosity regarding the course.
4. Generally, the present course covered more than fifty various job sectors opportunities.

Class: B. A. I (Sem. I)

Paper Title: New Changes in Social Institutions- II

1. Students will obtain a sociological understanding of diverse: Social groups: organization and social institutions.
2. Social institutions are usually conceived of as the basic focuses of social organization: common to all societies.

Class: B. A. I (Sem. – II)

Paper Title: Basic Concepts in Sociology – III

1. This course introduced students how to understand the basic concepts in sociology and fundamental theoretical interrelationship such as interrelationships and demonstrate the relevance.
2. Students became more aware about the theoretical structure while formulating theory. It was helpful to students to know the social background of sociology.

Class: B. A. I (Sem. – II)

Paper Title: Contemporary Social Institutions - IV

1. The students have understood the institutional formation as institutions can refer to mechanism of social order: which govern the behaviour of set of individuals within a given community.
2. Moreover students are aware about the social that institutions are identified with social purpose: transcending individuals and intention by mediating the rules that govern living behaviour.
3. Students have involved in debates about the social impact of sociology have been historically cantered.

Class: B. A. II (Sem. III)

Paper Title: Indian Society: Structure and Change -V

1. The present course subject matter engaged students about the society and structural aspect of society which subject to change.
2. Regarding to this course changes in social structure understood by the students. India is a land of diverse religions.
3. Social structure of India underwent some changes. Indian society, in recent past, particularly since the Independence there are two main forms of social stratification caste and class both are the agencies of social mobility and selection.
4. They decided largely the position that man occupies in society Democracy is very much linked with modernization. Secularism and national integration are soul of India. This course has given insights to the students about social change in India and its continuity.

Class: B. A. II (Sem. III)

Paper Title: Human Rights and Social Justice-VI

1. The course of Human Rights and Social Justice made students aware about principles of human rights are fundamental rights. More students have interacted with lecturers on the concepts of justice fairness, human dignity, equality etc.
2. Students got information about the issues that make social justice difficult to achieve, such as poverty, exclusion and discrimination are in direct contradiction with human rights, which apply to all individuals indiscriminately.

3. This course could help to fight indignity, in addition to promoting equality. This course has provided legal framework that allows individuals to hold government to account and requires the state to create conditions necessary for the achievement for social justice.

Class: B. A. II (Sem. IV)

Paper Title: Issues and Problems in Indian Society – VII

1. Through this course students have learnt about Thomas Pain thoughts that the individual's duty to 'allow the same right to other as we allow ourselves'. Students became more aware about a social issue is a problem that influences many citizens within a society and one that many people strive to solve.
2. Studying this course students are able to illustrate what is a social science, demonstrate how certain social contrition become dominates, and distinguish how labelling something can create expression about behaviour and action.

Class: B. A. II (Sem. IV)

Paper Title: New Social Movements - VIII

1. The course has built up student's confidence about the new social movements. New Social Movements are a type of group action. Students have able to know the Knowledge obtained in this social movement was valuable because they could use it for the cause.
2. This course become helpful to know the students that social movements play such an important role in bringing about social change in political, religious educational, health,

   corporate, government and other institutional areas.
3. Finally, learning outcomes in social movements are more rewarding than other learning outcomes because the outcome includes a direct impact on social change it's become true.

Class: B. A. III (Sem. V)

Paper Title: Western Sociological Thinkers – IX

1. This course has provided the understanding of sociological theory to the students.
2. It's to train students for the application of these theories to social situations, acquaintance with the writing of sociological thinkers, so as this course equipped the students with the oretical insights to know analysis and scenario around them.

3. It's an attempt to familiarize students with the different sociological perspectives and theories.

Class: B. A. III (Sem. V)

Paper Title: Methods of Social Research – X

1. This course became important for the students in the field of sociological research. Research methodology has provided base for scientific thinking and rationalizing the minds, thoughts of students.
2. This course could have major aims to provide basic and fundamental knowledge of research methodology to the students. This course has provided conceptual objectives, tools and techniques of research methodology.
3. This course became significance in providing scientific attitude and temper among the student of social sciences. In general, by doing this course, students will get job opportunities in the research institutions, teaching, research field, corporate field and marketing sector.

Class: B. A. III (Sem. VI)

Paper Title: Modern Sociological Thoughts in India- XI

1. This course has importance of understanding the thoughts of modern social reformers of the India.
2. This course aims to orient the students of sociology towards the ideas, views and thoughts of the modern makers of the India.
3. This course was helpful to understand students that enlighten the contemporary issues and challenges of the country.
4. This course relevance was in social understanding to students which develops and build-up capacities of the young generation of the country.

Class: B. A. III (Sem. VI)

Paper Title: Techniques of Social Research – XII

1. This course become important by which students have learnt about the importance of social research in social sciences.
2. Students have interactive studied about the research methodology, scientific thinking
3. rationalizing the minds.
4. This course has built the confidence of students in scientific attitude and temper. Doing this course became aware to get job opportunities in the research institutions, teaching research field, corporate and marketing field.

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Kisan Shikshan Prasarak Mandal's
SHIVAJI MAHAVIDYALAYA,UDGIR
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NAAC Reaccredited "B" Grade (2.78 CGPA), Covered under UGC 2(f) & 12B Statu
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Dr. V. A. Jadhav
(M.Sc. Ph. D.)
PRINCIPAL

COURSE OUTCOMES FOR ALL PG PROGRAMMES

MASTER OF ARTS

MA –Economics:

1. MICRO ECONOMICS – Paper I & V

1. Understand basic concepts as well as advanced theories in microeconomics. The students will be able to use these concepts and theories to understand the relevance of microeconomics to the real world. The course will illustrate and helps students how microeconomic concepts can be applied to analyze real-life situations.
2. The course is useful for the students to understand consumer's behaviour, production and cost, price determination, distribution and welfare. It is also helpful to understand all the branches of economics.
3. Understand how factor market works, identify the various determinants of firm's demand for factor services, bilateral monopoly, demonstrate monopsony in factor market and factor market equilibrium.
4. Understand how factor market works, illustrate basic tools in welfare economics, and illustrate the concept of social welfare functions and compensation principles.
5. Demonstrate marginal productivity theory of distribution, theory of wages, identify different types of rent, illustrate different theories of interest and profits.

2. MARO ECONOMICS : Paper II & VI

1. The course is useful for the students to understand the functional relationship between the large aggregates. The course equips the students at the postgraduate level to understand systemic facts and latest theoretical developments for empirical analysis.
2. Understand Say's law of market, classical theory of employment and Keynes objection to the classical theory, demonstrate the principle of effective demand and income determination.
3. Understand and explain the process of calculating national income, identify its components, demonstrate circular flow of income, analyse the various income identities with government and international trade, define the concept of green accounting.
4. Explain the meaning of consumption function, relationship between APC and MPC, consumption and income, concept of multiplier and analyse the theories of

absolute and relative income hypotheses. Understand the relationship between investment and savings, demonstrate investment multiplier, and understand the meaning of MEC and MEI.

5. Illustrate the meaning of interest, analyse the various theories of interest IS-LM model.
6. Demonstrate the meaning and function of money, high powered money, monetary and paper system, illustrate various version of quantity theory of money.
7. Analyze different phases of trade cycle, demonstrate various trade cycle theories, understand the impact of cyclical fluctuation on the growth of business, and lay policies to control trade cycle, inflation, deflation, stagflation and reflation, identify different kinds of inflation, causes and effects of inflation on different sectors of the economy, describe different measures to control inflation, Mundel-Fleming open economy model etc.

3. INTERNATIONAL TRADE) PAPER – III & VII (Optional)

1. Identify the basic difference between inter-regional and international trade, understand how international trade has helped countries to acquire goods at cheaper cost and explain it through the various international trade theories.
2. Show the benefits of international trade in a way how nations with strong international trade have become prosperous and have the power to control world economy and how global trade can be one of the major contributors of reducing poverty.
3. Explain how restrictions to international trade would limit a nation in the services and goods produced within its territories and at the same time explain that a rise in international trade is essential for the growth of globalization.
4. Show the importance of maintaining equilibrium in the balance of payments and suggests suitable measures to correct disequilibrium as well.
5. Be aware of the changes in the composition as well as direction of foreign trade after international trade and know the causes and effects of deficits in the balance of payments, measures adopted to correct the deficits and identify the need for having trade reforms.

4. MATHEMATICS FOR ECONOMICS : Paper IV & VIII (Optional)

1. Use and explain the mathematical principles, terms, methods and conventions used in economics;
2. Develop a set of problem-solving and analytical skills to solve problems in economics and other fields of study and everyday decisions;
3. Develop an initial understanding of how to frame economic models in mathematical format;
4. Possess a solid grasp of essential math tools required for the further studies in economic theory.
5. This paper will provide knowledge on applications of mathematical methods in economics such as Quantitative Methods, Theory of Consumer Behavior, Theory of

Production, Price determination, market equilibrium, Determination of Income and Growth Models, Game Theory and Input-output Analysis, Linear Programming.

5. DEMOGRAPHY : Paper IV (Optional)

1. Comprehend the basic concepts and definitions in Demography;
2. Identify the various sources of data in Demography;
3. Describe the population growth scenario of the world, India and its states;
4. Relate the history of population growth to the present day structure and composition of population.
5. The course is useful for the students to understand the importance of population in economic development and need for population policy. The course is also useful in understanding the dynamics of migration and urbanization.

6. ENVIRONMENTAL ECONOMICS : Paper VIII (Optional)

1. Understand the importance of Environment in economic development and need for Environmental policy. The course is also useful in understanding the dynamics of Environment, People and Sustainable Development. Realize the importance and influence of environment on the economy including the quality of manpower.
2. Understand that environmental problem is not the problem of a single country or region but a global problem/issue. Hence, policy formulation may be for all countries.
3. Demonstrate the scientific management of waste materials; realize the role and importance of individuals to keep the environment clean.
4. Understand the causes and victims of environmental pollution like poverty, population explosion, and over-use of resources, careless or unscientific dump/management of wastes.
5. Suggest appropriate measures to correct environmental degradation, aware of those ingredients such as healthy climate, quality of human beings, domestic and other natural habitats and biodiversity levels, productivity and productions, sustainability, etc. are all influenced by environment.

M.A. II Year Economics:

1. Indian Economic Policy: Paper Ix & Xiii

1. Understand the development paradigm adopted in India since independence and evaluate its impact on economic as well as social indicators of progress and wellbeing.Develop ideas of the basic characteristics of Indian economy, its potential on natural resources.
2. Understand the importance, causes and impact of population growth and its distribution, translate and relate them with economic development.
3. Grasp the importance of planning undertaken by the government of India, have knowledge on the various objectives, failures and achievements as the foundation of the ongoing planning and economic reforms taken by the government.

4. Understand the status of various sectors in the economy and analyse the progress and changing nature of agricultural, industry and service sector and their contribution to the economy as a whole.
5. Not only be aware of the economy as a whole, they would understand the basic features of Indian economy, sources of revenue, how the state government finance its programmes and projects.

2. PUBLIC ECONOMICS : Paper – X & XIV

1. Understand the sources of finance both public and private, demonstrate the role of government to correct market failures and possible advantage of public financing.
2. Attain the advantages and knowledge of public investments and other government expenditures. Understand the causes of growing public expenditures for various programmes and policies within and outside the country.
3. Understand the possible burden, benefits and distribution of various types of taxes among various classes of people, know the general trend and impact on general welfare and arouse them to suggest good and bad tax system.
4. Understand the needs of public borrowing from all possible sources to meet necessary public investment/expenditures. Also be alerted to find sources for repayment.
5. Deliver effectively the preparation of budget and how they are passed in the house. Understand the changes in size and flexibility of state and central budget along with the role played by Finance Commission.

3. BASIC ECONOMETRICS : Paper XI & XV

1. This is a course deals with the application of statistical tools for estimating economic relationships, testing economic hypotheses and forecasting.Estimate and interpret the parameters of multiple regressions.
2. To transmit the body of elementary econometrics that enables the study of empirical form of economic theory.
3. To facilitate understanding of the basic concepts of econometrics with the help of statistics and mathematics.
4. To encourage students to analyze economic concepts by econometric methods.
5. An illustrate concepts in economics by using techniques in econometrics. It is also helpful to understand more advanced branches of economics and research.
6. Understands and usage of advanced models forecasting in different complex situations.

4. RESEARCH METHODOLOGY : Paper XI & XV

1. To become familiar with basic knowledge research methodology and sampling techniques
2. Understand various methods for conducting social science research.
3. To learn various approaches, methods, tools and techniques in research.
4. To obtain basic knowledge on computer, data, and estimation of statistical tools by using software and analyzing the results of economic relationships, testing economic hypotheses and forecasting.

5. To become familiar with basic knowledge on computer, with statistical software, to draw distributive tables, graphs, trend lines.
6. To estimate the parameters with the help of software and Interpret.

5. QUANTITATIVE TECHNIQUES: Paper XII & XVI

1. To transmit the quantitative tools of basic as well as advances statistics that enables the study of economic theory at the post graduate level.
2. To facilitate understanding of the basic concepts lead to research in economics.
3. To encourage students to analyze economic theories and research by quantitative methods.
4. Illustrating concepts of economics and research by empirical techniques.
5. Understand more advanced branches of economics like econometrics, Mathematical economics etc.
6. Demonstrate the role of quantitative techniques in the field of business/industry, illustrate different types of equations, solve equations and system of equations, illustrate and apply hypothesis testing.
7. Demonstrate knowledge of basic concept of linear program, duality, capacity to solve linear programming problems', familiar with the basic techniques most commonly used in economic problems.

MA –Political Science:

M.A. First YEAR

Paper - I MODERN POLITICAL THEORY

1. The main purpose of this paper is to develop the critical approach within students towards political system and orient them about their duties towards it.

Paper – II POLITICAL INSTITUTIONS IN INDIA

1. The main objective of this paper to understand explaining the structure and functions of the main institutions the course will try to acquaint students with the idea of institutional balance of power as discussed in the Indian constitution

Paper – III INTERNATIONAL RELATIONS

1. The main objective to study this paper a paper to develop opinion of the student an international issues and theories. Student can see or view any international scenario through its study on the basis of this paper.

Paper – IV PRINCIPLES OF PUBLIC ADMINISTRATION

1. The main purpose of this course is to acquaint the students with interdisciplinary study of political Science and Public Administration

Paper – IV INDIA'S FOREIGN POLICY

1. The main objective of this paper to understand how is change relation students with change and continuity, major issues and debates in India's foreign policy.

Paper – V POLITICAL IDEOLOGY

1. The purpose of this course is to transform the understanding within students that how facts and values are inherently linked although are not same.

Paper – VI COMPARATIVE POLITICAL ANALYSIS

1. The main objective of this course is to inculcate comparative study method to analyze the political process.

Paper - VII MAJOR ISSUES IN INTERNATIONAL POLITICS

1. The main concern of this paper is to develop in depth insight to the emerging nature of International issues and they can make opinion.
2. Independently over these burning issues to acquaint these issues to student, it is cardinal object of this course.

Paper - VIII INDIAN POLITICAL THOUGHT

1. The purpose of this paper is to generate a critical awareness about the distinctive features of the Political thinking tradition in ancient as well as modern India.

Paper – VIII WESTERN POLITICAL THOUGHT

1. The chief objectives is to project the history of political thought as a series of critical, interconnected and open ended conversations about the ends and means of the good life.

M.A. SECOND YEAR

Paper – IX RESEARCH METHODOLOGY

1. To develop and promote research attitude of P.G. students in the discipline of Political Science. To understand different theories and concepts in Social Research.
2. To create Research awareness in P. G. students about contemporary period of today's politics. To give the basic knowledge of Social Research to the students.
3. To increase more and more interest of P.G. Students on social Research and Research activities.

Paper – X POLITICAL SOCIOLOGY

1. The main purpose of this course is to acquaint the students with interdisciplinary approach by connecting two separate disciplines.

Paper – XI PUBLIC POLICY IN INDIA

1. These courses will helpful learners to understand the basic Public Policy paper will helpful or beneficial to students to deep about Public Policy and acquaint knowledge about Public Policy.

Paper – XII INTERNATIONAL ORGANISATIONS

1. The main purpose of this paper is to encourage students to analyze the role of international organizations. To understand the contribution of our country in those organizations.

Paper – XII HUMAN RIGHTS

1. This course will help learners to understand dynamics within socio-economic political and Natural Rights. Indian Constitutional framework across the Universal Declaration of Human Rights.

