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Programme Outcomes (PO's), Programme Specific Outcomes (PSO's) and Course Outcomes (CO's)

Academic Year 2020-21

http://nmu.ac.in/en-us/usefullinks/circulars.aspx

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Department of Marathi

Programme Outcomes: **BSc Marathi**

Department of Marathi	After successful completion of three year degree program in Marathi a student should be able to;
Programme Outcomes	१. नाटकाची अभिरुची विकसित करून घेतो तसेच नाटकाच्या चिकित्सक अभ्यासाची क्षमता विकसित होते.
	२. मराठी एकांकिकांच्याद्वारे विद्यार्थीमध्ये लेखन कौशल्यविषयक दृष्टीकोन निर्माण करता येतो.
	३. संवादाची क्षमता विकसित करता येते आणि भाषिक कौशल्य विकसित करणे.
	४. दलित एकांकिकांमधून सामाजिक निर्माण करून समाजकार्यासाठी दिशा दाखविता येते.
	५. एकांकिकांची आस्वाद क्षमता विकसित होते.
	६. ललित गद्यातून थोर पुरुष व स्त्रीयांच्या जीवनचरित्रातून नीती-आचरण चिंतनशीलता व भावात्मकता सूत्रांचा परिचय करून देता येतो तसेच स्त्री व पुरुष यांच्या जीवनाच्या विविध पैलूंचे दर्शन घडविता येते.
	७. मध्ययुगीन मराठी वाङ्मयाच्या निर्मितीमागील प्रेरणा, इतिहास, स्वरूप व वैशिष्ट्ये तसेच विविध साहित्यकृतींचा स्थूल परिचय करून घेता येतो.
	८. वारकरी संप्रदायातील संतकवींच्या काव्यनिर्मितीचे स्वरूप, बखर वाङ्मयाचे स्वरूप व वैशिष्ट्यांचा परिचय करून देऊन बखर व अभंग यांची आस्वाद क्षमता विकसित करता येते.
	९. नाट्य अभिरुची विकसित करता येते तसेच नाट्य संकल्पना नाट्य आस्वादाची डोळस क्षमता विकसित करता येते.
	१० भाषेचे स्वरूप, कार्य, भाषा उत्पतीचे सिद्धांत, भाषाकुल संकल्पना, प्रांतिक भेद, मराठीच्या प्रमुख बोलीचा परिचय, भाषाविषयक असलेले गैरसमज, मराठीवरील अन्य भाषांचा पडलेला प्रभाव तसेच मराठी भाषा उत्पतीविषयीची मते जाणून घेऊन मराठीची पूर्वपीठीका लक्षात घेता येते.

	११ मराठी व्याकरणाची आस्वाद क्षमता विकसित करून आकलन क्षमता विकसित करणे.
	१२ लोकरंगभूमीची संकल्पना, स्वरूप, वैशिष्टये, लोकसाहित्य व लोकरंगभूमी यांचा परस्परसंबंध तसेच वही, भारुड, दशावतार,तमाशा, लोकनाट्य, पथनाट्य, सत्यशोधक जलसे,रिंगणनाट्य व कीर्तन यांच्या स्वरूप, वैशिष्टयांचा परिचय करून देऊन लोकसाहित्यविषयक अभिरुची विकसित करता येते.
	१३ दृकश्राव्य माध्यमांचा परिचय करून घेऊन त्यासाठी लेखन व संवाद कौशल्य यांचा परिचय करून देऊन दृकश्राव्य माध्यमांचे कार्य, उपयुक्तता, कार्यक्रमांसाठी लेखन तंत्र व दूरचित्रवाणीसाठी निवेदन कौशल्य विकसित करता येते.
	१४ आधुनिक समाज माध्यमांचा परिचय करून घेता येतो त्याचबरोबर त्यांचे कार्य, उपयुक्तता आणि ईमेल, ब्लॉग फेसबुक, ट्विटर, व्हाटसअप, युट्युब यासाठी लेखन तंत्र व निवेदन कौशल्य विकसित करता येते.
	१५ निबंध लेखनाचे स्वरूप, घटक, प्रकार यांचा परिचय करून घेता येतो त्याचबरोबर निबंध लेखनाचा सराव करून घेऊन निबंध लेखनाचे कौशल्य विकसित करता येते.
	१६ कथेची अभिरुची विकसित करून घेतो तसेच कथेच्या चिकित्सक अभ्यासाची क्षमता विकसित होते.
	१७ यशस्वी उद्योजकांच्या चरित्राद्वारे विद्यार्थांमध्ये व्यावसायिक दृष्टीकोन निर्माण करता येतो.
	१८ संवादाची क्षमता विकसित करता येते आणि भाषिक कौशल्य विकसित करणे.
	१९ उत्तम दर्जाची व्यावसायिकवृत्ती निर्माण करून यशस्वी उद्योगाची दिशा दाखविता येते.
	२० कादंबरीची आस्वाद क्षमता विकसित होते.
	२१ पौवार्त्य व पश्चिमात्य साहित्यशास्त्रातील विविध संकल्पना, साहित्याचे स्वरूप, साहित्याचे प्रयोजन आणि साहित्याची निर्मिती प्रक्रिया यांचा स्थूल परिचय करून घेता येतो.
	२२ नाट्य अभिरुची विकसित करता येते तसेच नाट्य संकल्पना नाट्य आस्वादाची डोळस क्षमता विकसित करता येते.
	२३ मराठी व्याकरणाची आस्वाद क्षमता विकसित करून आकलन क्षमता विकसित करणे.

Programme Specific Outcomes	१. एकांकिका या नाट्य प्रकारचे स्वरूप, वाटचाल, लेखन स्वरूप व वैशिष्ट्ये जाणून घेणे.
	२. वाङ्मयीन अभिरुची विकसित करणे.
	३. ललित गद्य वाङ्मय प्रकारची संकल्पना ,स्वरूप, वैशिष्ट्ये वाटचाल यांची माहिती करून घेणे व ललित गद्य लेखनातील विविध प्रकारांची , बदलत्या रूपांची ओळख करून घेणे.
	४. संवादासाठीची विविध भाषिक कौशल्य विकसित करणे.
	५. मध्ययुगीन मराठी वाङ्मयाचा इतिहास, निर्मितीमागील प्रेरणा, स्वरूप, वैशिष्ट्ये यांचा परिचय करून घेणे.
	६. मराठीच्या कालिक भेदांचे स्वरूप, प्रांतिक भेद, बोली भाषांची स्वरूप, वैशिष्ट्ये , भाषेविषयक असलेले गैरसमज यांची ओळख करून घेणे.
	७. लोकरंगभूमीची संकल्पना, स्वरूप, वैशिष्ट्ये , लोकसाहित्य व लोकरंगभूमी यांचा असलेला परस्पर संबंध समजून घेणे.
	८. आधुनिक समाज माध्यमांचा परिचय, कार्य, उपयुक्तता, त्यासाठीचे लेखन कौशल्य आणि निवेदन कौशल्य यांचा परिचय करून घेणे.
	९. निबंध लेखनाचे स्वरूप, घटक, प्रकार समजून घेणे व निबंध लेखनाचे कौशल्य आत्मसात करणे.
	१० उत्तम दर्जाची व्यावसायिकवृत्ती निर्माण करून यशस्वी उद्योगाची दिशा दाखविणे
	११ संवादासाठीची विविध भाषिक कौशल्य विकसित करणे.
	१२ पौवार्त्य व पश्चिमात्य साहित्यशास्त्रातील विविध संकल्पना, साहित्याचे स्वरूप, साहित्याचे प्रयोजन आणि साहित्याची निर्मिती प्रक्रिया समजावून देणे.
	१३ नाटकातील सुखात्मिका-शोकात्मिका यांचे स्वरूप व वैशिष्ट्ये

एफ.वाय.बीएस्सी.मराठी जनरल-कथा आणि संवाद कौशल्ये यांचा अभ्यास	१) 'माणदेशी माणसं' कथासंग्रहातील कथांची कथानके, व्यक्तिचित्रण व प्रसंगवर्णन या अंगांनी जाणवणारी वैशिष्ट्य विद्यार्थ्यांना समजण्यास मदत होते. २) 'माणदेशी माणसं' कथासंग्रहातील कथांची संघर्ष,निवेदन व भाषा या अंगांनी जाणवणारी वैशिष्ट्य लक्षात येतात. ३) संवादाच्या औपचारिक व अनौपचारिक प्रकारांचा परिचय विद्यार्थ्यांना होतो. ४) भाषण,सादरीकरण , वादविवाद, सूत्रसंचालन, गटचर्चा या संवाद कौशल्यांचे स्वरूप विद्यार्थ्यांच्या लक्षात येण्यास मदत होते तसेच त्यांचे उपयोजन करण्यास विद्यार्थी शिकतात.

एस.वाय.बीएस्सी. मराठी जनरल –ललित वाङ्मय कथा	१) विज्ञान कथा व विनोदी कथा वाङ्मयाची वाटचाल विद्यार्थ्यांना समजण्यास मदत होते. २) विज्ञान व विनोदी कथेच्या विविध घटकांची ओळख विद्यार्थ्यांना होते. ३) विज्ञान व विनोदी कथेचे वेगळेपण कोणते ते विद्यार्थ्यांना समजण्यास मदत होते. ४) मराठी विज्ञान व विनोदी कथेच्या योगदानाची ओळख विद्यार्थ्यांना होते. ५) विज्ञान क्षेत्रातील विविध विषयांवर मराठीतून लेखन करण्यास विद्यार्थी प्रोत्साहित होतात. ६) विद्यान कोशासाठी नोंद लेखन करण्याचे तंत्र विद्यार्थी आत्मसात करतात. ७) विज्ञान क्षेत्रातील विविध विषयांवरील लोकोपयोगी लेखन करण्याचे कौशल्य विद्यार्थी आत्मसात करतात. ८) विद्यार्थ्यांचा वैज्ञानिक दृष्टीकोन विकसित करण्यास मदत होते.

Department of English

Under Graduate (UG)

Department of English	**After successful completion of three year degree program in English student should be able to;**
Programme Outcomes	• Understood how the developments in the field of Humanities have improves the quality of life and how they have satisfied the aspirations, intensions likes and dislikes and how they could modify them. • Students should be familiar with representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts. • Students should be able to apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres. • Students should be able to identify, analyze, interpret and describe the critical ideas, values, and themes that appear in literary and cultural texts and understand the way these ideas, values, and themes inform and impact culture and society, both now and in the past. • Students should be able to write analytically in a variety of formats, including essays, research papers, reflective writing, and critical reviews of secondary sources. • Students should be able to ethically gather, understand, evaluate and synthesize information from a variety of written and electronic sources. • Students should be proficient in oral communication and writing.
Programs Specific Outcome	• Realized the importance of literature in creating aesthetic, mental, moral, intellectual development of an individual and maintaining a healthy society. • Understand major and minor forms of literature. • Have developed interest in literature and language. • Understand the structure and function of grammatical units. • Know the use of language at semantic and syntactic levels. • The students could use English effectively in formal and informal situations. • Attempt creative writings. • Know phonological and morphological aspects of English. • Be employable and ready to do jobs in industry, government, schools and offices. • Have enriched confidence to appear for competitive examinations

Course Outcomes

Semester-I (F.Y.BSC ENGLISH)

After completion of these courses students should be able to;	
Course	**Outcomes**
Compulsory English	**1)** Students will acquaint with various genres literature prose, short stories and poetry. **2)** Students will be familiar with various types of written skills. **3)** Students will acquaint with various language skills. **4)** Students will get fluent in four basic skills of English Language i.e. Listening, Speaking, Reading & Writing (LSRW). **5)** Student will practice various modes written skills.
DSC-Discipline Specific Course 1- ENG-A Reading Literature-Short Stories	**1)** Student will familiar with the basic forms of literature. **2)** Student will acquaint with the broader genres of literature in general. **3)** Student will develop understanding of literature, short stories. **4)** Student will develop reading skill and ability of understanding through literature.

Semester-II (F.Y.B.A ENGLISH)

After completion of these courses students should be able to;	
Course	**Outcomes**
Compulsory English	**1)** Students will acquaint with various genres literature prose, short stories and poetry. **2)** Students will be familiar with various types of written skills. **3)** Students will acquaint with various language skills. **4)** Students will get fluent in four basic skills of English Language i.e. Listening, Speaking, Reading & Writing (LSRW). **5)** Student will practice various modes written skills.
DSC-Discipline Specific Course 1- ENG-B Reading Literature-Poems	**1)** Student will familiar with the basic forms of literature. **2)** Student will acquaint with the broader genres of literature in general. **3)** Student will develop understanding of literature,poems. **4)** Student will develop reading skill and ability of understanding through literature.