MA MARATHI

एम आर १ अनिवार्य मध्ययुगीन मराठी वाङ्मयाचा इतिहास	१. मध्ययुगीन संत आणि त्यांची चळवळ यातील सहसंबंध लक्षात घ २. संत साहित्याचे योगदान अभ्यासणे. ३. संतांच्या सामाजिक जाणिवेचे स्वरूप समजून घेता येईल. ४. मध्ययुगीन काळातील मराठी साहित्याचे स्वरूप लक्षात येईल. ५. भक्ती संप्रदायांचे साहित्यिक योगदान कळून येईल.
एम आर २ अनिवार्य समाजभाषाविज्ञान	१. समाज आणि भाषा यांचे सहसंबंध लक्षात येतील. २. भाषेचे व्यक्तीच्या विकासात असणारे योगदान कळून येईल. ३. भाषेविषयीचे गैरसमज दूर होतील. ४. भाषाविज्ञानाचे कार्य समजून येईल. ५. समाज आणि भाषा यांचे सहसंबंध कळून येतील.
एम आर ३ अनिवार्य मुद्रितशोधन	१. या अभ्यासपत्रिकेमुळे विद्यार्थ्यांना लेखनविषयक नियमांचा परिचय होईल. २. शुद्धलेखनाचे महत्त्व कळेल. ३. भाषा आणि व्याकरणाविषयी त्यांचे आकलन वाढेल. ४. शुद्धलेखनविषयक नियमांची माहिती होईल.
साठोत्तरी साहित्यप्रवाह (विज्ञान, मुस्लिम, ख्रिस्ती)	१. साहित्य प्रवाहाच्या संकल्पनेची ओळख होईल. २. विविध साहित्य प्रवाह आणि साहित्यिक यांचे मूल्यमापन कसे करावे याबाबत दृष्टीकोन विकसित होईल. ३. विशिष्ट लेखकाची स्थाननिश्चिती कशी करावी याचे आकलन होईल. ४. साहित्य चळवळीच्या उद्याची कारणमीमा करता येईल. ५. विशिष्ट लेखकांचे योगदान तपासता येईल.
जागतिकीकरणातील साहित्य	१. जागतिकीकरण म्हणजे काय ही संकल्पना स्पष्ट होईल. २. जागतिकीकरणचा भाषा आणि साहित्य यावर कसा प्रभाव पडला याचा अभ्यास होईल. ३. मराठीतील काही महत्त्वाच्या साहित्यकृतींचा या संदर्भात अभ्यास करता येईल. ४. जागतिकीकरणाच्या संदर्भात निवडक साहित्यकृतींचे सूक्ष्म आकलन करता येईल.
मराठवाडाः प्रदेश आणि साहित्य	१ साहित्यनिर्मिती आणि प्रदेश यांचे सहसंबंध कळून येतील. २ मराठवाडा प्रदेशाचे वेगळेपण लक्षात येईल ३ मराठवाड्यातील महत्वाच्या लेखकांच्या लेखनाचा विस्ताराने अभ्यास होईल. ४. मराठवाड्यातील लेखकांचे योगदान तपासता येईल ५. मराठवाड्यातील लेखकांचे वेगळेपण नोंदवता येईल.
ग्रामीण साहित्य	१ ग्रामीण साहित्य ही संकल्पना स्पष्ट होईल. २. मराठी ग्रामीण साहित्याचे वेगळेपण लक्षात येईल.
वाङ्मयीन नियतकालिके	१. नियतकालिकांचे महत्व लक्षात येईल. २. नियतकालिकांनी मराठी साहित्याला दिलेले योगदान कळून येईल. ३. नियतकालिकांचे स्वरुप लक्षात येईल. ४. नियतकालिकांचे कार्य लक्षात येईल. ५. निवडक नियतकालिकांची वाटचाल कळून येईल.

आधुनिक मराठी वाङ्मयाचा इतिहास (1818 ते 1960)	१. आधुनिक मराठी साहित्याचे बदलते स्वरूप समजून घेणे. २. साहित्यातील परिवर्तनाचे योगदान कळून येईल. ३. साहित्यातील आधुनिकीकरणाचा शोध घेणे. ४. वाङ्मयेतीहासाची संकल्पना कळून येईल. ५. स्वातंत्र्याच्या आंदोलनाचे मराठी साहित्यावरील परिणाम लक्षात येतील.
ऐतिहासिक भाषाविज्ञान	१. मराठी भाषेची वाटचाल लक्षात येईल. २. बोलीविषयीचे गैरसमज दूर होतील. ३. स्वभाषेकडे पाहण्याची नवी दृष्टी विकसित होईल. ४. भाषिक परिवर्तनाचे स्वरूप कळून येईल. ५. भाषाकुल संकल्पनेचे ज्ञान होईल.
चळवळींचे साहित्य	१. चळवळीची संकल्पना लक्षात येईल. २. लढा, आंदोलन, चळवळ यांमधील सीमारेषा कळून येतील. ३. समाज बदलासाठी चळवळीचे योगदान समजून येईल. ४. साहित्याशी असणारा चळवळीचा अनुबंध कळून येईल. ५. चळवळीने निर्माण केलेल्या साहित्याचे आकलन करता येईल.
मराठी बोली आणि साहित्य	१. बोलींचे महत्त्व समजून येईल. २. बोलींच्या निर्मितीची कारणे कळून येतील. ३. बोलींचे लालित्य लक्षात येईल. ४. महाराष्ट्रातील बोलींची ओळख होईल. ५. बोलींचा अभ्यास कसा केला जातो हे लक्षात येईल.
बालकुमार साहित्य	१. बालकुमार साहित्याचे महत्व समजून येईल. २. प्रौढ साहित्यापेक्षा निराळे असणारे बालसाहित्याचे वेगळेपण समजून येईल. ३. मराठी बालसाहित्याची व बालसाहित्यिकांची ओळख होईल. ४. भाषांतरित बालसाहित्याचा परिचय होईल. ५. बालसाहित्यातील नव्या प्रयोगांचे आकलन होईल.
प्रादेशिक साहित्य	१ साहित्याचे प्रवाह आणि प्रकार लक्षात येतील. २ काळ आणि साहित्यलेखनाचा दृष्टीकोन याबद्दल जाणीव समृद्ध होईल. ३ महत्वाच्या प्रादेशिक लेखकांच्या लेखनाचा परिचय होईल. ४ भिन्न भिन्न साहित्य प्रवाहातील कला कृतींमध्ये असणारा भूप्रदेश कसा निराळा असतो हे कळून येईल. ५ निवडक कलाकृतींचा परिचय होईल.

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Dr. V. A. Jadhav
(M.Sc. Ph. D.)
PRINCIPAL

COURSE OUTCOMES FOR ALL UG PROGRAMMES

BACHELOR OF COMMERCE

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B.COM FIRST YEAR

B.C. 1.1 Fundamentals of Financial Accounting

1. This course will enable the students to learn principles and concepts of Accountancy.
2. Students are enabled with the Knowledge in the practical applications of accounting.
3. This course will encourage the students about maintaining the books of accounts for further reference.
4. The students will be acquainted with the accounting treatment of Joint venture and Hire purchase system.

B.C.1.2 Business Statistic

1. CO1 Explain fundamental concepts of business statistics.
2. Learners will able to make classification, frequency distribution, presentation of data for effective visualization and analysis of data.
3. Apply measures of central tendency and dispersion for the given data.
4. Identify relationship between two variables
5. Students will relate real life situations/problems in business to statistics and obtain best results.

B.C.1.3 Business Economics

1. Students will be acquainted with the business economic principles and theories as are applicable in business.
2. Students will be able to explain the concept of utility, indifference analysis and consumer surplus.
3. This course will help to arouse the students' interest by showing the relevance and use of various economic theories.
4. This course will help to apply economic reasoning to solve business problems.

B.C.1.4 Fundamentals of Business Communication

1. This course will help to make the students aware about the business communication.
2. This course will help to understand the process and importance of communication.
3. This course will help to develop awareness regarding new trends in business communication, various media of communication and communication devices.
4. This course will help to extend business communication skills through the application and exercises

B.C.1.5.1 Computer for Business

1. This Subject will develop awareness about basics of computer.
2. This course will help to know the recent advances in the Information & technology.
3. This course will help to develop knowledge about internet, email and social networking.
4. The students will familiarize with office management through ICT.

B.C.1.5.5 TPP-I: Goods and Service Tax-I

1. The students will be acquainted with the concepts of GST and its terminology
2. The students will be acquainted with the various transactions for supply and identify levy of a particular tax.
3. Analyze the concepts of supply, time, place, and value for charging GST.

TPP-II: Indian Tax System & Income Tax Law-I

1. The course will help the students to get thorough knowledge about Income Tax Act.
2. It would also enable the students to know about computation of Income from Salary, House property, Business Income, capital gain etc. and Tax liability.

B.C.2.1 Financial Accounting

1. The students will be acquainted with the concepts relating to accounting treatment of special transactions.
2. Learners will able to understand the consignment business and its accounting and also familiarize with the installment purchase system.
3. Students will able to do the accounting of cooperative societies.
4. Learners will able to calculate insurance claim under loss of stock and loss of profit policy.
5. Students will able to do the accounting of Trusts.

B.C.2.2 Business Statistics and Mathematics

1. Students will possess the conceptual knowledge of basic rules of counting, arrangement and selections of objects, theory of probability and Index Numbers.
2. Solve business arithmetic operations with fractions to do business problems, and be able to select appropriate methods need to solve problems.
3. Use percentages, ratios, and proportions for various business applications.
4. Use simple and compound interest to do business calculations such as value of money, maturity value, present value, and future value.
5. Assimilates the statistical techniques used in Business Statistics & Mathematics to solve business problems and decision making.

B.C.2.3 Business Economics II

1. The students will be acquainted to various market structures and situations.
2. Students will be acquainted with the realistic market structure like oligopoly.
3. The students will able to compare different structures with each another.
4. The students will be able to understand the pricing of factors under different theories.
5. The students will be able to determine the prices of factors i.e. rent, wages, interest and profit.

B.C.2.4 Modern Business Communication

1. The students will be able to apply various forms of modern communication
2. It helps in improving speaking skills of the students.
3. The students will be acquainted with the business correspondence i.e. sales letter, inquiry letter, request letter, appointment letter, resignation letter etc.
4. The students will be able to participate effectively in group discussion, seminar and presentations.
5. The students will be acquainted with the Import Export Trade Correspondence.

B.C.2.5.1 Tally ERP 9.0

1. The students will be acquainted computerized accounting.
2. The students will be familiarized Accounting with Tally.
3. The students will be acquainted with the modification/alteration of records in Tally.
4. The students will acquainted with the report generation and its procedure.
5. The students will be able to apply Tally in practical life.

TPP-IV: Indian Tax System & Income Tax Law-II

1. Students will be acquainted with the knowledge of overall. Direct & Indirect Taxation system of India.
2. The students will be able to Compute Income from Business.
3. The students will be able to Compute Income from Profession.
4. The students will be able to Compute Income from other sources.
5. The students will be able to Compute Total Income from after deduction u/s 80C to 80CCD.

B.COM Second Year

BC.3.1 Corporate Accounting

1. The course is beneficial to understand the provision of company act 1956 regarding the preparation of accounts.
2. It is beneficial for students to move in to advance areas i.e. C.A, I.C.W.A, CS etc
3. It could help graduates to work as financial analyst, Corporation.
4. It provides the basic concept of knowledge of buyback, forfeiture of shares.

BC.3.2 Cost Accounting

1. The selection of the appropriate cost accounting and their impact on the business policy.
2. The determination of cost as per element per unit of production.
3. The Identification and control of cost of production.
4. Become a superior Cost accountant and cost analyst.

BC.3.3 Principles of Business Management

1. Successfully completion of this course, students will be able to understand the Managerial functions.
2. The course will help the students to understand the way of implementation of the planning process within the organization.
3. This course would help the students to clarify the basic and fundamental concepts of the management systems.
4. The course will help the students to illustrate the ability to directly leading and communicating effectively.
5. The course would be useful for analyzing, evaluating and synthesizing the information of management.

BC.3.4 Mercantile Law

1. Students will be able to apply and follow the rules and regulations as per the various business and mercantile laws.
2. Students will acquire knowledge and develop understanding of the necessary framework of mercantile law with reference to various provisions and acts.
3. The course will help the students to make acquainted to the students regarding the provisions of Indian contract act.
4. The course will help the students to make acquainted to the students regarding the provisions of various mercantile and business laws.
5. Student has an opportunity to become a company secretary

BC.3.5.1 Fundamentals of Income Tax

1. After Completion of course students will be capable to describe the provisions in the corporate tax law which can be used for tax planning.
2. Student of the course will be able to explain different type of income of their tax liabilities, expenses and their deduction ability.
3. Students who complete their course will be able to learn various direct and indirect taxes and their implications.
4. Students of the course will be able to state the use of various deductions to reduce the taxable income.
5. Student will be capable of choosing a career to become a Tax consultant.

BC.3.5.2 TPP-V: Custom Duty and GST – I

TPP-VI: Income Tax Procedures & Provisions-I

1. Students would acquire knowledge about the legal framework and the ways and means to deal with the legal aspect of different situations under Custom Act and GST Act.
2. The students will be able to apply skills and knowledge in taxation practices in area of custom duty and GST.
3. The students will get skill and knowledge in area of custom duty and GST in actual practice.
4. Students can understand Income Tax system properly, and can get the knowledge of different tax provisions. CO2 Students will be acquainted with the knowledge about preparation of Audit report, Submission of Income Tax Return, Advance Tax, and Tax deducted at Source, Tax Collection Authorities under the Income Tax Act, 1961.

BC.4.1 Advance Corporate Accounting

1. Student can acquire an idea about internal reconstruction of the company.
2. The learners will understand how the two companies amalgamated Students will be able to prepare Holding company Accounts.
3. Students will be acquainted with accounting treatment of liquidation of company.
4. The students will be acquainted with the accounting procedure regarding redemption of debentures.

BC.4.2 Advance Cost Accounting

1. The students will be acquainted with Cost accounting records and cost audit.
2. Students will be acquainted with treatment of normal loss, abnormal loss and abnormal gain in processing industry.
3. Students will be acquainted with the accounting of contractors business.
4. Students will be acquainted with the computation of operating cost per unit of service in transport industry.
5. Students will be acquainted with the Reconciliation between cost accounts and financial accounts.

BC.4.3 Business Management

1. The students will be acquainted with the management theories and contribution of the Management Thinkers.
2. The students will be acquainted with the Training and Development activities of the business organization.
3. The students will be acquainted with various methods of performance appraisal The students will be acquainted with the modes of entering the international business market
4. The students will be acquainted with the recent development in Management

BC.4.4 Corporate Law

1. The students will be acquainted with the Corporate Laws and its features
2. students will be acquainted with the incorporation of the company under corporate law.
3. The students will be acquainted with the financial structure of the company.

4. The students will be acquainted with the modes of acquiring the membership of the company.
5. The students will be acquainted with the corporate governance.

BC.4.5.1 Income Tax Law and Practice

1. The students will be acquainted with the computation of Income from Capital Gain.
2. The students will be acquainted with the computation of Income from Other source.
3. The students will be acquainted with the deductions from Gross Total Income.

BC.4.5.2 TPP-VII: Custom Duty and GST -II

1. The students will be acquainted with the process of registration under GST Act.
2. The students will be acquainted with the Time of supply, Value of supply and Place of supply under GST Act.
3. The students will be acquainted with the exemptions under GST Act.

TPP-VIII: Income Tax Procedures & Provisions-II

1. The students will be acquainted with the provisions regarding computation of income from business and profession.
2. The students will be acquainted with the provisions regarding computation of income from capital gain.
3. The students will be acquainted with the rebates and reliefs under section 87 and 89 of IT Act.
4. The students will be acquainted with filing returns and assessment procedure.
5. The students will be acquainted with Penalty, Survey, Search and Seizure under the law.

B.COM Third Year

BC.5.1 Advanced Accounting-I

1. Students will get the knowledge of various accounting concepts and accounting standards
2. The course will help the students to impart the knowledge about accounting methods, procedures and techniques.
3. The students will be acquainted with Preparation of Final Accounts of Agriculture and Hotel Business.
4. The students will be acquainted with accounting procedures of Underwriting of Shares & Debentures and Branch Accounting.