Semester-III (S.Y.BSC. ENGLISH)

After completion of these courses students should be able to;	
Course	**Outcomes**
Compulsory English	1) The Paper of Compulsory English is specifically framed from the viewpoint of value education which is the basis of quality life. 2) Selection of contents in all the courses will help the students to comprehend the worldly wisdom and commercial perception which will ultimately lead them to be successful and enjoy quality life.
DSE-1-A (16^{th} Century English Literature)	1) To acquaint the students with the major literary trends and tendencies and prominent writers of the 16th and 17th Century English Literature. 2) To make the students aware about the literary history, salient features and sociocultural background of the period. 3) To help the students to grasp the content and critically appreciate the prescribed texts. 4) To inculcate amongst students a liking for the Elizabethan and Post Shakespearean literature.
DSE-2-A- (18^{th} Century English Literature)	**1)** Students will acquaint with basic ideas about the 18^{th} Century English Literature with special reference to poetry. **2)** Students will be familiar about the literary history, salient features, socio-political and cultural background of the Romantic age. **3)** Students will grasp the content and critically appreciate the prescribed poems and novel. **4)** Students will acquaint with the various literary movements of the 18^{th} and English Literature. **5)** Students will take keen interest in 18^{th} Century English Literature.
DSC-1-C Study of Novel	**1)** Student will be acquainted with novel as genres of literature. **2)** Students will take interest in reading novel. **3)** Students will take interest in understanding novel. **4)** Student will develop their competence to study, understand, analyses and interpret novel. **5)** Student will acquaint with the key terms useful in the study of novel. **6)** Student will familiar with different types of novel.

SEC-1 Eng. For Competitive Examination	**1)** The students will be able to prepare for the competitive exams of various kinds especially meant for testing ability in English language. **2)** The students will be acquainted with the common question types asked in competitive examinations concerning English- grammar, vocabulary, comprehension, and other significant topics. **3)** This paper will encourage students to appear and prepare for the competitive exams. **4)** This will help the students to overcome the fear about English as a compulsory subject in various competitive exams.

Semester-IV (S.Y.BSC. ENGLISH)

After completion of these courses students should be able to;	
Course	**Outcomes**
Compulsory English	1) The Paper of Compulsory English is specifically framed from the viewpoint of value education which is the basis of quality life. 2) Selection of contents in all the courses will help the students to comprehend the worldly wisdom and commercial perception which will ultimately lead them to be successful and enjoy quality life.
DSE-1-B-(17th Century English Literature)	1) To acquaint the students with the major literary trends and tendencies and prominent writers of the 16th and 17th Century English Literature. 2) To make the students aware about the literary history, salient features and sociocultural background of the period. 3) To help the students to grasp the content and critically appreciate the prescribed texts. 4) To inculcate amongst students a liking for the Elizabethan and Post Shakespearean literature.
DSE-2-B- (19th Century English Literature)	**1)** Students will acquaint with basic ideas about the 19th Century English Literature with special reference to poetry. **2)** Students will be familiar about the literary history, salient features, socio-political and cultural background of the Victorian age. **3)** Students will grasp the content and critically appreciate the prescribed poems and novel. **4)** Students will acquaint with the various literary movements of the 19th century English Literature. **5)** Students will take keen interest in 19th Century English Literature.

DSC-1- D Study of Drama	**1)** Student will be acquainted with drama as genres of literature. **2)** Students will take interest in reading drama. **3)** Students will take interest in understanding drama. **4)** Student will develop their competence to study, understand, analyses and interpret drama. **5)** Student will acquaint with the key terms useful in the study of drama. **6)** Student will familiar with different types of drama.
SEC-2 -Eng. For Competitive Examination	**1)** The students will be able to prepare for the competitive exams of various kinds especially meant for testing ability in English language. **2)** The students will be acquainted with the common question types asked in competitive examinations concerning English- grammar, vocabulary, comprehension, and other significant topics. **3)** This paper will encourage students to appear and prepare for the competitive exams. **4)** This will help the students to overcome the fear about English as a compulsory subject in various competitive exams.

Department of Geography

Under Graduate (UG)

Department of Geography	**After successful completion of three year degree program in Geography student should be able to;**
Programs Specific Outcome	• Geography is interdisciplinary subject having the constant status in all disciplines and Faculties. This subject is learn not only in Science, Commerce and Arts faculties but also in Engineering, IT, Survey of India, Tourist Industries, Military etc. In recent and advanced days traditional courses of geography could not provide the job opportunities to geography Students. • Urban Planner or Community Development: – Geography is a natural tie-in with urban or city planning. City planner's work on zoning, land use, new developments, from a gas station renovation to the development of whole new sections of urban area. You'll work with individual property owners, developers and other officials. If you are interested in this area, be sure to take Urban Geography and Urban Planning classes. An internship with a city planning agency is essential experience for this type of work. • Cartographer: – For those with cartography courses backgrounds may enjoy work as a cartographer. The news media, book publishers, atlas publishers, government agencies and others are looking for cartographers to help produce maps. This would likely require relocation. • GIS Specialist: – City Governments, Country Agencies and other Government and Private Agencies or Groups are often in need of experienced GIS professionals. Coursework and internship in GIS are especially important. Computer programming or engineering skills are very helpful in this arena- the more about computers and languages you know, the better off you are. • Climatologist: – Agencies like National Weather Services, News Media, the Weather Forecasting Channels, and other Government Entities occasionally need Climatologist. Admittedly, these Jobs usually go to those with Meteorology Degrees, a Geographer with experience and vast coursework in Meteorology and Climatology would definitely be anasset. • Transportation Management: – Like Urban and City Planning, there are opportunities in local Government but regional transit authorities or shipping, logistics, and

	transportation companies look kindly to someone with transportation Geography in their background and good computer and analytical skills. • Environmental Management: – A plethora of Environmental Assessment, cleanup, and management companies exist throughout the world today. A Geographer brings excellent skills for project management and the development of reports like Environmental impact reports. It's often a wide-open field with tremendous growth opportunities.

Semester-I

Course	Outcomes
Gg. 101:Physical Geography Part-I (Lithosphere)	**1)** To understand components, interactions on the Earth surface and in the interior of the Earth. **2)** To aware about the changes and degradation of land cover.

Semester-II

Gg. 201:Physical Geography Part-Ii (Atmosphere & Hydrosphere)	**1)** To understand components, interactions in the atmosphere & hydrosphere. **2)** To aware about the climate changes and degradation natural resources.

Semester-III

DSC-C (Gg.231): General Cartography	**1)** To acquaint the knowledge about understanding of Cartographical concepts
Gg. 232 (DSE 1 A): Geography Of Tourism	**1)** To develop and communicate basic conceptual frame work of Geo Tourism. **2)** To realize its potentials and against achieved in the Indian context. **3)** To understand the various Geo tourism. **4)** To know the role and responsibilities, economic growth of Tourism industry in India. **5)** To evaluate the role of various organization of tourism. **6)** To know the importance of the sustainable tourism **7)** To develop Socio cultural aspects for the Tourism geography.
Gg. 234 (SEC 1): Regional Planning And Development	**1)** Student will become well aware about the Regional Planning and Development. **2)** Students will get the knowledge of planning, its limitation **3)** Students will be able to participate in planning and regional development **4)** Students will get knowledge about various approaches and models of regional planning and development. **5)** Students will be aware of the Special area development plans and Agro Ecological Zones of Maharashtra

Gg. 233 (DSE 2 A): Practical Geography (Scale and Map Projections)	**1)** To give basic information about various tools and techniques used in making maps. **2)** To understand the concept of scale at the initial stage **3)** To know how to draw the maps on various scale **4)** To acquaint the students with basic of Scale, Map Projections and cartographic Techniques **5)** To enable the students to use Scale Map Projections and cartographic techniques

Semester-IV

DSC-D (Gg. 241): Human Geography	**1)** To acquaint the knowledge about understanding of Human Races in the World.
Gg. 242 (DSE 1 B): Geography Of India	**1)** To make the students able to understand Geographical Personality of India. **2)** To study minerals and power resources in the specific regions of India. **3)** To study the nature of industries and their development in India. **4)** To aware the students about agricultural and demographic problems and make them able to find.
Gg. 244 (SEC 2): Remote Sensing And Gps Based Project Report	**1)** To understand the principles of Remote Sensing. **2)** To acquaint the students with fundamental concepts of Aerial Photography. **3)** To introduce students with advance techniques for data collection. **4)** To learn principles and applications of GPS. **5)** To learn basics of GPS based survey.
Gg. 243 (DSE 2 B): Practical Geography (Surveying)	**1)** To acquire knowledge of survey language and sense of technique of surveying. **2)** To know the scale and distance of surveying. **3)** To know how to draw layout by surveying of region. **4)** To acquaint the students with basic knowledge and technique of ground survey. **5)** To acquire the knowledge of survey instruments. **6)** To provide basic information about mechanism of survey instruments. **7)** To acquaint the knowledge how to use survey instruments. **8)** To know the importance of surveying and survey instruments.

Semester-V

Gg. 351 (DSC 1E) Environmental Geography	**1)** To create the environmental awareness amongst the students. **2)** 2. To acquaint the students with fundamental concepts of Environmental Geography. **3)** 3. To aware the students about the processes and patterns in the natural environment. **4)** 4. To acquaint the students with potentials of Environmental Geography. **5)** 5. To aware the students about use of resources with prudence. **6)** 6. To acquaint the students with different environmental policies.
Gg. 352 (DSE 3A) Economic Geography	**1)** To acquaint the students with the knowledge of economic realm in the world. **2)** To highlight the different economic activities. **3)** To study mineral and power resources in the specific regions of the world.
Gg. 353 (DSE 4A) Practical in Human Geography and Geo-Statistics.	**1)** To introduce the practical approach of Human Geography. **2)** To introduce the importance of statistical techniques in Human Geography. **3)** To introduce some basic research methods to the students.
Gg. 354(SEC 3) Field Techniques and Introduction to Project Report.	**1)** To introduce the analytical skill of field-work. **2)** To develop the skill of selection of appropriate technique for field study. **3)** To enable the student to frame different types of questionnaires to conduct a field study. **4)** 4) To develop the analytical interpretation and report writing based upon the data collected during a field study.
Gg. 355 (GE 1A) Disaster Risk Reduction.	**1)** To introduce the concept of disaster risk. **2)** To prepare DRM Plans and its implementation. **3)** To aware the students about the Disaster Risk Reduction/Mitigation strategies.

Semester-VI

Gg. 361 (DSC 1F) Population Geography.	**1)** Understand the components of population change. **2)** Develop skills to use population information in the planning process. **3)** Understand the impact of planning activities on population size, composition, and distribution **4)** Population is an important resource. The development of any nation is depends on human resource. It is a prime deity to acquaint with the human resource of the nation. **5)** To understand the recent problems of population in the world as well as nation.

Gg.362 (DSE 3B) Political Geography	**1)** To enable students to acquire knowledge of Political Geography. **2)** To understand basic concepts of Political Geography. **3)** To study various theories of Political Geography. **4)** 4) To understand the frontiers and Boundaries.
Gg. 363 (DSE 4B) Practical in Physical Geography	**1)** To introduce the students with SOI toposheets and to acquire the knowledge of toposheet Reading / interpretation. **2)** To acquaint the students with IMD weather maps and to gain the knowledge of weather map reading/ interpretation.
Gg. 364 (SEC 4) Geographical Information System.	**1)** To introduce the fundamentals and components of Geographic Information System · **2)** To provide details of spatial data structures and input, management and output processes. **3)** To aware about the application of GIS in various fields.
Gg. 365 (GE 1B): Sustainability And Development	**1)** It brings to attention the Students about the issues which surround Sustainable Development, including its Principles, Processes and Concepts, its Deciding factors, and Potentials it holds. **2)** Students will get the information and Importance of the MDGS. **3)** Students will be aware about National Environmental Policy.

Department of Physics

Under Graduate (UG)

After successful completion of three year degree program in (**B.Sc. PHYSICS**) a student should be able to;	
Programme Outcomes	1) Demonstrate and think in depth to understand the minor and major concepts in scientific and technological aspects in all disciplines of physics. 2) Enrich the knowledge through problem solving and also think methodically to draw a logical conclusion. 3) Develop analytical abilities towards real world problems and create an awareness of the impact of Physics on the society. 4) Develop awareness to use modern techniques, decent equipment's, and also the scientific knowledge to design, record and analyze the results of Physics experiments.
Programs Specific Outcome	1) To have the knowledge of Physics through theory and practical's as well as knowledge of basic concepts of Physics in depth. 2) To solve the problems in real life situations by applying various laws of Physics. 3) To understand good laboratory practices and safety which can be useful in higher studies in Physics as well as other than Physics also. 4) To develop the research oriented skills to handle the sophisticated instruments /equipment's.