BC.5.2 Management Accounting-I

1. Students will critically analyze and provide recommendations to improve the operations of organizations through the application of management accounting techniques;
2. Students will demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems
3. Students will demonstrate the need for a balance between financial and non-financial

information in decision making, control and performance evaluation applications of management accounting;

4. Students will evaluate the costs and benefits of different conventional and contemporary costing systems;
5. Students will learn independently and to demonstrate high level personal autonomy and accountability;

BC.5.3 Auditing-I

1. Students will learn about why external audits and other types of assurance services are conducted.
2. Students will get the detailed knowledge about the duties of auditors and other assurance providers and how these have changed over time.
3. Students will learn the meaning of concepts that are fundamental to auditing and assurance services, such as 'independence', 'audit evidence', 'audit risk', 'materiality.'
4. Students will get the knowledge of general terms, the processes involved in auditing and other assurance services.
5. Students will learn the form, content and importance of auditors' reports provided at the end of the audit or assurance service.

BC.5.4B Human Resource Management

1. This course will help the students to develop the understanding of the concept of human resource management and to understand its relevance in organizations.
2. This course will help the students to develop necessary skill set for application of various HR issues.
3. This course will help the students to analyze the strategic issues and strategies required to select and develop manpower resources.
4. The students will be acquainted with the knowledge of HR concepts to take correct business decisions.

BC.5.4C TPP-IX: Income Tax Procedure & Practice

1. Students can understand Income Tax system properly, and can get the knowledge of different tax provisions.
2. The students will be acquainted with knowledge about the preparation of Audit report, Submission of Income Tax Return,
   Advance Tax, and Tax deducted at Source, Tax Collection Authorities under the Income Tax Act, 1961.

BC.5.4BC Training and Field Work

1. The students will be acquainted with the practical knowledge and skill required in real life situation.
2. The students will be getting the experience regarding day to day working of business.
3. The students will be acquainted with the practical knowledge of assessment and computation of Income Tax.

4. The students will be acquainted with the practical knowledge of assessment and computation of GST.

5. The students will be acquainted with the practical knowledgeand skills of HR and Marketing Management practices.

GE-I.2 Labour Laws & industrial Laws-I

1. Providing extensive knowledge regarding the basis of Industrial Relations, Social Equity, Social Security, Growth of Labour.
   Legislation in India, and Government Schemes for the welfare of Labour Classes.
2. Providing an elementary understanding of the concept of Industrial Peace and Labour Harmony as well as an understanding of the everyday application of labor laws.
3. Learners will be acquainted with the Minimum Wages Act 1948, the Payment of Bonus Act 1965, and the Payment of Gratuity Act 1972.
4. Learners will procure the knowledge of the Employee's Provident Fund and Miscellaneous Provision Act 1952, Employee State Insurance Act, 1948

BC.6.1 Advanced Accounting-II

1. The students will be acquainted with the procedure and preparation of public utility accounts.
2. students will be acquainted with the Preparation of Departmental Profit and Loss, Balance Sheet and General Profit.
   & Loss Account (with Loading, internal transfer) The students will be acquainted with the computation of profit from the packages related transactions.
3. The students will be acquainted with the Accounts of Professionals.
4. The students will be acquainted with the Importance, Procedures of Insolvency.

BC.6.2 Management Accounting-II

1. Students will useful to decision making for investment to money of any company. With the help of comparative, commend and trend ratio methods.
2. Make a Critical analysis of financial statements on the basis of accounting ratios.

BC.6.3 Auditing-II

1. Students will learn about vouching and they will get a detailed knowledge about the audit report.
2. Students will get to know about how and why internal audit is important and how does it affects the organization.
3. Students will learn about how the technology is helping auditors in conducting the audit with the help of software.
4. The students will be acquainted with the banking companies conduct the audit and how audit works in finding out the NPA.
5. The students will be acquainted with the different standards which are used to conduct the audit.

BC.6.4B Marketing Management

1. The students will able to explain the fundamental concepts and principles of marketing.
2. The students will be acquainted with the application of Marketing Mix for products and services.
3. The students will be able to examine the process of Marketing in corporate organizations.
4. The student will be able to understand and implement the process of MIS development.

BC.6.4C Goods and Service Tax Procedure and Practice

1. The students will be acquainted with the Assessment under Goods and Service Tax.
2. The students will be acquainted with the how to conduct GST Audit, Finalization of Audit.
3. The students will be acquainted with the maintaining Account and Records under Goods and Service Tax Law.
4. The students will be acquainted with the Inspection, Search & Seizure, Offence and Penalties under GST.
5. The students will be acquainted with the Computation of Tax liability of Registered Person, Exporter, Importer, ISD, Ecommerce operator, RCM, etc.

BC.6.5D Project Work

1. The students will be acquainted with the practical knowledge of filing of Income Tax Returns.
2. The students will be acquainted with the practical knowledge of filing of GST Returns.
3. The students will be acquainted with the data presentation skills
4. The students will be acquainted with the Report writing skills

GE-II.2 Labour Laws & industrial Laws-II

1. Students will gain insights into conceptual knowledge of industrial relations.
2. It helps the students to appraise the extent to which the workers can participate in management.
3. Students can gain knowledge of the mechanism of resolving industrial disputes and will be able to elaborate Industrial.

   Dispute settlement procedures. Learners will comprehend the Industrial Dispute Act of 1947, and various legal concepts such as Arbitration, Awards, Settlement, Strikes, Lockdowns, Lay -off and Retrenchment.
4. Students can realize the provisions for payment of wages and the Child and Adolescent Labour (Prohibition and Regulation) Act, 1986
5. To discuss the legal framework of health, safety, and welfare provisions mentioned under the factories act, 1948, and also the legal framework of The Industrial Employment (Standing Orders) Act, 1946.

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PRINCIPAL

COURSE OUTCOMES FOR ALL PG PROGRAMMES

MASTER OF COMMERCE

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M.COM FIRST YEAR

MC.I Managerial Economics

1. The students will be able to understand basic micro & macroeconomic terms and concepts.
2. The students will develop an understanding of the applications of managerial economics.
3. The students will discuss optimization and utility including consumer behavior.
4. The students will assess the relationships between short-run and long-run costs.
5. The students will explain uniform pricing and how it relates to price discrimination and total revenue.

MC.II Statistical Analysis for Business

1. This course will help the students to Understand and apply survey and sampling techniques.
2. This course will help the students to Explain and apply techniques for preliminary analysis of qualitative data along with further exploring, explaining and predicting.
3. This course will help the students to Use and interpret descriptive and inferential statistics for quantitative data.

MC.III Business Management and Organizational Behavior

1. The students will be able to Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.
2. The students will be able to Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.
3. The students will be able to Analyze the complexities associated with management of the group.

MC.IV.I International Business Environment

1. The students will be able to Explain the concept of the various constituents of environment and their impact on businesses.
2. The students will be able to Apply the trade theories, investment theories, exchange rate theories and regional trading bloc theories and their impact on economic welfare.
3. The students will be able to Analyze the principle and he different exchange rate regimes' impact on businesses.
4. The students will be able to Integrate the concept and opening economies of developing countries like India through RTB and multilateral route (WTO).

MC.V Accounting for Managerial Decision

1. Students will demonstrate the conceptual knowledge of costing systems, cost management systems, budgeting systems and performance measurement systems.
2. Students will analyze and provide recommendations to improve the operations of organizations through the application of managerial accounting techniques.
3. The students will be acquainted with applying standard costing, marginal costing techniques for effective decision making.
4. students will evaluate the costs and benefits of different conventional and contemporary costing systems.
5. Students will learn independently and to demonstrate high level personal autonomy and accountability;

MC.VI Operation Research

1. The students will be able to Explain the concepts of operations research.
2. Analyze the quantitative mathematical models for managerial decision making.
3. Develop plans for optimum use of various resources.
4. The students will be acquainted with the knowledge and Formulate strategies for real business problems.

MC.VII Legal Aspects of Business

1. Students will be able to apply the rules and regulations as per the various provisions of business laws.
2. The course will help the students to make acquainted with the provisions of Indian Contract Act and Competition Act.
3. The students will be acquainted with the provisions and working mechanism of GST.
4. The students will be acquainted with the procedure of obtaining Patents, Copy Rights and Trade Marks.

MC.VIII.1 Corporate Tax Planning and Management

1. The students will be acquainted with the concepts of Tax planning.
2. Distinguish between tax planning and evasion.
3. The students will be acquainted with the different provisions relating to dividends distribution.
4. Determine Financial and Managerial decisions as per tax planning.

M. COM Second Year

MC.3.1 Financial Management

1. This Course will develop the Skills to manage financial resources of a company.
2. This Course will develop the Knowledge about the various sources of finance available to businessmen these days.
3. This Course will develop Abilities to select an investment proposal by analyzing the compounded and discounted value of money invested.

MC.3.2 Advance Financial Accounting

1. The students will become skillful account and finance manager.
2. The students will become skillful NET/SET qualified account and finance teacher.
3. The students will Identify and describe different types of inter-entity relationships based on relevant Australian Accounting Standards.
4. The students will Discuss and solve accounting issues that arise from inter-entity relationships.
5. The students will Read and analyze consolidated financial statements including accounting policies and other information disclosures.

MC.3.3 Research Methodology

1. The students will Familiarize with Research and research problems.
2. The students will understand the Quantitative and Qualitative Methods of research.
3. This will improve students Ability to represent data in tabular as well as graphical manner.
4. The students will grab the Skills of writing Research paper.
5. The students will understand the Quantitative and Qualitative methods of research.

MC.3.4.1 Marketing Management -I

1. The students will become successful marketer.
2. The students will be able to carry research and survey in area of marketing, advertising and sales.
3. The students will become Successful Marketing Manager.

MC.3.4.3 Banking Procedure and Practice-I

1. Describe banking concepts, theories and issues in practice Retail banking products overview-customer requirements and opportunities and challenges in retail banking
2. Identify various procedural operations of banking institutions

MC.4.1 Advanced Financial Management

1. Understand the theoretical and practical role of financial management in business concerns.
2. Application of tools and theories of financial management in problem solving and decision making.
3. Analysis of capital structure, computation of cost of capital and working capital requirements of a firm.
4. Formulation of Finance policy, investment policy, dividend policy and overall ability to handle finance function.
5. It is helpful to prepare students for NET/SET Examinations and also creates opportunity to become successful Finance manager.

MC.4.2 Accounting and Finance

1. It is helpful to make the students to understand the recent trends in accounting and finance.
2. It is helpful to understand the requirements of a career in accounting and finance.
3. It is helpful to make the students aware of working of money and capital markets and their regulatory authorities.
4. It is helpful to prepare students for NET/SET Examinations.

MC.4.3 Research Project Work

1. Understand the research methodology and its applications.
2. The students will be able to carry research and survey in area of marketing, HR, Production, banking, accounting and finance.
3. The students will become scientific researcher.
4. Create a new insights to reach finding
5. Develop the skill in recoding and interpreting.

MC.4.4.1 Marketing Management - II

1. It is helpful to understand the opportunities and challenges in rural marketing.
2. It is helpful to understand the differences between Rural and Agricultural marketing.
3. It is helpful to evaluate different marketing strategies used in rural distribution and promotion.
4. It is helpful to prepare students for NET/SET Examinations.

MC.4.4.3 Banking Procedure and Practice-II

1. It is helpful to give an exposure regarding inter-bank payment system and smart banking.
2. The students will be able to carry the core banking and branch operations.
3. The students will become Successful Bank Manager.
4. The students will be acquainted with the delivery channels and back office operations.
5. It is helpful to prepare students for NET/SET and Banking.

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Dr. V. A. Jadhav
(M.Sc. Ph. D.)
PRINCIPAL

COURSE OUTCOMES FOR ALL UG PROGRAMMES

BACHELOR OF SCIENCE

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B.Sc. Botany:

B.Sc. FIRST YEAR

CCB-IA Theory Paper-I: Viruses, Bacteria Algae , Fungi , Lichens and Mycorrhiza

1. To study and impart knowledge about the occurrence, distribution, structure and life history of lower plants such as algae, fungi, lichens
2. To instill in students an appreciation for the diversity of plant forms and structural organization that exists within plant bodies that allow plants to develop and live as integrated organisms in diverse environments.

CCB-IB Theory Paper-II: Plant Ecology , Phytogeography and Environmental Biology

1. Acquainted with basic concepts of Ecology , Ecosystem Ecological factors, community ecology and phytogeography
2. To provide students with skills necessary for Ecological studies

CCB-IIA Theory Paper-III: Bryophytes, Pteridophytes Gymnosperms and paleobotany

1. To study the occurrence, distribution, structure and life history of bryophytes, pteridophytes and gymnosperms.
2. To provide students with skills in paleobotany studies

CCB-IIB Theory Paper-IV: Taxonomy of Angiosperms

1. To study the types of classificationsartificial, Natural and phylogenetic
2. To study the principles and rules of ICN and taxonomical terminology
3. To study the various plant families and their economic importance

B. Sc. SECOND YEAR

CCB-IIIA Theory Paper-VI: Plant Anatomy

1. To know about the internal structure of the most evolved group of plants, the Angiosperm.
2. To study cells, tissues, meristem, epidermal and vascular tissue system in plants.
3. To acquire knowledge of tissue systems, histology and growth pattern in plants.

CCB-IIIB Theory Paper-VII: Plant Physiology

1. To make students realize how plants function, namely the importance of water, minerals, hormones, and light in plant growth and development; understand transport mechanisms and translocation in the phloem, applications of plant physiology.
2. To acquaint the students with the types and their functions of different biomolecules and secondary metabolites
3. To know the role of different plant growth regulators in plant physiology

CCB-IVA Theory PaperVIII: Plant Embryology

1. 1.To study the flowering and fruiting, reproduction process, role of pollinators, ovule fertilization, Endosperm and seed development in angiosperms.

CCB-IVB Theory Paper-IX: Plant Metabolism and Biochemistry

1. To study of different pathways in Photosynthesis , respiration , nitrogen metabolism
2. To gain the knowledge of basic aspects and applications of plant tissue culture
3. To study the different aspects of genetic engineering and bioinformatics

B. Sc. THIRD YEAR

DSCB-I DSCB-I: Cell and Molecular biology (Theory PaperXII)

1. To know about the ultra structure of a cell, cell wall, cell membrane, cell organelles and chromosomes, cell cycle and cell division.
2. To study in detail the structure of DNA and RNA, protein synthesis, gene structure, gene mutation and related diseases.
3. To acquire knowledge of cell and molecular biology

DECB-I DECB-I: Systematic Botany-I (Theory Paper-XIII)

1. To know about the fundamentals of plant classification.
2. To study in detail the principles of plant taxonomy.
3. To acquire knowledge of different families of polypetalae, gamopetalae and apetalae.

DSCB-II DSCB-II: Genetics and Plant Breeding (Theory PaperXIV)

1. To study Mendelian genetics, gene interaction.
2. To study sex determination, linkage, sex linked inheritance and genetic variations.
3. To study various crop improvement methods in plant breeding.

DECB-II DECB-II: Systematic Botany-II (Theory Paper-XV)

1. To acquire knowledge of different families of monocotyledons .
2. To know about the principles of taxonomy 3. To study in detail the origin of angiosperms.

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B.Sc. Chemistry:

B.Sc. FIRST YEAR

Organic and Inorganic Chemistry Paper I

1. Student should learn basic concept of organic chemistry, Nomenclature.
2. Student get well acquainted with functional group in organic chemistry.
3. To understand the basic concepts and differences aliphatic hydrocarbons.
4. To know about term cycloalkane , cycloalkene and diene.
5. Learn and practice about organic compounds with their names.
6. Students learn some exceptional electronic configuration, trends and Periodicity in the following properties like atomic size, ionization energy, electron affinity & electronegativity.
7. To understand the inert gases forms compounds, different fluoride compounds of xenon.

Physical and Inorganic Chemistry Paper II

1. Learning and understanding rules of logarithm, Rules of drawing graph, Derivatives, Integration , different mathematical concept and SI units, and their use in solving numerical.
2. Learning surface phenomena at heterogeneous surfaces.
3. Student will learn the basic knowledge of gas phase, Kinetic molecular theory, critical phenomenon , liquefaction and molecular velocities.
4. To impart knowledge about solid phase, crystallography and some crystal structure.
5. General characteristics of s-block elements, oxides, hydroxide, carbonate &its complexes
6. Study the oxidation and reduction by different methods.

Organic and Inorganic Chemistry Paper III

1. Student should learn the concept of aromatic hydrocarbons, Aromaticity and antiaromaticity.
2. Student should understand the phenols and synthesis of phenols
3. Student knows about the haloalkene and haloarenes compounds.
4. To know the concepts of carboxylic acids and their derivatives.
5. To know about the types of alcohols and reaction of epoxide.
6. To study the different properties of P- block elements.
7. To know the acids & Bases by different concepts.

Physical and Inorganic Chemistry Paper IV

1. To impart knowledge of atomic structure, different theories of atomic structure, rules of electronic configuration and quantum numbers.
2. Learning of properties of liquid phase as surface tension, Viscosity and parachor.

3. Student will learn the basic knowledge of colloidal state, types, preparation, properties and applications of colloidal state.
4. Learning and understanding of catalysis, types of catalysis and characteristics of catalyzed reactions.
5. To understanding the chemical bond and its different types of bonds.
6. Learning the Concept of hybridization and study of VSEPR & Molecular Orbital theory.

B.Sc. SECOND YEAR

Organic and Inorganic Chemistry Paper VI

1. Learn the mechanism of name reactions.
2. Know the Synthesis, and Reactions of Aromatic Carboxylic and Sulphonic acids.
3. Know the Synthesis, and Reactions of Organometallic compounds.
4. Learn the synthesis, mechanism, applications of active methylene compounds.
5. Gathering basic knowledge of Oils, Fats, Soaps and Detergents.
6. Understand the basic principle and application of Qualitative Analysis.
7. Know the Classification, Properties of Non- aqueous solvents.

Physical and Inorganic Chemistry Paper VII

1. Write an expression of Davisson-Germer experiment.
2. Derive Schrondinger wave equation.
3. Understand De-Broglie's hypothesis and uncertainty principle.
4. Solve the numerical problems based on De-Broglie.
5. Understand concept of entropy.
6. Understand statements of first, second and third law of thermodynamics.
7. Know the meaning of phase, component and degree of freedom.
8. Know the nuclear structure & different energy of nuclear.
9. Understand the different steps & procedure in the gravimetric separation method.

Organic and Inorganic Chemistry Paper VIII

1. Learn the stereoisomerism of Chiral compounds.
2. Know the Classification, and Reactions of carbohydrates.
3. Know the Synthesis, and Reactions of Nitrogen Compounds.
4. Gathering applications of Reagents in Organic Synthesis.
5. Understand the Characteristics of d-Block Elements.
6. Know the Characteristics of d-Block Elements

Physical and Inorganic Chemistry Paper IX

1. Know the rate constant and factors affecting rate of reactions.
2. Write an expression for rate constant (K) for first order, second order reaction.

3. Know the terms cell constant, specific conductivity, equivalent conductivity and molar conductivity.
4. Know the applications of Kohlrausch's law.

5. Compare between thermal and photochemical reactions.
6. Discuss different types of photochemical process.
7. Know the preparation, properties, structure & application of different compounds.
8. Discuss different inter halogen compounds by preparation, properties, structure and uses.

Organic and Inorganic Chemistry Practical paper X

1. Learn basics of thin layer chromatography and distillation.
2. Learn fundamentals of organic qualitative analysis.
3. Learn about organic estimations.
4. Basics of volumetric analysis.

Physical and Inorganic Chemistry Practical Paper XI

1. Calculate normality and strength of the solution using potentiometer and conductivity meter.
2. Find pka value on pH meter.
3. Verify Lamberts-Beer's law colorimetrically and determine unknown concentration of the solution.
4. Determine energy of activation.
5. Determine heat of solution.
6. Study the effect of solute on CST of phenol-water system.
7. Determine the enthalpy of ionization of weak acid / weak base.
8. Determine partition coefficient.
9. Separations of elements from each other & analysis by volumetric method.

B.Sc. THIRD YEAR

Organic and Inorganic Chemistry Paper XII

1. Learn the mechanism of Electrophilic Substitution reaction of Heterocyclic Compounds
2. Know the characteristics, Classification and synthesis of Drugs and Dyes
3. Explaining theories of Color and chemical constitution of Dyes
4. Gathering basic knowledge of Alkaloids, Vitamins and Pesticides
5. Understand the basic principle and application of coordination complexes
6. Know the application of elements in Medicine

Physical and Inorganic Chemistry Paper XIII

1. Understand the concepts of molecular Spectroscopy and its applications
2. Analyze Rotational, Vibrational and Raman, Spectra
3. Interpret the theoretical and experimental methods of chemical kinetics Know the theory and application of Distribution law
4. Explain the Nomenclature, classification and application of Organometallic Compounds

5. Illustrate the classification and application of Metal Carbonyls

Organic & Inorganic Chemistry Paper-XIV

1. To learn the basic principle and terms used in UV, IR & NMR Spectroscopy
2. Acquire the fundamental knowledge of classification and Synthesis of Amino Acid and Peptides
3. Describe the types of Rearrangement
4. Postulates and limitations of VBT and CFT
5. Calculation of CFSE for Tetrahedral and Octahedral Complexes
6. Explain the types of electronic transition and selection rule
7. Apply spectroscopic techniques in analyzing the structure of simple organic Molecules

Physical & Inorganic Chemistry Paper-XV

1. Basic concepts of electrochemistry and its applications
2. Understanding the Nernst heat theorem and the Thermodynamics open system
3. Know the Vant-Hoff's Reaction isochore and numerical on it
4. Explain the types of magnetic substances and effect of temperature on it
5. Biological role of alkali and alkaline earth metal ions
6. Describe the structures and functions of Metal Cluster

SEC III (Section-A) Computer Application in Chemistry OR Applied Analytical Techniques

1. Able to know the use of software and Excel in Chemistry
2. Grasp the concept of Quality Assurance and Quality Control
3. Illustrate the Physical and Chemical analysis of Soil and fuel
4. Be able to evaluate Biological activity and toxicity of oganic compounds using softwares

SEC IV (Section-B) Spectroscopic Techniques and Cosmetic Preparation OR Basic Analytical Chemistry

1. Be able to determine the structure by using Spectra
2. To train the students for the preparation of various cosmetics
3. Know the classification and Fatty acid composition of Oils and Fats
4. Analysis of Oils and Fats by physical and chemical method

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B.Sc. COMPUTER SCIENCE

B. Sc. FIRST YEAR

Basic of Computer Science (BCS-101)

1. To learn Basic Function of Devices like I/O, HDD etc.
2. To Understand the Fundamental of Software and Hardware. Understand the Concept of Operating System and Network.

Introduction to Programming Language using C – (Part-I) (BCS-102)

1. To study of structure of programming languages, structure of c program.
2. To study different keyword for making program.
3. To develop programs using operators and control statement. To describe an array. Student are able to develop application software.

Web Technologies (BCS-103)

1. Design and implement dynamic websites with good aesthetic sense of designing

Elective: Office Automation (BCS104-A)

1. Understand the computer software, hardware, made available to simplify and automate a variety of office operations such as data processing, data manipulating and data presentation with various application those are presents in Microsoft office tools packages.

Elective: Fundamental of Digital Electronics (BCS-104-B)

1. Can have a thorough understanding of the fundamental concepts and techniques used in digital electronics.
2. To understand and examine the structure of various number systems and its applications in digital design.
3. The ability to understand, analyze and design various combinational and sequential circuits.
4. To develop skill to build and troubleshoot digital circuits

Open Elective: Communication skills (BCS-105-B)

1. Understand and demonstrate Basic English usages for their different purposes.
2. Clear entrance examination and aptitude tests.
3. Write various letters, reports required for professional life.

Operating Systems (BCS-201)

1. Fundamental understanding of the role of Operating Systems.
2. To understand the various memory management techniques
3. To apply the cons of process/thread scheduling
4. To understand the concept of a process and thread.

Introduction to Programming Language Using C Part – 2 (BCS-202)

1. To describe a function, storage classes, structure, union, string and functions, Pointers, File Handling, Student are able to develop application software.

Database Management Systems (BCS-203)

1. students will be able to think of ER modelling and creation of own database schema

Elective – Desktop Publishing (BCS-204A)

1. Create personal documents such as business cards and resumes.
2. Create business documents such as flyers and advertisements.
3. Create a newsletter with graphics and draw objects.
4. Create a course project illustrating Desktop Publishing techniques.

Elective – 8085 Microprocessor (BCS-204B)

1. To understand CICS and RISC based Microprocessor.
2. To understand techniques for faster execution of instruction and increase speed of operation of 8085 Microprocessor.
3. Write programs to run 8085 Microprocessor based system.

Open Elective: Communication skills (BCS-205-B)

1. Understand and demonstrate Basic English usages for their different purposes.
2. Clear entrance examination and aptitude tests.
3. Write various letters, reports required for professional life.

B. Sc. SECOND YEAR

Object Oriented Programming (BCS301)

1. Ability to explain the difference between object oriented programming and procedural programming concepts.
2. Ability to program using object oriented features such as inheritance and polymorphism,operator overloading, dynamic memory allocation, file I/O, exception handling, etc
3. Ability to apply object oriented techniques to solve computing problems

Computer Network (BCS-302)

1. Understand basic computer network technology.
2. Students can identify the different types of network topologies and protocols.
3. Students can Identify the different types of network standards.

Data Structures and Algorithm (BCS2-303)

1. Ability to analyze algorithms and algorithm correctness.
2. Ability to summarize searching and sorting techniques
3. Ability to describe stack, queue and linked list operation.
4. Ability to have knowledge of tree and graphs concepts.

Discrete Mathematics (BCS-304-A) (BCS-304 B)

1. Apply mathematical foundation to the discipline of Computer Science

Mathematical Technique in Computer Science (MTCS)

1. Able to use standard mathematical techniques to solve elementary problem.
2. Understand the nature of mathematical proof & be able to write clear & concise proof

(Open Elective) Numerical Abilities (BCS-305B)

1. Solve mathematical problems using analytical methods
2. Solve mathematical problems using computational methods
3. Students can develop design and analyze numerical techniques to approximate solutions to problems

Programming in JAVA (BCS-401)

1. The knowledge of the structure and model of the Java programming language.
2. To use the Java programming language for various programming technologies
3. To develop software in the Java programming language.

Software Engineering (BCS-402)

1. Ability to learn various methods of software development
2. Ability to apply various software testing techniques

Relational Database Management Systems(BCS-403)

1. To study the basic concepts of relational databases
2. Learn and practice data modeling using the entityrelationship and developing database designs.
3. Understand the use of Structured Query Language (SQL) and learn SQL syntax for writing queries.
4. Apply normalization techniques to normalize the databases.

(Elective) Principle of Compiler Design (BCS-404A)

1. One can easily construct the recognizer system for language constructs as a input.
2. Understanding context free grammar.
3. Understanding various parsing techniques and intermediate code.

(Elective) Essentials of computer security (BCS-404B)

1. To develop a basic understanding of cryptography
2. To develop a basic understanding of security policies.

(Open Elective) Logical Reasoning (BCS-405)

1. Identify logical relations among statements.
2. Analyse logically complex statements into their truth functional or quantificational components
3. This enable students to develop their ability to reason by introducing them to elements of formal reasoning

B. Sc. THIRD YEAR

Windows Programming (BCS501)

1. Review the fundamental concepts of Windows Programming in C#.Net
2. Evaluate the logic of different programming concepts.
3. Evaluate the techniques of application development in windows environment.
4. To develop database connectivity application.
5. To evaluate different techniques to develop windows applications.

Python (BCS-502)

1. Write programs using Python programming constructs.
2. Design and Develop applications using Python programming.
3. Design object oriented programs with Python classes.
4. Use exception handling in Python applications for error handling.
5. Design and Develop applications connecting with database.

Data Science (BCS-503)

1. Review the fundamental concepts of Data Science
2. Evaluate the techniques for better Data Science understanding.
3. Evaluate the techniques for perfect Data Analysis
4. To develop applications/algorithms in the field of Data Science
5. To evaluate different Data Science techniques & tools

Software Testing (BCS-504A)

1. Ability to learn various methods of software development.
2. Ability to apply various software testing techniques.
3. Ability to evaluate cost of software testing.
4. Ability to implement different software testing according to types of software

(Elective)Basics of Linux (BCS-504B)

1. Awareness of existing demanding trends in IT industry in order to get placement & research in open source market.
2. Understand the Linux OS architecture.
3. Install and use different types of distributions available in market.
4. Understand the different Linux basic commands.

(Elective) System analysis and Design (BCS-505B)

1. To learn basic things of systems, System development Life cycle, and System Analyst.
2. To determine specific needs of system.
3. Discuss approaches and tasks of system. Planning for developing system
4. Evaluate tools and techniques.
5. Use appropriate methods and techniques to design software.
6. Implementation of Developed System, Evaluation and Testing of system

Mobile Application Development (BCS-601)

1. Awareness of existing demanding trends in IT industry in order to get placement & research
2. Understand the Android OS architecture.
3. Install and use appropriate tools for Android development, including IDE, device emulator, and profiling tools.
4. Understand the Android application architecture, including the roles of the task stack, activities, & services.

Fundamentals of Inage Processing (BCS-602)

1. Review the fundamental concepts of digital image processing system.
2. Evaluate the techniques for image enhancement.
3. Evaluate the techniques for Image restoration.
4. To develop color based image processing applications.
5. To evaluate different filtering method.

(Elective) Softrware Process Management (BCS-604A)

1. Analyze software process maturity, its framework and the reference models
2. Understand the Capability Maturity Model and learn about conventional software management.
3. Understand how to manage software projects and project planning.
4. Analyze project tracking and control.
5. Understand the role of project closure analysis.

(Elective) Linux Administration (BCS-604B)

1. Awareness of existing demanding trends in IT industry in order to get placement & research in open source market.
2. Understand the Linux OS architecture.
3. Install and use different types of distributions available in market.
4. Understand the different Linux administration commands.

(Open Elective) Network Essentials (BCS-605)

1. Evaluate the usability of mobile devices such as smart phones.
2. Select appropriate network technologies in commercial and enterprise applications.

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B.Sc. DAIRY SCIENCE:

B. Sc. FIRST YEAR

Core Course -I Dairy Farming in India

1. Students will learn about traditional systems of cattle, animals housing etc., Role of Dairy Cooperative , NDDB and OFP
2. Understand concept of types and system of Farming
3. One can prepare themselves for future prospectus in dairy farming
4. Establishment of dairy farm.

Core Course - II Milk and Physiology of Lactation

1. Learn about Basic Knowledge about the milk and its Preservation. Understand the Production and Utilization trends of milk in India
2. Adopt the concept of clean milk production, factors affecting quality and quantity of milk
3. Learn the concept of milk secretion theory
4. Explain the various Morphology and anatomy of Udder
5. Judging of physico - chemical properties and Composition of milk.

Core Course - III Processing Technology of Milk

1. Explain basic concepts, Cooling of milk .Milk Processing, Straining, Filtration, Clarification, Pasteurization LTLT, HTST, Homogenization
2. Describe different types Pricing policy
3. Understanding concept of Legal standards and Standardization of milk
4. Solve problems related to procurement of milk
5. Good overview of laws and understand – HACCP, FSSAI, Judging & Grading of milk.
6. One can work as Dairy technologist. One can work as milk Procurement officer and dairy chemist

Core Course - IV Farm Animal Health Management

1. Learn about Economics importance of diseases, Basic knowledge about diseases of farm animals
2. Understand Bacterial , viral, protozoan, Lactating Cows, Parasitic and Protozoan diseases, dystokia, poultry, sheep and goat diseases
3. Development of competency in animal disease control.

Core Course - V Practical paper

1. Learn Morphology of cattle and buffalos, Study of Udder, Recording Temperature, pulse rate, respiration, Heart rate and Auscultation, Drenching, Injections and Vaccinations, Record keeping.
2. Visit to – Dairy farm, Dairy plant, Agricultural and Veterinary College, Veterinary Hospital, Pathological tests – Blood tests, Urine tests, Test for mastitis., Preparation of drugs like, ointment/liniment/bolus
3. Organoleptic evaluation of milk / platform tests.