Course Outcomes

Semester-I (FY BSc. PHYSICS)

After completion of these courses students should be able to;

Course	Outcomes
PHY-101: Basic Mechanics	1) Apply the linear and angular momentum, conservation laws of energy to solve problems 2) Apply the concept of use of knowledge of mechanics to real life problems. 3) Understanding of the course will create scientific temperament 4) The students would learn about the behaviour of physical bodies it provides the basic concepts related to the motion of all the objects around us in our daily life. 5) The velocity and acceleration parameter give the knowledge about how the vehicles Move.
PHY-102: Dynamics and Elasticity	1) Study the behaviour of rigid body dynamics 2) To make the students to understand the dynamics involved in a rigid body. 3) Learn how Young's modulus and rigidity modulus are defines and how they are evaluated for different shapes of practical relevance

Semester-II (FY BSc. PHYSICS)

After completion of these courses students should be able to;	
Course	**Outcomes**
PHY-201: Electricity and Electrostatics	**1)** Gain knowledge of Gauss laws and solve the electric field for various geometric objects **2)** To understand the basic concepts of Electric field and Electric Potential.
PHY-202: Dielectrics, Magnetism And Electromagnetism	**1)** Enable to understand the concept of magnetic field. **2)** Understand the faradays laws of electromagnetic induction **3)** Enable to familiarize with the laws of electromagnetic induction **4)** Thorough knowledge in the basic concept of electromagnetic induction **5)** Able to derive the Maxwell‟s equation in free space and material media

Semester-III (SY BSc. PHYSICS)

After completion of these courses students should be able to;	
Course	**Outcomes**
PHY-301: Thermodynamics and Kinetic theory of gases	**1)** Understand the concept of thermodynamics and there laws. **2)** Understand the Heat Engine and there uses **3)** Describe the thermodynamic function and there relations **4)** To study Maxwell Relations and Application.
PHY-302 (A): Electronics –I	**1)** Understand he basics of diode and working of rectifier circuits and characteristics **2)** Analyse the characteristics of transistor and transistor biasing circuits **3)** Understand the basic knowledge of semiconductor physics **4)** Learn how to construct a transistor amplifier and how its gain varies with frequency **5)** Understand the fundamentals of codes and number system **6)** Understand the binary arithmetic , logics and boolean functions
PHY-302 (B): Instrumentation	**1)** General Block diagram & Measurements of instrumentation **2)** To Study transducers strain gauge, thermistor, magneto resistive sensor **3)** Apply the concept of use of knowledge of Instrumentation to real life problems
PHY 304: Skill Enhancement Course	**1)** Know the need of renewable energy resources, historical and latest developments **2)** Describe the use of solar energy and the various components used in the energy production with respect to applications like - heating, cooling, desalination, power generation, drying, cooking etc. **3)** Appreciate the need of Wind Energy and the various components used in energy generation and know the classifications. **4)** Understand the concept of Biomass energy resources

Semester-IV (SY BSc. PHYSICS)

After completion of these courses students should be able to;	
Course	**Outcomes**
PHY 401: Waves, Oscillations and Acoustics	**1)** Apply the concept of use of knowledge of Waves and Sound to real life problems **2)** Familiarise with general terms in acoustics like intensity, loudness, reverberation etc, and study in detail about production, detection, properties and uses of ultrasonic waves **3)** Analyse waves and oscillations
PHY 402: Optics and LASERS	**1)** Understand the natural behaviour of aberration in lens **2)** Study the theory and experiment of interference using air wedge, newtons rings etc. **3)** Study the theory of diffraction by fresnels and fraunhoffer methods **4)** Study the theories for production of polarization of light **5)** Explain different Laser used and make a comparison between them. **6)** Apply the gained basic knowledge of laser and working of different type of lasers
PHY 404: Electrical Circuits and Network Skills	**1)** After the completion of the course the student will acquire necessary skills/ hands on experience /working knowledge on multimeters, voltmeters,ammeters, electric circuit elements, dc power sources, ac/dc generators, inductors, capacitors, transformers, single phase and three phase motors, interfacing dc/ac motors to control and measure, relays and basics of electrical wiring. **2)** Study circuits in a systematic manner suitable for analysis and design. **3)** Analyze the electric circuit using network theorems.

Department of Chemistry

Under Graduate (UG)

After successful completion of three year degree program in(**B.Sc. CHEMISTRY**) a student should be able to;		
Sr. No.	**Programme Outcomes (POs)**	**Program Specific Outcomes (PSOs)**
1	To promote understanding of basic facts and concepts in Chemistry while retaining the excitement of Chemistry.	To develop ability and to acquire the knowledge of terms, facts, concepts, processes techniques and principles of subjects.
2	To make students capable of studying Chemistry in academic and Industrial courses.	To develop ability to apply the knowledge of contents of principles of chemistry.
3	To expose the students to various emerging new areas of Chemistry and apprise them with their prevalent in their future studies and their applications in various spheres of chemical sciences.	To inquire of new knowledge of chemistry and developments therein.
4	To develop problem solving skills in students.	To expose and to develop interest in the fields of chemistry.
5	To expose the students to different processes used in Industries and their applications.	To develop the power of appreciations, the achievements in Chemistry and role in nature and society.
6	To develop proper aptitude towards the subjects.	To develop skills required in chemistry such as the proper handling of apparatus and chemicals.

Course Outcomes

Semester-I (FY BSc. CHEMISTRY)

After completion of these courses students should be able to;	
Course	**Outcomes**
CHY-101: Physical and Inorganic Chemistry	**1)** To expose & develop interest in the field of chemistry. **2)** To develop ability & to acquire the knowledge of terms, facts concept processes techniques & principles of subject. **3)** To understand the fundamental principle and chemical analysis

CHY-102: Organic and Inorganic Chemistry	**1)** To develop skills required in chemistry such as the proper handling of apparatus & chemical analysis **2)** To develop ability to apply the knowledge of contents of principles of chemistry

Semester-II (FY BSc. CHEMISTRY)

After completion of these courses students should be able to;	
Course	**Outcomes**
CHY-201: Physical and Inorganic Chemistry	**1)** To develop problem solving skills in students. **2)** To develop proper aptitude towards the subject. **3)** To develop ability to apply the knowledge of contents of principles of chemistry.
CHY-202: Organic and Inorganic Chemistry	**1)** Determine analyses and evaluate the interpretation ships involve in chemistry. **2)** Develop thirst of chemical knowledge, become flexible and persistence learners and appreciate the need for lifelong learning.

Semester-III(SY BSc. CHEMISTRY)

After completion of these courses students should be able to;	
Course	**Outcomes**
PHY-301: Physical and Inorganic Chemistry	**1)** Know the qualitative properties of solution, the depression in freezing point, elevation in boiling point and osmotic pressure. Calculate molar and normal solution of various concentrations. **2)** Explains the application of colligative properties in determining molecular mass. **3)** Know the qualitative properties of solution, the depression in freezing point, elevation in boiling point and osmotic pressure. **4)** Compares the general characteristics electronic configuration of lanthanides and actinides, uses of lanthanides and actinides.
PHY-302: Organic and Inorganic Chemistry	**1)** This course gives the quantitative ideas about the synthesis, properties and uses of such heterocyclic compounds like pyrole, pyridine qunolene, thiophene, furan etc.. Different methods for the preparation of important Hetero cycles and their important reactions.Aromaticity, Huckel's rule and its applications **2)** Explains the different types of structural and stereo isomers CO_2 Represent organic molecules by Fischer, Flying wedge, Sawhorse and Newman projection formulas , Conformational isomerism of

	ethane, n-butane, cyclohexane, Conformational analysis of 1,4 cis and trans disubstituted cyclohexane. 3) Explains the theories of acids and bases. Different solvents and solubility. Hard and soft acids and bases: definitions, Pearson HSAB concept, theories of Hardness and softness, application and limitation of HSAB concepts
CH-304 Basic Analytical Chemistry	**1)** Develops accuracy and precision in doing experiments, understands the different errors and methods for minimizing errors. Explanation of MSDS. Explain significant figures, absolute error, relative error, mean, median, Give the theory behind the qualitative and quantitative analysis conducted in the laboratory. Study the importance of safety and security, responsibility types of hazards and risk in chemical laboratory.Understand the use of personal protective and other safety equipments, handling of chemical in laboratory. **2)** Understand the route of explores for toxic chemicals. Learn good laboratory practices and its applications. **3)** Students are enabling to aware about PH, POH, derivation of Henderson's equation, Conduct acid base titrations, Different indicators used in titrations, **4)** complex metric titrations, Applications of titrations **5)** Students are Enable to aware about Classification of chromatography, Mobile phase and stationary phase, Study the instrumentation, sample injection system, columns for HPLC and GC, Solvent treatment system and choice of mobile phase. To give an extended knowledge about chromatographic
CH-303 Chemistry Practical	**1)** Determine the miscibility temperature of phenol–water system **2)** Experimental demonstration of Conductometric and Potentiometric titrations of strong acid against strong base, weak acid against strong base. **3)** Simple Organic and Inorganic derivatives preparations

Semester-IV(SY BSc. CHEMISTRY)

After completion of these courses students should be able to;	
Course	**Outcomes**
PHY-401: Physical and Inorganic Chemistry	**1)** Free energy and equilibrium, Gibbs and Helmholtz energies, spontaneous and non-spontaneous reactions, changes in enthalpy, Entropy and free energy of reactions, Derivations of Clauses and Celsius chaperon equations. **2)** Electrochemistry discussed electrical properties of ionic solutions. Different types of cells and their formulations, applications. Solve the cell reactions and calculate cell EMF. **3)** Double salts and coordination compounds, co-ordination complexes and complex ions, coordination number, Unidentate, bidentate and polydentate ligands, chelating ligand and chelates, physical methods used in study of complex, Nomenclature of coordination compounds. **4)** Theoretical knowledge about matals, non-metals and semiconductors. Understand the p-type semiconductor and n-type semiconductor. Their preparations and uses.
PHY-402: Organic and Inorganic Chemistry	**1)** Synthesis of organic reaction is itself involves a large part of organic chemistry. This is called synthetic organic chemistry. This chapter involves different synthetic reagents for synthesis of malonic ester and Acetoacetic ester. **2)** Organometallic compounds are very important in biological bodies like hemoglobin, **3)** Chlorophylls, Vitamin B_{12} and also they can be used as chemical reagent. This course discussed about the synthesis and properties of these organometallics of Zinc, Magnessium, Lithium and Copper. **4)** to understand deferent theories like MOT, VBT, CFT, LCAO, Compare MO and VB theory, Know the meaning of various terms involved in co-ordination Chemistry ,To understand Werner's formulation of complexes and identify the types of

	valences, Know the limitations of VBT, Know the shapes of d-orbitals and degeneracy of d-orbitals, Explain MO Theory and draw the MO diagrams for H_2, He_2 , B_2, N_2, O_2, CO and NO
CH-403 Chemistry Practical	**1)** Experiments based on Gravimetric and Colorimetric analysis. **2)** Gravimetric estimation of Barium, Sulphate, Calcium using silica crucible **3)** Organic qualitative analysis in small quantity helps in type determination and reducing the consumption of chemicals. **4)** Determine the physical constants like boiling point and melting point of organic compounds. **5)** Recrystallization of organic compounds from alcohol and water. **6)** Identify the organic compounds. **7)** Paper chromatography.

Semester-V (TY BSc. CHEMISTRY)

After completion of these courses students should be able to;	
Course	**Outcomes**
CH-501: Principles of Physical Chemistry-I	**1)** To orient and acquaint the students towards the basic concepts of Quantum Chemistry **2)** To acquire knowledge about rates of chemical reactions and distinguishing the reaction of different order and their characteristics. **3)** To understand the basic principles of phase rules and phase diagrams. **4)** To learn the underlying principles of electrode reactions, electrochemical cells and applications of EMF.
CH-502: Inorganic Chemistry	**1)** To describe the VSEPR theory to predict shape of molecules from electron pairs. **2)** To describe the bonding in simple compounds using VBT. **3)** To describe the principles of VBT to predict hybridization of orbitals. **4)** To understand how CFT explains electronic structure, colour and magnetic properties of co-ordination compounds. **5)** To introduce the basic principles of MOT and electronic geometry of molecules.

CH-503 - Organic Reaction Mechanism	**1)** To study different types of organic reactions. To understand the mechanisms of different types of reactions. **2)** To distinguish between types of substrates and types of reagents. **3)** To understand ways of attack of reagent, breaking and formation of bonds in different reaction mechanisms. **4)** To study kinetics, evidences and factors affecting different types of reactions. **5)** To study stereochemistry of different reactions. **6)** To understand role of different reagents in different reactions
CH-504 Industrial Chemistry	a. Student will understand ….. 1) basic requirements of Chemical Industry, different terms, operations and processes involved in chemical Industry. 2) Describe Copy Right Act, Patent Act and Trade Marks, Bureau of Indian Standards (BIS) and International Organization for Standardization (ISO). 3) Basic requirements, raw materials, different processes and operations involved in Sugar Industry and also different grades of sugar and uses of by-products of sugar industry. 4) Importance of fermented products, basic requirements, theory and process of alcohol making, fractional distillation and various terms involved in Fermentation Industry. 5) Understand Occurrence of Petroleum, theories of formation of Petroleum and different terms Viz. Knocking, Anti-Knock Compounds, Octane number, Cetane number, Gasohol and Power alcohol etc. 6) Manufacturing processes involved in Industrial Organic Synthesis such as Methanol, Isopropanol, Glycerol, Acetylene and Aromatic hydrocarboni.e. Toluene from petroleum with their uses
CH-505 - Analytical Instrumentation	**1)** To develop an understanding of the range and uses of analytical methods in chemistry. **2)** To understand and establish the role of chemistry in quantitative analysis. **3)** To enhance the Analytical instrumental skill of the students.
CH-506(A):Bio-Chemistry	**1)** Students will study biomolecule like carbohydrates, amino acids, proteins, enzymes, lipids and nucleic acids. **2)** Students will understand definitions, classifications and examples of these biomolecule. **3)** Students will learn the detailed structure of these biomolecule along with types of bonds or linkages present in their molecules.