B. Sc. SECOND YEAR

Core Course - VI Dairy Animal Management

1. Learn Study of general management practices: Grooming, Drying off, Control of bad habits, Castration, Dehorning, Deworming, and Trimming.
2. Demonstration of Casting, restraining and handling of animals, Determination of age and dentation, Identifications marks.
3. Understanding Principles of general management
4. Cattle and buffalo management

Core Course - VII Technology of Indigenous Dairy Products

1. Learn Method of preparation of Indigenous milk products by application of Dairy technology
2. Entrepreneurial opportunities, After completing one can work as supervisor
3. Classification of milk products, scope and limitation of marketing of milk and milk product
4. Dairy consultant manufacturer of one or more Indigenous dairy products

Core Course - VIII Sheep, Goat, Pig and Poultry Farming

1. Discuss basic knowledge of skill related to Sheep ,Goat and Poultry farming
2. Understand the basic concepts of domestication Taxonomic classification Common terminologies used in goat, sheep, poultry
3. One can establish Sheep, Goat and Poultry farming.
4. Learn pig management, Housing systems, Routine operations in goat, sheep, poultry and pig management

Core Course - IX Technology of Western Dairy Products

1. Gaining knowledge of Recent trends in dairy technology, Membrane technology Food preservation, and Water activity.
2. Learn of different western dairy products such as Cheese, Condensed, Evaporated ,Cream &Butter etc
3. In-depth theoretical and practical understanding of manufacturing of western dairy products.
4. After completing one can work as supervisor, Dairy consultant and manufacturer of one or more western dairy products

Lab Course -X Practical paper- X

1. Learn the Morphological and economical characters of breeds of Cattle, Buffalo, Sheep, Goat, pig, poultry
2. Familiarize the different tools of Dairy animal Management
3. Understanding and Demonstration of Grading of Egg.
4. Develop skill in Shearing of Wool

Lab Course XI Practical Paper – XI

1. Learn methods for the preparation of various Preparation of dairy products such as Curd, Lassi, Shrikhand, Kulfi, Ice icream, Khoa, Ghee etc.
2. In-depth theoretical and practical understanding of manufacturing of western and Indigenous dairy products.
3. After completing one can work as supervisor, Dairy consultant Manufacturer of one or more dairy products

SEC I Poultry Farming

1. Learn poultry breeds morphology and economic Importance
2. Understand Poultry housing, Hatchery & Management of diseases.
3. Visits- Poultry farms, Vet. Hospitals, Hatcheries and Poultry feed factories.

SEC II Dairy by-products

1. Learn definition, classification of by-products of Indian Dairy Industry, Composition of by-products.
2. Understand Various principles of utilization of food products. Methods of utilization of skim milk, whey-whey beverage, ghee residue

B. Sc. THIRD YEAR

Core Course -XII Animal Nutrition

1. Learn Role of Various nutrition in animal's nutrition.
2. Understand Basic knowledge of Digestive system of animals and Ruminant digestion
3. Given the knowledge of Evaluation and Estimation of Energy Value of Feed

Core Course -XIII Reproduction in Farm Animals

1. Learn basic knowledge of Reproduction in animals ,
2. 'Given knowledge of modern tools Bio techniques in animals reproduction,E.T.T. Cloning
3. Provide information and training in A.I

Core Course -XIV Fodder production, Feeds and Feeding

1. Introduce learners to key concept of feeds and feeding of livestock
2. Providing information of processing and preservation technology of feeds and fodder
3. Another outcome of the programme is to develop a strong subject foundation in dairy farm owner, Fodder producer

Core Cours e - XV Animal Genetic and Breeding

1. Given the knowledge of basic laws of Mendals Law, Sex linked inheritance. Hardy Weinberg equilibrium
2. Providing information of The basic genetic principles applied in breeding of animals to increase their productivity

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3. Another outcome of the programme is to develop a strong subject foundation in dairying

LAB COU RSE XVI Practical Paper No. XVI

1. Learn samples and preparation of samples for chemical analysis..
2. Providing information of Determination of DM and Moisture, ether extract ,crude fiber ,Nitrogen and crude Protein content in feeds
3. Practical demonstration of Silage Making & Hay Making
4. To understand Feeding standards and nutrient requirement to different categories of livestock, Prepare feed formulations

LAB COU RSE - XVII Practical Paper No. XVII

1. Given the knowledge of Study of reproductive organs of cattle on Charts / Models /Specimens. Estimation of gene frequency, genotype frequency, breeding efficiency of the cow
2. Given the technical and practical knowledge of preparation of artificial vagina, collection of Semen by AV method Preparation of heat expectancy chart. Assembling of AV Use of tools Macroscopic, Microscopic Bacteriological examination of semen.
3. To understand insemination of cow in oestrus

SEC III SEC III. Conservation of Greens

1. Learn Principles of conservation, Suitable crops for conservation and stage of harvesting.
2. Given the technical and practical knowledge of preparation of Silage 1,2,3,4,5 making & Hay Making
3. SE Course will provide additional opportunity for a student to develop skills of interest in this field of study Visits to-silage and hay making units

SEC III SEC IV. Artificial Insemination

1. Learn male and female reproductive system, oestrus cycle Heat detection Technique of AI, Pregnancy diagnosis.
2. Given the technical and practical knowledge of preparation of 1,2,3,4,5 Silage making & Hay Making
3. SE Course will provide additional opportunity for a student to develop skills of interest in this field of study Visits to- Visits to VET Hospitals and AI centre.

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B.Sc. ELECTRONICS:

B. Sc. FIRST YEAR

Basic Electronics and Network Analysis (P-I)

1. Able to identify variety of electronic components viz. resistors, inductors capacitors and their types & uses.
2. Able to understand I-V characteristics of basic electronic components.
3. Able to apply network theorems to simplify given network.
4. Able to distinguish between DC/AC sources, relate various characteristics of sinusoidal voltage and understand use of resonant circuits.

Basic Digital Electronics (P-II)

1. Able to distinguish between analogue & digital signal/data.
2. Able to draw logic circuit for a given Boolean expression.
3. Able to analyse, transform, minimize Boolean expression & implement it.

Semiconductor Devices and Electronic Instruments (P-III)

1. Able to understand I-V characteristics of various semiconductor diodes.
2. Able to understand input/output characteristics of transistor.
3. Able to distinguish between unregulated & regulated power supply and its significance.
4. Able to demonstrate the use of multi-meter & CRO.

Digital Logic Circuits (P-IV)

1. Able to distinguish between JK Flipflop & JKMS Flipflop; between T Flipflop & D Flipflop.
2. Acquire the skill of using FFs for given application such as register, counter etc.
3. Able to present the use of MUX, DMUX.
4. Able to understand the uses of ADC & DAC.

B. Sc. SECOND YEAR

Amplifiers (P-VI)

1. Knowledge of transistor biasing.
2. Analysis of small signal amplifier using h-parameters and designing of CE amplifier.
3. Concept of an ideal amplifier, knowledge of IC 741 and its applications.

Microprocessor and Its Applications (P-VII)

1. Knowledge of microprocessor based systems.
2. Knowledge of Instruction set of 8085 and ALP skills.
3. Understand Working and applications of ICs 74LS373 and Intel 8255.

Introduction to Microcontroller Intel 8051 (P-IX)

1. Knowledge of internal architecture of 8051 and function of each block.
2. Instruction set of 8051 and ALP skills.
3. Knowledge of SFRs, Timers and Interrupts of 8051.

B. Sc. THIRD YEAR

Communication Electronics-I (P-XII)

1. Understanding of communication systems.
2. Working of analogue modulation techniques.
3. Understanding of analogue pulse modulation.
4. Understanding of digital pulse modulation.

'C' Programming (Paper-XIII (B)

1. Knowledge of basics of C programming language.
2. Understanding of control statements, arrays, functions and pointers.
3. C programming skill.

Communication Electronics – II (Paper-XIV)

1. Understanding of Radio Receivers.
2. Knowledge of basics of Microwaves.
3. Knowledge of basics of RADAR systems.
4. Understanding of basics of Mobile communication and optical fibers.

Electronic Instrumentation (Paper-XV(B))

1. Knowledge of characteristics, errors, standards.
2. Working of transducers and their uses.
3. Ability to choose proper transducer.
4. Knowledge of uses of various digital instruments.

Embedded System Design IV(B)

1. Knowledge of Arduino environment.
2. Understanding of Arduino IDE, board.
3. Interfacing skill for LED, LCD and some sensors.

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B.Sc. MATHMATICS

B. Sc. FIRST YEAR

Paper 01: Differential calculus

1. Understanding concept of Limit, Continuity of Single and two variable Functions.
2. Find the Higher order derivatives of Product of Functions
3. Expand functions in terms of infinite series.
4. Find Equation of Tangent, Normal and Length of Tangent, Normal, Sub-tangent, Sub-normal.
5. Understanding of Mean Value Theorem concepts.
6. Understand the concept of Partial differentiation.
7. Use the results to solve problems.
8. Differentiate difference between derivative of single variable and Severable Variables.

Paper 02: Algebra and Trigonometry

1. 1.Add, Subtract and Multiply two Matrices.
2. 2.Recognize the different types of Matrices.
3. 3.Find the Inverse of invertible Matrices.
4. 4.Determine the Rank of a Matrix.
5. 5.Transform matrix to Row Echelon form
6. Solve the System of Linear Equations.
7. Find the Characteristic Roots and Characteristic Vectors of a Square Matrix.
8. Check that every square matrix satisfies its own Characteristic Polynomial.

Paper -03 Integral Calculus

1. Apply method of integration to find the integral of function.
2. Solve examples of definite integrals using Properties definite integrals.
3. Find the area and volume of given shape.
4. Understanding concept of Gamma and Beta Functions.
5. Solve problems on Multiple Integrals

Paper 04: Geometry

1. Understanding concepts on Three Dimensional Geometry.
2. Find equations of Right lines, Planes, Spheres, Cones and Cylinders.
3. Find the Direction cosines of any line under the different given conditions.
4. Understand the intersection of any two or three, three dimensional geometrical figures.
5. Transform the equation of a plane to the normal form.
6. Transform equation of line from the unsymmetrical to the symmetrical form.
7. Find the length of perpendicular from a point to a plane.
8. Find the angle of intersection of two spheres.
9. Understanding concepts of plane of contact

Paper – 05 : Practical on MATLA

1. Understand the basic tools of MATLAB.
2. Student can use MATLAB to solve the linear equations .
3. Students are able to use MATLAB for the findings of Eigenvalues and Eigen vectors.
4. Students are able to plot the two dimensional and three dimensional graphs .
5. Students are able to use for solving Differential Equations.

B. Sc. SECOND YEAR

Paper 06 :- Real Analysis-I

1. Understand basic concepts of sets and their properties.
2. Understand concept of Neighborhood of a point , interior [point of a set, open sets
3. Understand concept of limit point of a set , closed sets , closure of a set dense set.
4. Understand basic concepts of sequences , subsequences, bounds of sequences , limit point of sequences and subsequences.
5. Understand the concept of Cauchy sequence and general principle of convergences. and different
6. types of sequences..
7. Understand concept of infinite series Different types of series , general principle of convergences
8. of series some standard tests for convergence of series.
9. Understand the application of sequences and series to physical sciences such as Fourier's series.

Paper – 07 : Group Theory

1. Understand the concepts on an equivalence relation.
2. Find the examples of equivalence relation.
3. Check whether the given set is a group with respect to given operation or not.
4. Understand general properties of groups.
5. Solve problems on groups.
6. Understand the concepts on cyclic group.
7. Use Lagrange's theorem to solve the problems in number theory.
8. Form a quotient group.
9. Find the kernel of a group homomorphism.

Paper :- 08 Ordinary differential Equations

1. Understanding concept of solution of differential equations, order and degree. Transform the equations into variable separable form.
2. Transform first-order non-homogeneous equation in x and y to homogeneous equation in x and y and solve it.

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3. Find the equations that can be resolved into components equation and solve it. Solve Clairaut's equation.

4. Find the solutions when the auxiliary equations are equal, different, repeated, and imaginary roots.
5. Find the solution of the exact differential equation, rules of finding the integrating factor.
6. Transform non-linear equation to linear equation and solve it.
10. Find integral corresponding to a term of the form e ax, xm, sin ax or cos ax, e axV, xV, x2V in the second member. 10. Find the solution of linear equation with variable coefficients. 11. Transform the equations to the homogeneous linear form.

Paper :- 09:- Real Analysis-II

1. Understand meaning of interval, subinterval, partitions and their refinement.
2. Understanding basic concept of upper integral and lower integral and Riemann integral.
3. Understanding difference between upper sum, lower sum and Riemann sum
4. Acquire the idea about Riemann Inerrability and Riemann Integration
5. Understand various theorems associated with Riemann Integration
6. Develop a knowledge about Riemann Integration and applies into problems
7. Understand the meaning of improper integral.
8. Determine convergence of improper integrals with discontinuities in their domain or infinitelimits
   of integration.
9. Develop skill in checking the convergence of improper integral using various tests of convergence
10. Understanding distinguishes between convergence and absolute convergence of improper integral.
11. Use comparison test with a corresponding improper integral with other improper integral to decide
11. whether improper integral converge or diverge
12. Use the results to solve some problems.

Paper – 10 : Ring Theory

1. Understand given algebraic structure is a Ring or not.
2. Construct the examples of ring with known examples of ring.
3. Differentiate between zero-divisors and non zero-divisors in a given ring.
4. Check whether given two rings are isomorphic or not.
5. Check whether given ideal of a ring is a principal ideal or not.
6. Understand the concepts on principal ideal ring.
7. Understand concepts on Euclidean rings.

Paper – 11 : Partial Differential Equations

1. Classification of PDE.
2. Solve linear as well as non-linear PDE of first and second order.
3. Apply PDE techniques to predict the behavior of certain phenomena.
4. Solve real problems by identifying them approximately from the perspective of PDE.
5. Mathematical formation of real problem precisely.
6. Solve problem using boundary conditions.

B. Sc. THIRD YEAR

Paper No 12 :- Metric Spaces

1. How the various types distances are to be define on a same set.
2. Student can understand the concepts of open sphere and closed sphere.
3. Student can understand the concept of open and closed sets.
4. Student can understand the concepts of subspaces.
5. Student can understand the concepts of positions of a point in the space i.e. Adherent point, limit
6. point, Boundary point , Interior of a set and exterior of a sets 6. Student can understand the concepts convergences and completeness.
7. Student can understand the concept of fixed point and Banach principle. .
8. Student can understand the concepts of continuity and uniform continuity
9. Student can understand the concept of compact and non compact sets.
10. Various properties of compact sets,
11. Student can understand the concepts of connectedness of sets.
12. After completion of this course student can aware with basic concepts of functional analysis.

Paper – 13 : Linear Algebra

1. Define a vector space.
2. Check subsets for being subspaces.
3. Decide whether the given vectors are linearly dependent or independent.
4. Find dimension of the given vector space.
5. Find basis of the given vector space.
6. Construct orthonormal basis from given basis.
7. Find lengths of vectors and decide about their orthogonality.
8. Apply linear transformations through matrix approach.

Paper – 14 : Numerical Analysis

1. Know the various forward and backward operators
2. Understand the difference between equal and unequal differences
3. Concepts of central differences
4. Understand the process of numerical differences.
5. Understand the process of numerical Integrations
6. Understand how to solve the differential equations numerically
7. Process of errors in the solutions.
8. Students can understand the difference between the continuous and discrete processes.

Paper –15 Complex Analysis

1. 1 Understand difference between real number system and complex number system.
2. Understand various forms of complex number system
3. Understand the concepts of limit, and derivative of functions of complex variables.
4. 4 Understand the Sufficient condition for Differentiability.

5. Understand the Concepts of Analytic functions and harmonic functions,
6. 6 . Understand the concepts of , Exponential and Logarithmic functions.
7. .Understand the concept of Trigonometric and hyperbolic functions.

Paper – 16 : Integral Transforms

1. Know the way integral transforms are defined.
2. Understand the applicability and utility of integral transforms.
3. Find Laplace transforms for standard and general functions.
4. Find Laplace transforms of derivatives, integrals, multiples and of periodic functions
5. Find inverse Laplace transforms of functions.
6. Apply shifting properties.
7. Solve individual differential equations and their systems with initial conditions.
8. Find Fourier Complex, Fourier sine and Fourier cosine transforms for functions.

Paper 17 (A) Topology / Mechanics

1. 1 Understand Concept of Topological spaces ,
2. 2Understand Topological Properties of Sets.
3. 3.Understand the concept of order Topology and product topology
4. Understand concept of Subspace topology.
5. Understand Concept of Closed sets limit points.
6. Understand of continuity.
7. Understand the separation properties like Hausdroff Spaces.
8. 8 Understand Concept of Connected Spaces and compact Spaces.