	4) Students will learn the chemical properties of these biomolecule and the action of some reagents on them inthe form of reactions or graphical presentation. **5)** Students will understand biochemical energetic of common energy rich compounds along with hydrolytic reactions. **6)** Students will learn metabolisms like Glycolysis, TCA cycle, **7)** Transamination, deamination and β- oxidation through reactions, enzymes involved, outlines and energetic.

Semester-VI(TY BSc. CHEMISTRY)

After completion of these courses students should be able to;	
Course	**Outcomes**
PHY-601: Principles of Physical Chemistry-II	**1)** To learn the basics of molecular spectroscopy and rotational spectra. **2)** To understand the basic principles and applications of nuclear chemistry. **3)** To learn the consequences of light absorption by atoms and molecules and photochemical reactions. **4)** To learn the laws of crystallography and basics of crystal structure
PHY-602: Inorganic Chemistry	**1)** Learn about basic principles and synthesis of nanomaterial's. **2)** Learn about classification, composition and processing of cement. **3)** Learn about classification and composition of alloys. **4)** Learn about types manufacture and applications of fertilizers
CH-603 Spectroscopic Methods of Structure Determination	**1)** To study principle of spectroscopy and to understand wave parameters and terms involved in spectroscopy. **2)** To study different types of spectroscopy. **3)** To understand principle, concept and the terms used in each type of spectroscopy. **4)** Interpretation of UV, IR, NMR spectra. **5)** Use of spectral data for determination of structure of unknown organic compounds. **6)** To study different applications of each type of spectroscopy.
CH-604 Chemistry of industrial Important Product	The student will be able to understand…. **1)** Describe the industrial production of a number of important organic and inorganic compounds / chemicals and products of end use. **2)** Gain comprehensive knowledge of cutting-edge developments in a field of different chemical industries. **3)** Importance of Cosmetics Industry and a general study including preparation and uses of the Hair dye, hair spray,

	shampoo, suntan lotions, lipsticks, talcum powder, nail enamel, creams (cold, and shaving creams). **4)** Perfumes and identify the distinguishing features of its components and also an essential oils and their importance in cosmetic industries with reference to Eugenol, Geraniol, sandalwood oil, eucalyptus, rose oil, 2- phenyl ethyl alcohol, Jasmone, Civetone, Muscone etc. **5)** Know about pesticides both natural and synthetic, benefits and adverse effects of it, also synthesis, manufacture and uses of pesticides viz. Organochlorines (DDT, Gammexene,); Organophosphates (Malathion, Parathion); Anilides (Alachlor and Butachlor). **6)** Definition, classification, raw material used in soaps and detergents, reaction involved in it, Manufacture of Soaps and cleansing action of soaps and detergents. **7)** Definition, properties of good dyes, relation between colour and constitution, classification of dyes according to theirmode of application and chemical constitution. **8)** Importance's, definition and meaning of the different terms involved in Drugs and Pharmaceuticals Industry and also synthesis, uses, properties and industrial manufacture of Paracetamol, Aspirin, and Chloramphenicol.
CH-605 Analytical Techniques	**1)** To provide knowledge of instruments which are used in Chemical, Pharma, Petroleum, and insecticide and pesticide industry **2)** To increase student technical skill as per industry need. **3)** To develop an understanding of the range and uses of analytical methods in chemistry.
CH-606(A): Polymer Chemistry	**1)** Define terms like monomer, polymer, polymerization, polydispersity index, etc., classify polymers based on their origin, native backbone chain, and thermal response. **2)** Know glass transition temperature and its determination, various ways to express molecular weights of polymers and polydispersity index. **3)** Identify different mechanisms of polymerizations viz. Free radical, ionic, and condensation polymerizations. **4)** Distinguish techniques of polymerization based on physical conditions required for the preparation of polymers in laboratory or industry. **5)** Familiar with preparation, properties, and applications of industrially important selected polymers.

Department of Botany

Under Graduate (UG)

After successful completion of three year degree program in(**B.Sc. Botany**) a student should be able to;	
Programme Outcomes	• To study the Lower and higher cryptogamic plants. • To study the diversity and economical importance of Angiosperms and Gymnosperms plant groups. • To study Plant Physiology, Metabolism, Anatomy, Embryology and Ecology. • To study techniques of Horticulture, Floriculture, Plant Breeding etc.
Programs Specific Outcome	• To study diversity, habit, habitat and life cycle patterns of Virus, Bacteria, Fungi, Algae, Bryophytes and Pteridophytes plant groups. • To study the Angiosperms and Gymnosperms plant upto Class, Order, Family, Genus and Species and economical importance each family. • To study the Physiological processes, internal structure, embryo and endosperm and ecological factors of plants. • To understand Horticulture practices, techniques commercial Floriculture and Plant breeding.

Course Outcomes

Semester-I (FY BSc. BOTANY)

After completion of these courses students should be able to;	
Course	**Outcomes**
BOT-101: Microbial Diversity, Algae & Fungi	**1)** Student studied the diversity among the microbes. **2)** Students had known the systematic morphology and structures of bacteria, viruses' algae and fungi.
BOT-102: Plant Taxonomy	**1)** Student studied the diversity among angiosperms. **2)** To understand the economic importance of the angiospermic plants.

Semester-II (FY BSc. BOTANY)

After completion of these courses students should be able to;	
Course	**Outcomes**
BOT-201: Diversity of Archegoniates	**1)** To studied the Silent features of Archegoniates **2)** Student makes aware about higher cryptogams and Gymnosperms.
BOT-202: Plant Ecology	**1)** Students aware about the conservation about biodiversity. **2)** To study the botanical regions of India and types of vegetation in Maharashtra.