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B.Sc. Microbiology:

B. Sc. First year

CCMB I – Introductory Microbiology P- I

1. Have developed a good knowledge of the development of the discipline of
2. Microbiology and the contributions made by prominent scientists in this field.
3. Have developed a very good understanding of the characteristics of different
4. types of microorganisms, methods to organize/classify these into and basic tools to study these in the laboratory.
5. Are able to explain the useful and harmful activities of the microorganisms.
6. Are able to perform basic experiments to grow and study microorganisms in the laboratory.

CCMB I – Fundamentals of Microbiology P-II

1. Describe characteristics of bacterial cells, cell organelles, cell wall composition and various appendages like capsules, flagella or pili.
2. Differentiate a large number of common bacteria by their salient characteristics; classify bacteria into groups.
3. Describe the nutritional requirements of bacteria for growth; developed
4. knowledge and understanding that besides common bacteria there are several other microbes which grow under extreme environments.
5. Perform basic laboratory experiments to study microorganisms; methods to preserve bacteria in the laboratory; calculate generation time of growing bacteria.

CCMB II – Basic Microbiology and Biomolecules-P-III

1. Developed a very good understanding of various biomolecules which are required for development and functioning of a bacterial cell.
2. Have developed how the carbohydrates make the structural and functional components such as energy generation and as storage food molecules for the bacterial cells Well conversant about multifarious function of proteins; are able to calculate
3. enzyme activity and other quantitative and qualitative parameters of enzyme kinetics; also knowledge about lipids and nucleic acids.
4. Student are able to make buffers, study enzyme kinetics and calculate Vmax, Km, Kcat values.

CCMB II- Microbial Physiology – P-IV

1. Principles which underlie sterilization of culture media, glassware and plastic ware to be used for microbiological work.
2. Outcome 2. Principles of a number of analytical instruments which the students have to use during the study and also later as microbiologists for performing various laboratory manipulations.
3. Handling and use of microscopes for the study of microorganisms which are

among the basic skills expected from a practicing microbiologist. They also get introduced a variety of modifications in the microscopes for specialized viewing.

4. Several separation techniques which may be required to be handled later as microbiologists.

B. Sc. Second year

CCMB III – Applied Microbiology (P-VI).

1. Understood what are viruses and the chemical nature of viruses, different types of viruses infecting animals, plants and bacteria (bacteriophages)
2. Understanding about the biology of bacteriophages.
3. Gained knowledge of a variety of plant viruses and animal viruses.
4. The ability to describe role of viruses in the causation of the cancer'

CCMB III – Immunology(P-VII).

1. Describe useful and harmful activities of fungi and algae.
2. Identify commonly available fungi and algae and their characteristics.
3. Discuss how fungi and algae are used as biofertilizers in agriculture and as biopesticides.
4. Grow mushroom in the laboratory

CCMB IV- Food, Soil Microbiology and Microbial Ecology (PVIII)

1. Understood genome organization of model organisms namely E. coli and Saccharomyces, and the molecular mechanisms that underlie mutations.
2. Developed a fairly good knowledge about the three well known mechanisms by which genetic material is transferred among the microorganisms namely transformation, transduction and conjugation.
3. Are able to describe different types of the extrachromosomal elements or the plasmids; the nature of the transposable elements in the prokaryotic and the eukaryotic cells.
4. Hands on skills of isolation of plasmid DNA from bacterial cells and its visualization by performing agarose gel electrophoresis.

CCMB IV- Medical microbiology (PIX)

1. Describing the growth characteristics of the microorganisms capable of growing under unusual environmental condition of temperature, oxygen, and solute and water activity.
2. Describing the growth characteristics of the microorganisms which require different nutrient for growth and the associated mechanisms of energy generation for their survival like autotrophs, heterotrophs, chemolithoautotrophy etc.
3. Differentiating concepts of aerobic and anaerobic respiration and how these are manifested in the form of different metabolic pathways in microorganisms.

B. Sc. Third Year

CCMB V -Microbial Genetics (P – XII)

1. Understood genome organization of model organisms namely E.coli and Saccharomyces, and the molecular mechanisms that underlie mutations.
2. Developed a fairly good knowledge about the three well known mechanisms by which genetic material is transferred among the microorganisms namely transformation, transduction and conjugation.
3. Are able to describe different types of the extrachromosomal elements or the plasmids; the nature of the transposable elements in the prokaryotic and the eukaryotic cells.
4. Hands on skills of isolation of plasmid DNA from bacterial cells and its visualization by performing agarose gel electrophoresis.

CCMB V - Microbial Metabolism (P – XIII A)

1. Describing the growth characteristics of the microorganisms capable of growing under unusual environmental condition of temperature, oxygen, and solute and water activity.
2. Describing the growth characteristics of the microorganisms which require different nutrient for growth and the associated mechanisms of energy generation for their survival like autotrophs, heterotrophs, chemolithoautotrophy etc.
3. Differentiating concepts of aerobic and anaerobic respiration and how these are manifested in the form of different metabolic pathways in microorganisms

CCMB VI - Molecular Biology (P-XIV)

1. Are capable of describing a large number of substrates that are used for the industrial fermentation processes.
2. Have developed an understanding of different types of reactors or fermenters which are used for laboratory, pilot and industrial scale fermentations and their processes parameters.
3. Have acquired a detailed knowledge of number of products which are produced by industrial fermentation processes

CCMB VI – Industrial Microbiology (P – XVA)

1. Have developed a fairly good knowledge and understanding of different types of environments and habitats where microorganisms grow including the microbiomes of the human gut and animal gut.
2. Are able to identify the important role microorganisms play in maintaining healthy environment by degradation of solid/liquid wastes; how these activities of microorganisms are used in sewage treatment plants, production of activated sludge and functioning of septic tanks
3. Have understood the significance of BOD/COD and various tests involving use of enumerating fecal E.coli for assessing quality of water.

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4. Have developed the practical skills for conducting experiments to assess the BOD/COD of wastewaters and their interpretation; practically assess the portability of drinking water by the use of standard microbiological tests.

B.Sc. PHYSICS

B.Sc. FIRST YEAR

Mechanics and Properties of Matter Paper – I

1. Apply knowledge of the properties of matter, thermodynamics, and atomic and nuclear physics to explain natural physical processes and related technological advances.
   Use an understanding of elementary mathematics along with physical principles toeffectively solve problems encountered in everyday life, further study in science, and in the professional world.
2. Design experiments and acquire data in order to explore physical principles, effectively communicate results, and critically evaluate related scientific studies.
   Assess the contributions of physics to our evolving understanding of global change and sustainability while placing the development of physics in its historical and cultural context

Mathematical Methods in Physics CCP I - (Section B) P-II

1. After completion of this course students will be able to apply the concept of vectors and complex variables to various physical quantities. This course will also enable the students to solve the problems related to partial differentiation. Fourier analysis unit will enable the students to analyze the periodic functions.

Heat and Thermodynamics Paper – III

1. Students understand the workings of various types of thermometers and the various temperature scales they employ.
2. Students clarify the relationship of molecular motion to temperature.
   Students understand heat as energy
3. Students distinguish between the concepts of heat and temperature
   Students define several heat units such as calories, kilocalories, British thermal units and to relate them to other energy units.
4. Students state the first Law of Thermodynamics and understand its implications.
   Students describe heat engines.
5. Students state the Second Law of Thermodynamics and understand its implications.

Title of the Course: Electricity and Magnetism CCP II - (Section B) P-IV

1. Understand the characteristics and properties of electric and magnetic fields.
2. Experiences electricity & magnetism in practice mode and students enable to understand the role of electricity in day to day life.
3. Students also understand the working principles and applications of various electrical Components.
6. The properties of static electric and magnetic fields and how they arise.
4. The properties of simple, time-dependent electric and magnetic fields and what kind of physical phenomena they generate.
7. Students develop an appreciation of the concepts of order, disorder and entropy.

B.Sc. SECOND YEAR

CCP III - (Section A) P-VI Core Paper: Waves and Oscillations

1. Understand the concepts of mechanics, acoustics
2. Understand physical characteristics of SHM and obtaining solution of the oscillator using differential equations
3. Calculate logarithmic decrement relaxation factor and quality factor of a harmonic oscillator
4. Use Lissajous figures to understand simple harmonic vibrations of same frequency and different frequencies
5. Solve wave equation and understand significance of transverse waves
6. Solve wave equation of a longitudinal vibration in bars free at one end and also fixed at both the ends

CCP III - (Section B) P-VII Core Paper: Statistical Physics, Electromagnetics and Theory of Relativity

1. After taking this course students are able to determine the probability of any type of events.
2. They are able to interpret different types of events.
3. Students have understood the concept of phase space and its volume.
4. They can easily distinguish between different types of particles and statistics and can easily distribute bosons, fermions and classical particles among energy levels.
5. After studying Fermi Dirac statistics, students have learn to deal with many electron system in real life.
6. Understand the relation in between Electromagnetic theory.
7. Explain various phenomenon in light of maxwell equations.
8. Establish the non-existence of the hypothesized stationary ether through the null result of Michelson-Morley experiments with interferometer.
9. The students shall be familiar with the fundamental principles of the general theory of Relativity

CCP IV - (Section A) P-VIII Core Paper: Optics and Lasers

1. Gain knowledge on various theories of light
2. Acquire skills to identify and apply formulas of optics and wave physics
3. Understand the properties of light like reflection, refraction, interference, diffraction etc
4. Understand the applications of diffraction and polarization.
5. Understand the applications of interference in design and working of interferometers.
6. Understand the resolving power of different optical instruments.
7. Gain knowledge in lasers and optical fiber and their applications in communication

Basic Electronics Paper – IX

1. Identify and understand construction and properties of different types of P-N junction diodes.

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2. Apply knowledge of semiconductor devices to use them in different combinations to see their applications as amplifiers and oscillators.
3. Design different circuits using semiconductor devices and demonstrate their usage.

B.Sc. THIRD YEAR

P-XII DSEP I (Section A) - Discipline Specific Compulsory Paper: Quantum Mechanics

1. You will be familiar with the main aspects of the historical development of quantum mechanics and be able to discuss and interpret experiments that reveal the wave properties of matter, as well as how this motivates replacing classical mechanics with a wave equation.
2. You will understand the central concepts and principles in quantum mechanics, such as the Schrödinger equation, the wave function and its interpretation, the uncertainty principle, the relation between quantum mechanics and linear algebra. This includes an understanding of elementary concepts in statistics, such as expectation values and variance.
3. You will be able to solve the Schrödinger equation on your own for simple systems in one to three dimensions, both analytically and by using robust numerical methods. You will have developed an understanding of why both analytic and numerical
4. solutions are important in quantum mechanics, and have acquired experience in using both types of methods on quantum mechanical problems.
   You will be familiar with the wave mechanics.
5. The student has gained knowledge about the time-dependent and time-independent Schrödinger equation for simple potentials like for instance the harmonic oscillator and hydrogen like atoms.

P-XIII A - DSEP I (Section B) – Discipline Specific Elective Paper: A. Solid State Physics

1. Students will be able to classify the materials in different classes based on their physical, thermal, electrical, and magnetic properties
2. Students will be able to analyze different types of matter depending on nature of chemical bonds and their properties
3. Students will be able analyze the crystal structures by applying crystallographic parameters.
4. Students will be able to determine the crystal structure by analysis of XRD data
5. Students will be able to evaluate and analyze the electrical and thermal properties of solids
6. Students will be able to analyze electron transport and energy related problems by applying quantum mechanical principles

P-XIV DSCP II (Section A) - Discipline Specific Compulsory Paper: Atomic, Molecular & Nuclear Physics

1. Describe theories explaining the structure of atoms and the origin of the observed spectra. Identify atomic effect such as Zeeman Effect and Stark Effect.
2. Explain the observed dependence of atomic spectral lines on externally applied electric and magnetic fields.
3. Solved the fundamental puzzle of the existence of strong nuclear force. Nuclear Physics include various interesting branches such as radioactivity, fission and fusion reaction nuclear

4. reactors etc. that has huge applications for the benefits of society.Understand the nature of approximations made on the quantum description of atomic and molecular systems.

P-XV A - DSEP II (Section B) - Discipline Specific Elective Paper A. Digital and Communication Electronics

1. After competition of this course students will be in a position to know the Principle, working and importance of communication systems i.e., modulators, demodulators, transamitters and receivers, etc.Analyze generation and detection of AM & FM signal Identify different radio receiver circuits and role of AGC.
2. Importance of the different types of the number systems, different types of the Logicgates Boolean laws and K-map in the branch of digital electronics.

B.Sc. ZOOLOGY

B. Sc. FIRST YEAR

Paper-I: Biodiversity of Invertebrates

1. The student will be able to identify a given invertebrate upto class level.
2. Ability to understand the contribution of Invertebrates in the biodiversity index of any given habitat.
3. Ability to understand and appreciate the ecological and economic importance of invertebrates and vertebrates.
4. Ability to identify and describe external morphology and internal anatomical features of representative invertebrate species.

Paper-II: Biodiversity of Chordates

1. The student will be able to identify and understand the Biodiversity of Chordates.
2. Ability to understand anatomical relation between different vertebrate classes.
3. The learner will be able to understand the economic importance of Chordates.

Paper-III: Comparative Anatomy of Vertebrates

1. The student will be able to identify and understand comparative anatomical structure of vertebrate organ systems.
2. The learner will be able to understand the evolution of various organs and systems in the vertebrate body according to its environment.
3. Understand the plasticity of organ systems to adapt to the environment and acquiredifferent novel forms.

Paper-IV: Comparative Anatomy of Vertebrates

1. The student will be able to explain the basics processes of vertebrate embryonic development.
2. Ability to describe the various steps in vertebrate development.
3. Identify and explain about the different embryonic structures.
4. Describe the functions of different extra-embryonic structures.
5. Understanding of the Assisted Reproductive Technologies.

B. Sc. SECOND YEAR

Paper-VI: Physiology

1. Monitor their blood pressure and identify blood groups.
2. Understand function and types of heart & circulatory system.
3. Appreciate the basic function of kidney, main function of nerves.

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4. Acquire knowledge on the nature and functions of hormones and learn the mechanism ofhormone action.
5. Learn the structure and functions of Endocrine glands.

6. Understand the structure, development and function of reproductive organs in human.

Paper-VII: Biochemistry

1. Understand the chemical structure and functions of various biomolecules
2. Learn the signaling of biomolecules in cell membrane.
3. Understand the correlation between metabolism of different types of biomolecules.

Paper-VIII: Cell Biology and Genetics

1. Understand the structure and function of the cell as the fundamentals for understanding the functioning of all living organisms.
2. Understand structures and various cellular functions associated with the macromolecules found in cells.
3. Acquire knowledge of Mendelian Genetics and its Extension.
4. Graduates will be able to explain and interpret various processes, phenomena, states and
5. evolutionary tendencies at a biological system level.

Paper-IX: Evolutionary Biology and Genetic Engineering

1. Understand the theories and concepts of evolution.
2. Learn the process of evolution in animals.
3. Understand the patterns of evolutionary changes in animals.
4. Understand the organization and functions of genetic material in the living world.
5. Understand the Recombinant DNA Technology.

B. Sc. THIRD YEAR; SEMESTER –V

Paper-XII: Ecology and Zoogeography

1. Establish relationship between different groups of organisms in an ecosystem.
2. Appreciate and explain the role of plants, animals and other organisms in a habitat.
3. Evaluate effect of each group of organisms on others.
4. Identify issues with Suggest methods and approaches to improve health of an ailing ecosystem.

Paper-XIII(A): Pisciculture

1. Understanding of taxonomy of fish.
2. Knowledge of feeding methods and habits of fish.
3. Knowledge of general fish anatomy and morphology.
4. Knowledge of hydro-geography of India.

Paper-XIV: Ethology, Biometry and Bioinformatics

1. Knowledge and understanding of different forms of behavior in animals.
2. Ability to explain and apply basic biometric computation methods.
3. Describe and elaborate about the different software and techniques in bioinformatics.
4. Use different biological databases to retrieve biological information.

Paper-XV (A): Aquaculture

1. Knowledge of various types of aquaculture and culture methods and Maricultlure.
2. Understanding of fishery science, with a particular focus on the biology, assessment, and management of fish and invertebrate fisheries.
3. Awareness about man-made hazards to aquaculture.
4. Knowledge of role of Larvivorous fishes in relation to public health.
5. Awareness of the role of Government in aquaculture development.

Kisan Shikshan Prasarak Mandal's
SHIVAJI MAHAVIDYALAYA,UDGIR
Dist: Latur 413517 (Maharashtra State)
NAAC Reaccredited "B" Grade (2.78 CGPA), Covered under UGC 2(f) & 12B Statu
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Dr. V. A. Jadhav
(M.Sc. Ph. D.)
PRINCIPAL

COURSE OUTCOMES FOR ALL PG PROGRAMMES

MASTER OF SCIENCE

M.Sc. Botany:

M. Sc. FIRST YEAR

THEORY PAPER-I: BIOLOGY AND DIVERSITY OF MICROBES

1. Understand the morphology, structure and importance of the various organisms.
2. Differentiate between various groups of Fungi, Bacteria, Viruses, and Lichens & Mycorrhiza.
3. Learn the life cycles of individuals belonging to Fungi, Bacteria, Viruses, Lichens & Mycorrhiza.

THEORY PAPER-II: BIOLOGY AND DIVERSITY OF CRYPTOGAMS

1. Understand the morphology, structure and importance of the various organisms.
2. Differentiate between various groups of Algae, Byrophyta and Pterdophyta.
3. Learn the life cycles of individuals belonging to Algae, Byrophyta and Pterdophyta.

THEORY PAPER-III: TAXONOMY OF ANGIOSPERMS AND GYMNOSPERMS

1. Understand the morphology, structure and importance of the various organisms.
2. Differentiate between various groups of Gymnosperms, Angiosperms and fossil plants.
3. Learn the characters of taxa belonging to Gymnosperms, Angiosperms and fossil plants.

THEORY PAPER-IV: PLANT ANATOMY & DEVELOPMENTAL BIOLOGY

1. Understand the anatomy, embryology and palynology of angiosperms.
2. Learn the applied aspects of palynology, embryology and anatomy.

THEORY PAPER-VI: BIOINSTRUMENTATION AND METHODS IN BIOLOGY

1. Understand the actual working and applications of different laboratory equipments.
2. Learn the various techniques used in life sciences and their utility.

THEORY PAPER-VII: CELL BIOLOGY, GENETICS AND PLANT BREEDING

1. Understand the structural organization and functions of cell and cell organelles.
2. Able to understand Gene structure, linkage groups, Genetic inheritance and extra chromosomal inheritance in plants.
3. Understand basic techniques of hybridization.

THEORY PAPER-VIII: PLANT RESOURCE UTILIZATION & BIODIVERSITY CONSERVATION

1. Study of origin, cultivation and economic importances of various plant wealth.
2. Learn the importance of biodiversity and motivation of students for its conservation.

THEORY PAPER-IX: PLANT ECOLOGY, ENVIRONMENTAL BIOLOGY AND PHYTOGEOGRAPHY

1. Able to understand the ecological principles, structure and functions of ecosystem.
2. Learn about the causes of environmental pollution and its control measures.
3. Learn about different phytogeographic regions and their vegetation pattern.

M. Sc. SECOND YEAR

THEORY PAPER-XI: PLANT PHYSIOLOGY

1. Understanding the mechanism of different water based process in plants.
2. Able to understand role of light, hormone in controlling plant activity.
3. Understand important plant process i.e. photosynthesis and respiration.

THEORY PAPER-XII: MOLECULAR BIOLOGY AND BIOSTATISTICS

1. Detailed understanding about the nucleic acid.
2. . Able to understand expression and regulation of different proteins in body.
3. Understanding and interpretation of various statistical tools in biological experiments.

Theory Paper-XIII: PLANT PATHOLOGY-I

1. The students will be able to understand the importance of plant pathology and will helps to develop interest in Plant Pathology.
2. They will bring the awareness among the farmers for losses caused due to epidemics
3. They will opt plant pathology as a Profession.

Theory Paper-XIV: PLANT PATHOLOGY-II

1. Student will know importance of sign and symptoms for detection of pathogens and disease, integrated methods of disease management, use of biological and chemicals in disease management.
2. Students will know symptoms, etiology, disease cycle and management of major diseases of cereals, pulses, oil seeds and vegetables.

THEORY PAPER-XIII: ANGIOSPERMS-I

1. Understand the pre and post Darwinian concept of classification.
2. Learn the floral and vegetative characters of plants belonging to families.
3. Able to identify plants belonging to angiosperms.

THEORY PAPER-XIV: ANGIOSPERMS-II

1. Understand the organization of Root and Stem Apical Meristem.
2. . Learn the basic and applied embryological aspects of angiosperms.

THEORY PAPER-XIII: Seed Technology-I

1. Student will adopt the skill of purity, viability and vigour testing.
2. Student will properly maintain the storage conditions of seeds.

THEORY PAPER-XIV: Seed Technology-II

1. Student will identify seed borne pathogens.
2. Student will recommend the control measures for seed borne diseases.

THEORY PAPER- XVI: BIOCHEMISTRY AND PLANT METABOLISM

1. Understanding the biochemistry and metabolism of amino acids, proteins including enzyme kinetics.
2. Able to understand nitrogen, sulphur and phosphorous metabolism in plant.
3. Understand role and importance of carbohydrate and lipids in plants.

THEORY PAPER- XVII: BIOTECHNOLOGY AND GENETIC ENGINEERING

1. Understanding basic principle and process of tissue culture.
2. Large scale industrial application of plant tissue culture.
3. Able to understand the technique and process of cloning.

THEORY PAPER-XVIII: PLANT PATHOLOGY-III

1. The students will be realize about physiological and molecular changes brought about in host plants.
2. Student will think how to prevent the production of enzymes and toxins of plant pathogens.
3. They will understand how resistant varieties are developed against different pathogens.

THEORY PAPER-XIX: PLANT PATHOLOGY-IV

1. Students will know common pathogens, symptoms, etiology, disease cycle and management of major diseases of fruit plants.
2. Students will know common pathogens, symptoms, etiology, disease cycle and management of post harvest diseases of fruit plants.

THEORY PAPER-XVIII: ANGIOSPERMS-III

1. Understand the interrelationship and general characters of families belonging to orders.
2. Learn the various concepts of species.
3. Able to understand evolutionary aspects of angiosperms.

THEORY PAPER-XIX: ANGIOSPERMS-IV

1. Understand the concept of drug adulteration.
2. Learn the pharmacognostical aspects of common drug plants.
3. Understand the knowledge of important medicinal plants.

THEORY PAPER-XVIIIC: Seed Technology-III

1. Student will produce hybrid seeds in field crops
2. Student will adopt the skills of seed processing and handling of equipment.

M.Sc. CHEMISTRY:

M. Sc. FIRST YEAR, SEMESTER-I

Inorganic Chemistry - Paper I

1. Learn various approaches in analyzing structures of simple molecules. Understand the proposed pathways for reactions taking place in coordination complexes such as substitution reactions, redox reactions etc. and the various factors affecting to rates of these reactions.
2. Learn about mechanisms proposed for reactions taking place in coordination complexes, and will be able to understand to explain the product formation based on these mechanisms.
3. Understand how to construct molecular orbital diagrams for simple molecules as well as coordination complexes.
4. Draw molecular orbital diagrams for sigma and pi bond formation in coordination complexes and will be able to understand and explain the difference between respective molecular orbital diagrams

Organic Chemistry - II

1. Understand the various types of Reaction Mechanism.
2. Adopt the concept of Bonding in Organic Molecules.
3. Learn the concept of Stereochemistry and to identify the Stereo chemical reactions.
4. Explain the various problems of aromaticity, homoaromaticty and antiaromaticity.
5. Familiarize the various types of Substitution reactions and their mechanism
6. Gain knowledge of free radical reactions.
7. Justifies the various effect of substrate.

Physical Chemistry - III

1. Explain basic concepts, laws and postulates of quantum mechanics
2. Describe different wave functions and operators
3. The Schrodinger wave equation for the calculation of Energies of rigid rotor and harmonic oscillator and solve it for hydrogen atom
4. Explain the concept of angular momentum
5. Describe the electronic structure of atoms
6. Good overview of laws of thermodynamics, partial molar properties for different
7. Systems and concept and examples of non-ideal systems
8. Discuss concept distribution with examples, they will be able to explain most probable distribution and thermodynamic probability Concept of partition functions and its significance
9. Can relate and explain the entropy production in different system and understand Onsager's relations
10. Solve problems related to quantum chemistry, will have large horizon of critical thinking and analytical reasoning.

Physical Method in Chemistry IV

1. Understand how to recognize symmetry elements in a molecule.
2. Assign the point group to a molecule.
3. Deal with degenerate and non-degenerate representations.

SEMESTER-II

Inorganic Chemistry Paper : VI

1. Learn basic terms regarding electronic spectra of coordination complexes, interpretation of electronic spectra and various important parameters necessary for it, drawing of Orgel andT-S diagrams used for electronic spectra, prediction of possible electronic transitions present in electronic spectra of coordination complexes etc.
2. He/she will understand magnetic nature of complexes, measurement of magnetic moment in coordination complexes, prediction of magnetic nature of complexes using spin only formula.
3. He/she will learn the terms such as diamagnetic and paramagnetic nature of coordination complexes, difference between them, anomalous magnetic moments, spin cross over etc.
4. He/she will understand the chemistry of carbonyl and nitrosyl molecules, their application as ligand molecules in complex formation, structure and bonding present in various carbonyl and nitrosyls complexes, applications etc.
5. He/she will learn chemistry of boranes, carboranes and metal clusters, the concept of 3C-2e bond used to explain structural aspects in boranes and carboranes, polyhedral skeletal electron pair theory and its applications in explaining structures of metal clustes etc.

Organic Chemistry Paper : VII

1. 1.Gain the knowledge of addition reaction between a hetero atom and double bonded carbon compounds.
2. Learn familiar name Reaction.
3. Obtain an outline about mechanism of Aromatic Substitution reactions Know synthetically the process relevant Organic–Chemical reactions and be able to discuss the mechanism of these reactions.
4. Understand the skill of solving problems of pericyclic reactions Get the clear picture of about pyricyclic reactions.

Physical Chemistry Paper : VIII

1. Understand the basic concepts and properties of surfactants and macromolecules.
2. State and apply different laws, principles, theories related to the electrochemistry. of the solutions.
3. Discuss and apply the information about corrosion, its monitoring and presentation.
4. Distinguish different theories of reaction rates.

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5. Understand the kinetics of complex reactions, catalysis etc.
4. Perform the calculations and solve the numerical of electrochemistry and chemical kinetics.
5. Develop skill in problems solving, critical thinking and analytical reasoning.

Principles of Spectroscopy Paper : IX

1. 1.Explain the basic principles of rotational, vibrational, electronic and Raman spectroscopy.
2. Identify and explain factors that influence the strength and frequency of peaks in the Microwave, IR spectra.
3. Describe the selection rule for rotational, Vibrational and electronic spectroscopy.
4. Determine the vibrations for a molecule and identify whether they are active in infrared and/or Raman spectroscopy.
5. Explain the difference between Stokes and anti-Stokes lines in a Raman spectrum and justify the difference in intensity between Stokes and anti-Stokes lines.
6. Draw the Stokes and anti-Stokes lines in a Raman spectrum of a compound when given the energies of the different transitions.
7. Understand the electronic spectra of atomic and diatomic molecular systems. Justify the absorption lines in atomic electronic spectra and the broad bands inmolecular electronic spectra.
8. Able to interpret the molecular electronic spectra and deduce the electronic structure information in ground and excited states of diatomic molecules.
9. Importance of the Nuclear Quadrupole Resonance Spectroscopy in the characterizing organic and inorganic compounds. Know how the electric fields gradient in molecules influences NQR, and ESR spectra.

Laboratory Course – I

1. Learn synthesis methods for the preparation of various coordination complexes and will understand the basic principles involved in operational procedures while synthesizing the complexes to a deeper level.
2. To characterize a synthesized complex using various characterization techniques such as melting point determination, solubility behavior in various solvents, molar conductance, magnetic susceptibility measurements, IR and electronic spectra etc.
3. While following all these methods he/she will be able to understand operation procedures, care that should be taken while using these techniques and the practical utility of these techniques.
4. Understand the basic principles lying behind inorganic analysis such as precipitation, solubility product, buffer solution, applications of buffer solution in maintaining pH,common ion effect etc. and this much information will be helpful while analyzing any inorganic compound in future.

Laboratory Course II

1. Learn the pilot separation of the binary mixture.
2. Familiarize the systematic procedure of organic mixture analysis.
3. The preparation involving nitration, bromination, Sandmayer reaction, and Aldol Condensation.

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4. Learn the test involving identification of special elements.
5. Learn the confirmatory test for various functional groups.
6. Understand the technique involving drying and crystallization by various methods.

7. Expertise the various techniques of preparation and analysis of organic substances.
8. Learn the estimation of various organic compounds.
9. Understand micro scale technique.

Laboratory Course III

1. Apply their knowledge for setting various experiments based on the instrumentations studied Perform different qualitative and quantitative analysis Laboratory Course IV.
2. Understand the basic principles and theory of different instruments used during the conduction of the experiments Perform the different experiments on conductometer, pH meter, potentiometer, colorimeter, polarimeter, flame photometry.
3. Apply their knowledge for setting various experiments based on the instrumentations studied.
5. Perform different qualitative and quantitative analysis.

M. Sc. SECOND YEAR(ORGANIC CHEMISTRY)

SEMESTER-III

Spectroscopic Method- Paper–XVAdvanced

1. Learn the structure determination of organic molecules by spectroscopic methods.
2. Know the use electronic spectroscopy to determine absorption maximum in dienes, enones and aromatic compounds.
3. Know the applications of IR spectroscopy for functional group determination.
4. Learn the structure elucidation of organic compounds by PMR spectroscopy.
5. Gathering basic knowledge to know the position of carbon in carbon compounds.
6. Recognize the molecular mass of the organic molecule by fragmentation pattern.
7. Know the complete structure of compounds using UV, IR, PMR, CMR and Mass spectroscopic methods.

Natural Products Paper–XVI

1. Structure elucidation, degradation,applications, stereochemistry of tamins, Terpenoids, Seriods.
2. Synthetic methods for total synthesis of natural products.
3. Medicinal Application of different natural products.
4. Rotenones,pyretheroids ,prostoglandins and their applications.

Organic Synthesis Paper–XVII,

1. 1.To understand the Dakin reaction, Etard reaction, HVZ reaction, Umpolung synthesis and Stephen reaction.
2. To know about the Barton reaction, Jones oxidation, Oppenauer oxidation and Michel addition.

3. To familiarize the different types of reduction reaction.
5. To learn about the synthesis and applications of the organic reagents like 9-Borabicyclo(3.3.1)nonane (9-BBN) and n-butyl lithium .

6. To learn the synthesis and applications of the organic reagents like ceric ammonium nitrate (CAN), DCC, Grignard reagent, LDA, Gilman reagent, NBS and PCC.
7. To know about the complex metal hydrides, Hilmans reagent, lithium dimethyl cuprate and dicyclohexyl carbodimide,1,3-dithiane.
8. To know the detail study of woodward, provost hydroxylation, selenium dioxide, crown ethers and Peterson's synthesis, Wilkinson's catalyst and Baker yeast.

Medicinal Chemistry Paper–XVIII

1. Understand key component of drug discovery process and drug designing Understanding the role of medicinal chemist in development of medicinal agents
2. Have understanding about functional group modification and their utility in SAR and QSAR.
3. Analyze the recent research articles related with drug design of antimycobacterial agents and antibiotics.

Elective: Green Chemistry Paper–XVIII

1. To learn about the different enzymes participating in the chemical reactions inside the body and their functions.
2. To study about the different oxygen carriers present in the body with their structure and stereochemistry.
3. To study in detail about nitrogen fixation reactions and microorganisms involved in nitrogen fixation reactions.
4. To know about the biological redox systems and their classifications.

Semester-IV

Advanced Heterocyclic Chemistry Paper–XX, [OCH-521]

1. This course aims at giving a fundamental theoretical understanding of heterocyclic chemistry, including alternative general methods for ring synthesis and application of such methods for the preparation of specific groups of heterocyclic systems.
2. The student will get familiar with particular properties and reactions for the most important heterocycles as well as different systems of nomenclature.

Advanced Organic Chemistry- Paper–XXI

1. The basic Principles of Green Chemistry,
2. Applications and uses of Green catalysts and Reagents.
3. Use of Ionic Liquids and PTC in Green Synthesis.

Organic synthesis: Retro synthetic Approach- Paper–XXII

1. To persuade the subject specific knowledge as well as relevant understanding of the Retrosynthesis.
2. The academic and professional skills required for Chemistry-based professions.
3. Learning experiences gained from this Disconnection approach is important for industrial purpose.

Medicinal Chemistry- Practical Paper–XXIII

1. Understand key components of drug discovery of Anti-cancer and Anti-AIDS. agents,Hypoglycemic agents, Cardiac drugs, antiviral antimalarial agents.

Mixture Analysis Practical Paper–XXV

1. Learn basics practical knowledge of qualitative analysis.
2. Become skilled at organic compounds determination.

Synthesis of Organic Molecules Practical Paper–XXVI

1. Learn basics practical knowledge of multistage synthesis of organic molecules.
2. Learn fundamentals of organic synthesis in drug discovery.
3. Learn about the one-pot organic synthesis by microwave techniques.

Physico-Organic Estimations Practical Paper–XXVIII

1. Gain the knowledge of estimation of drugs by Titrimetric.
2. Learn about the Isolation of natural products.
3. Develops the techniques for the estimation of drugs by Instrumental Methods.

M. Sc. SECOND YEAR (PHYSICAL CHEMISTRY),

SEMESTER-III

Solid State Chemistry- Paper–XVI

1. Student gets knowledge about different types of defects in so lids. They know about the different types of solid state reactions and factors affecting reactions.
2. Students understand about classification on solids on basis electronic structure.
3. They are now able to classify solid on basis of band structure and magnetic properties.

Chemical Dnyamics Paper–XVII, [PCH-513]

1. Student are now able to calculate the mechanism of various complex reactions They know about various experimental techniques to study the kinetics of fast reactions.
2. They understood the motions of molecules in liquid and gas as well as about molecular reaction dynamics.
3. They know about kinetics of the complex reactions which includes chain and Polymerization reactions.

Statistical Thermodynamics Paper–XVIII

1. Students will get basic knowledge about the applications of statistical thermodynamic to various systems.
2. They will get the basic information of different types of Statistics used in statistical thermodynamics.
3. They understated the Statistical Mechanics of a System of Independent Particles.

SEMESTER IV

Radiation Chemistry Paper–XX,

1. They know about different types of nuclear reactions and reactors.
2. They understand about the effect of radiation on matter.
   Students understand about the about applications of radioactivity in various fields.
3. They are be able to solve numerical of different concepts of radioactivity.

Photochemistry Paper–XXI,

1. Students know about different types of Photochemical Reactions.
2. Students are able to write mechanism of different photochemical reactions.
3. Students understand about different Photo physical process.
4. They understand about the Photophyscial kinetics of Bimolecular Process.
5. They learnt about some basic aspects of organic and Inorganic photochemistry.

Molecular Reaction Dynamics and Biophysical Chemistry Paper–XXII

1. 1.Students learnt about Biological Cell its Constituents and about Bioenergetics.
2. They understand about the Statistical Mechanics in Biopolymers and about the different biopolymer Interactions.
3. They understand about the Thermodynamics of Biopolymer solutions.
4. They know about the different Diffraction Methods and photo correlation spectroscopy.

Electrochemistry- Paper–XXIII,

1. They acquire knowledge about the reversible and irreversible cell and their examples.
2. They now know about different processes which takes place over metal surface.
3. Student know about Debye Huckel theory and its application in electrochemistry and able to solve numerical on it.
4. Students get knowledge about electrochemical theory of corrosion and method of prevention of corrosion.

M.Sc. PHYSICS

FIRST YEAR

Mathematical Methods in Physics (Core-1)

1. After completion of this course students are capable of using the learned mathematical techniques to solve problems in physics such as the use and applications of matrices, the differential equations, the special functions, Fourier series and integral transform and complex functions. Students can apply these learned techniques not only to physics related problems but can extend the use and their applications to Engineering Science and Technology, Biotechnology, Biophysics etc.

PHY 102 – Classical Mechanics (Core-2)

1. After completion of the course the students shall be able to apply Newton's laws of motion to solve complicated problems involving multiple bodies and use the concepts of classical mechanics to the classical rigid bodies.The knowlede acquired through this course will enable the students to lay the foundation of application of the classical dynamics, space dynamics and also for modern physics.

PHY 103 – Atomic and Molecular Physics (Core-3)

1. The atomic spectra of one valance electron atoms. what is meant by LS and JJ coupling in case of two valance electron atoms and the origin of spinorbit interaction.
2. Use appropriate quantum numbers for labeling of energy levels/terms symbols. The change in behavior of atoms in external applied electric and magnetic field. Diatomic molecules, the origin of electronic, vibrational and rotational energy levels, calculate energy levels,
3. Analyze rotational, vibrational, electronic and Raman spectra of molecules To undertake simple calculations of bond lengths, rotational constant, dissociation energy, and relative level populations

PHYCT 104 – Electronic Devices and Applications (Core-4)

1. After completion of this course, students will be able to explain the working principles and application of various electronic devices used in various electronic gadgets of domestic uses. They will also understand the construction, working and operational characteristics of semiconductor devices and their applications in advanced electronics industries.The students will also understand the utility and functioning of the microprocessors, the heart of the advanced computing machines.

PHY 201 – Quantum Mechanics (Core-7)

1. Upon successful completion of these modules, students will be able to understand that quantum mechanics is basic of many branches of Physics and will be able to apply quantum theory to other applied areas like nuclear physics, atomic and molecular physics, solid state physics, laser physics etc.

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2. The students will be able to relate the ideas and concepts from physics to chemistry, materials science and engineering. Students will be able to use quantum theory to model natural and physical phenomena in materials science, chemistry and nanotechnology.

3. Students will be able to understand and explain the differences between classical and quantum mechanics. They will be able to understand the idea of wave function and to solve Schrodinger equation for simple potentials.

PHY 202 – Statistical Mechanics (Core-8)

1. The main outcome after learning the course is that students can apply and extend concepts learned in this course to theoretical physics. Students will be well acquainted with the particle nature on the basis of distribution laws and their uses in order to illustrate propertis of most exotic systems like white dwarf stars, superfluid materials, etc.

PHY 203 – Numerical Techniques in Physics (Core-9)

1. After completion of the course students shall be able to employ the studied numerical techniques to solve problems in physics related to the applications like data handeling and fitting, finding solutions and root of equations, solving the differential and integral equations, simultaneous equations and partial differential equations.
2. They shall also be well versed with writing their programmes using C-language of computer programming.
3. Students can apply these learned techniques not only to physics related problems but can extend the use and their applications to Engeering science and technology, Biotechnology, Biophysics etc.

PHY 204 – Condensed Matter Physics (Core-10)

1. After completing the course students will have knowledge of different types of solids and an understanding of how their microscopic structure affects their mechanical, thermal and electrical properties

SECOND YEAR

PHY 301 – Electrodynamics

1. Upon successful completion of this course students will be able to apply the knowledge of Maxwell's equations to a variety of problems including various types of charge distributions including time-dependent processes, tackle the problems related to the propagation and scattering of EM waves in a variety of media, understand how to design EM sources of different powers, and will also be ablle to have a good understanding of the relativistic electrodynamics.

PHY 302 – Nuclear and Particle Physics

1. After the completion of the subject the students are able to know its Scientific and technological applications in addition with social, economic and environmental implications.

M.Sc. ZOOLOGY

M. Sc. FIRST YEAR; SEMESTER –I

Paper I: Invertebrates: Structure and Function

1. Classify animals from different groups based on their features.
2. Explain the similarity and differences in structure and function of organs in different groups of animals.
3. Understanding about importance of integument and skeletal systems.
4. Compare the functional morphology different groups of invertebrates.

Paper II: Biosystematics, Taxonomy and Evolution

1. Classify animals from different groups based on their features.
2. Describe different taxa and elaborate on their anatomical and morphological features.
3. Identify and describe homologies between different groups of animals.
4. Identify and access taxonomic information in different online databases.
5. Describe evolutionary relationship between different taxa.
6. Explain about evolutionary distance between different taxa.
7. Infer phylogenetic information and prepare phylogenetic trees.

Paper III: Economic Zoology and Animal Behavior

1. Identify animal pathogenic diseases in humans and suggest remedial measures.
2. Evaluate and describe the economic impact of animals on human society.
3. Describe different culture methods relevant to aquaculture.
4. Identify and describe economically important fish and other animals.
5. Identify and explain different types of behavior patterns in animals.
6. Describe the importance of different behaviors in animal husbandry.

Paper IV (Elective): Quantitative Biology and Bio-Informatics

1. Describe different methods of data handling using computers.
2. Feed and tabulate raw data using computer.
3. Explain and perform data representation using digital methods.
4. Access and download relevant information from different online databases of biological information.
5. Perform basic operations of gene sequence retrieval and compare them using different software.
6. Perform basic operations of protein structure retrieval and comparison using different software.

Paper IV (Elective): Conservation Biology

1. Ability to describe biodiversity and its role in ecosystem health.
2. Ability to understand and analyze ecological factors affecting biodiversity.
3. Knowledge about different biodiversity hotspots of India and their unique characteristics.
4. An understanding of methods and tools used for wildlife conservation in India.
5. An understanding of and ability to interprete the Laws governing natural biodiversity in ndia.
6. Ability to disseminate knowledge about biodiversity in India and the significance of its conservation

Paper VI: Animal Ecology, Toxicology and Environmental Pollution

1. Describe the role of different gases in greenhouse effect.
2. Identify and suggest remedial measures to deal with different types of pollution.
3. Identify and describe adaptations of animals to different ecosystems.
4. Suggest and develop conservation and management stategies for a particular ecological problem.

Paper VII: Gamete Biology and Animal Development

1. Understand and describe the different developmental processes.
2. Describe different techniques and methods used in experimental embryology.
3. Elaborate on metamorphosis and regeneration in various and relate these processes to abnormalities in animals.
4. Identify and evaluate application of different ART techniques to different infertility conditions.

Paper VIII: Biochemistry and Immunology

1. Describe the structure and working of different components of vertebrate immune system.
2. Elaborate about the innate and adaptive immune responses in vertebrates.
3. Describe the different immunological disorders found in man.Explain the different techniques in immunology
4. Elaborate about structure and application of antibodies in clinical therapy and biological research.

Paper IX(Elective): Tools and Techniques for Biology

1. Identify and describe the different equipment and tools used in a biology laboratory.
2. Correctly operate different laboratory instruments.
3. Correctly operate different types of microscopes.
4. Prepare tissue for section cutting and correctly operate a microtome.
5. Choose and perform correct staining technique for any given tissue sections.
6. Describe cellular separation techniques.
7. Properly handle and maintain glassware.
8. Properly operate laboratory equipment.

Paper IX(Elective): Pathobiology & Medical Zoology

1. Explain about the different pathogens causing disease in man.
2. Describe the different parasites causing disease and disability in man and animals.
3. Ability to elaborate about the life cycle and biology of disease carrying vectors; suggest preventive and control measures for the said diseases.
4. An understanding of the relationship between changes in physiology of host and progress of pathogenesis in human beings and animals.

M. Sc. SECOND YEAR; SEMESTER –III

Paper XI: Vertebrates- Structure and Function

1. Able to explain the broad classification of vertebrates based on features.
2. Describe relation between organ systems in different vertebrate groups.
3. Explain the significance of integument and skeletal systems of vertebrates.
4. Compare the structural and functional morphology of vertebrates.

Paper XII: Molecular Cell Biology

1. Elaborate about contemporary developments in the field of molecular biology.
2. Explain the differences between prokaryotes and eukaryotes.
3. Describe the processes of cell communication and carcinogenesis.
4. Learn about latest in gene and genome structure, functions and organization.

Paper XIII-A: Applied Parasitology- I: Microbes and Arthropods of Medical Importance

1. Students are able to identify Microbes and Arthropods of medical importance.
2. Students can describe basics of microbes and arthropods of public health importance. Students will be able to understand and apply the principles of controlling diseases caused by microbes and arthropods.
3. Students will be able to elucidate the Vector-Host-Pathogen relationship.
4. Students will be able to understand the basic components of the immune system and its role to protect the host against pathogens.

Paper XIII-B: Fishery Science- I: Fish Morphology, Anatomy and Physiology- I

1. Explain the inter-relation between different groups of fish.
2. Be able to identify and broadly classify fish.
3. Appreciate the relation between environment and feeding and digestion in fish.
4. Describe the respiratory mechanisms in different groups of fish.
5. Explain the significance of biological rhythms in fish growth and reproduction.

Paper XIII-D: Animal Physiology- I: General Physiology- I

1. To describe the different mechanisms of homeostasis in animals.
2. To elaborate about and relate the structure and functions of neurons.

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3. To explain respiratory functions under conditions of high altitude and under water.
4. To explain the relation between physiology of body with physical exercise and Yoga.

Paper XV-A: Applied Parasitology- II: Protozoans of Medical Importance

1. Students are able to identify Protozoans of medical importance.
2. Describe basics of Protozoans of public health importance.
3. Able to understand and apply the principles of controlling Protozoan diseases.
4. Explain about Host-Parasite relationship.

Paper XIV-B: Fishery Science- II: Fish Morphology, Anatomy and Physiology- II

1. Ability to describe the structure and functions of the nervous & reproductive systems.
2. Elaborate the migration patterns, growth & age determination methods of fish species.
3. Describe the specialized organs like swim bladder, electric & acoustic organs in fish.
4. Explain the working of endocrine and venom glands in fish.

Paper XIV-D: Animal Physiology- II: General Physiology- II

1. Ability to distinguish between prokaryotes and eukaryotes.
2. Trace relation between different aspects of metabolism.
3. Knowledge of different types of enzymes, their properties, functions and interactions.
4. An appreciation of energy pathways, intermediaries and dynamics in cells.

Paper XVI: Genetics and Genetic Engineering

1. Explain the principles of Mendelian inheritance.
2. Describe gene and chromosomal inheritance and their disorders.
3. Elaborate about different tools and techniques used in recombinant DNA technology.
4. Discern the different tools used in cloning and gene transfer technology.

Paper XVII: Mammalian Endocrinology

1. Appreciate the nature, functions and classification of hormones.
2. Describe general structure and functions of endocrine glands in mammals.
3. Trace the relation between pituitary and other endocrine glands.
4. Elaborate about endocrine role of adrenal, pancreatic and pineal tissue in humans.
5. Explain about functions of gastro-intestinal and reproductive hormones in humans.
6. Elaborate about the different endocrine disorders in humans.

Paper XVIII-A: Applied Parasitology- I- Trematodes And Cestodes

1. Students will understand morphology, life cycle and pathogenesis of Trematode and Cestode infections.
2. Students will be able to identify clinical signs and suggest preventive measure in parasitic infections.
3. Students will understand structure and working of immunity system and appreciate its role in resistance to parasitic infections.
4. Students will have the knowledge of endemic and national parasitic problems.

Paper XVIII-B: Fisheries and Fish Culture- I

1. Knowledge of capture and culture fishery practices of India and methods adopted.
2. Suggest design and management procedures for a fish farm.
3. Carry out artificial fish breeding and weed control in a fish farm.
4. Identify various fish diseases and suggest treatments.
5. Elaborate about different fish preservation methods.
6. Evaluate suitability of different fish for making by-products.

Paper XVIII-D: Mammalian Physiology- I

1. An understanding of digestive system structure, functions & its disorders.
2. Knowledge of respiratory system function and its pathological conditions.
3. Ability to describe circulatory system, its components, functions & diseases.
4. Appreciation of excretory system structure, functions & related disorders & their tests.

Paper XIX-A: Applied Parasitology- II- Animal Nematodes and Plant Nematodes

1. A good understanding of parasitology in general and Nematodes in particular.
2. Knowledge of plant nematology, especially of disease caused by parasitic nematods.
3. Understanding of structural and functional organization of nematodes.
4. Knowledge of pathogenesis of plant and animal nematode parasites.
5. An understanding of methods of nematode disease prevention.
6. Knowledge of life history and ecology of larval and adult nematodes.

Paper XIX-B: Fisheries and Fish Culture- II

1. Describe the fishery resources of India.
2. Knowledge about culturable organisms and different culture methods.
3. Identify and assess the anthropogenic threats to fishery industry.
4. Knowledge of marine capture and culture fishery of India and legislative framework to regulate it.

Paper XIX-D: Mammalian Physiology- II

1. To describe and elaborate about nervous system components and their functions.
2. To outline reproductive system structure, functions, related conditions and remedies.
3. To delineate muscle structure, functioning mechanism, and disorders.
4. To represent about the sensory system, their working, and disorders.

Co-ordinator,NAAC
Shivaji Mahavidyalaya,Udgir

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PRINCIPAL
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