Semester-III(SY BSc. BOTANY)

After completion of these courses students should be able to;	
Course	**Outcomes**
BOT-301: Plant Anatomy	**1)** To know the scope and importance of Plant Anatomy. **2)** To study various tissue system.
BOT-302: Plant Physiology	**1)** To know the importance and scope of Plant Physiology. **2)** To study the different processes in relation with structure of organism and its environment.

Semester-IV(SY BSc. BOTANY)

After completion of these courses students should be able to;	
Course	**Outcomes**
BOT-401: Plant Embryology	**1)** To know the scope and importance of Embryology. **2)** To Study the Pollination, Fertilization Endosperm and Embryogeny.
BOT-402: Plant Metabolism	**1)** To study the scope and importance of plant metabolism. **2)** To know the process of Photosynthesis in higher plants, C3, C4 and CAM pathway.

Semester-V (TY BSc. BOTANY)

After completion of these courses students should be able to;	
Course	**Outcomes**
BOT-501: Lower Cryptogams	**1)** To study salient features of cryptogamic plants. **2)** To make students aware about the status of cryptogams as a group in plant kingdom.
BOT-502: Morphology and Systematics of Angiosperms	**1)** To study vegetative and floral morphology of angiosperm plants. **2)** To study the status of angiosperm in plant kingdom.

BOT-503: Cell Biology and Genetics	**1)** To study the Prokaryotic and eukaryotic cell. **2)** To study the cell components and their functions.
BOT-504: Plant Physiology and Biochemistry	**1)** To study the growth pattern of plant. **2)** To know the phenomenon of photoperiodism and effect of phytochrome on flowering.
BOT-505: Biofertilizers	**1)** To introduce application of Biofertilizer technology in Agriculture. **2)** To familiarize students with microbes used as biofertilizers.
BOT-506: Horticulture	**1)** To know horticulture, its scope, disciplines and importance. **2)** To understand different horticultural practices and their methods.

Semester-VI (TYBSc. BOTANY)

After completion of these courses students should be able to;	
Course	**Outcomes**
BOT-601: Higher Cryptogams	**1)** To study salient features of cryptogamic plants. **2)** To make students aware of the status of cryptogams as a group in plant kingdom.
BOT-602: Gymnosperms and Paleobotany	**1)** To study Gymnosperms with respect to distinguishing characters, comparison with Angiosperms, and classification. **2)** To study the life cycles of Pinus and Gnetum.
BOT-603: Molecular Biology	**1)** To study molecular biology in relation to genetic material, its inheritance, modification, replication. **2)** To study the mitochondria and chloroplast DNA.
BOT-604: Economic Botany	**1)** To know useful bio resources of prime importance to mankind. **2)** To acknowledge students about various groups of plants of the world as well of India.
BOT-605: Floriculture	**1)** To know floriculture, its scope and importance. **2)** 2) To know the commercial floriculture.
BOT-606B: Plant Breeding	**1)** To introduce the student with science of plant breeding. **2)** To introduce student with branch of Plant Breeding for survival of human being from Starvation

Department of Zoology

Under Graduate (UG)

After successful completion of three year degree program in (**B.Sc. ZOOLOGY**) a student should be able to:

Sr. No.	Programme Outcomes (POs)	Program Specific Outcomes (PSOs)
1	Possess a good command of fundamentals in Zoology and its relationship to other disciplines.	Achieve excellence in academic and scientific research in the field of Zoology.
2	Know the theories and scientific facts in the sections of Zoology and interrelations among organisms and their biosphere	Develop and implement ways and means to ensure quality performance and outputs of Zoology program.
3	Memorize the concepts of laboratory management, organization and evaluation.	Use modern technology in education and scientific research in Zoology.
4	Recognize the management and concepts of bio-systems, organization and evaluation.	Implement advanced training to improve the skills of graduates in Zoology and related fields.
5	Outline the policy and legislation of animal Science and ethics.	Create academic and scientific environment to attract outstanding faculty, researchers and students.
6	Design and conduct experiments in Zoology	Improve the national and international partnerships with academic institutions and research centers.
7	Communicate effectively through writing reports, giving presentations, and participating in discussions.	Amelioration in presentation skill with specific purpose
8	Demonstrate skill in the usage of computers, networks, and software packages relevant to Zoology	Object orientated computer skill.

Course Outcomes

Semester-I (FY BSc. ZOOLOGY)

After completion of these courses students should be able to:	
Course	**Outcomes**
ZOO 101 **Animal Diversity I**	**1)** Understand classification of protista. **2)** Study General characters and classification up to classes. **3)** Describe and classify phylum Platyhelminthes and identify the problems caused by parasitic forms **4)** Understand the anatomical features of non- chordates through type study of Phylum Arthropoda
ZOO 102 **Animal Diversity II**	**1)** Describe and classify branch Pisces, with examples and salient features **2)** Study the Generate an understanding about phyla. **3)** Classify mammals and interpret general evolutionary relationships among and between these animal groups
ZOO 103 Practical **Animal Diversity I & II**	**1)** Observe morphological structure of animal. **2)** Identify differentiae animal in animal diversity.

Semester-II (FY BSc. ZOOLOGY)

After completion of these courses students should be able to:	
Course	**Outcomes**
ZOO 201 **Comparative Anatomy of Vertebrates**	**1)** Understand Derivatives of integument w.r.t. glands and digital tips. **2)** Describe comparative anatomy of Vertebrates. **3)** Discuss Brief account of alimentary canal and digestive glands. **4)** Identify Types of receptors.
ZOO 202 **Developmental Biology of Vertebrates**	**1)** Describe Early Embryonic Development. **2)** Differ Fundamental processes in development **3)** Explain in brief Types of placenta on the basis of histology **4)** Understand Developmental biology of Vertebrates.
ZOO 203 Practical **Comparative Anatomy & Developmental Biology of Vertebrates**	**1)** Observe comparative anatomy of animal. **2)** Identify differentiae animal in vertebrates. **3)** Describe Developmental Biology of Vertebrates

Semester-III (SY BSc. ZOOLOGY)

After completion of these courses students should be able to;	
Course	**Outcomes**
ZOO 301 **Physiology**	**1)** Understand Structure of a neuron. **2)** Understand about Absorption of carbohydrates, proteins, lipids. **3)** Describe Respiratory volumes and capacities. **4)** Acquire knowledge regarding Structure of Heart and Endocrine glands
ZOO 302 **Biochemistry**	**1)** Describe Biosynthesis and β oxidation of palmitic acid. **2)** Understand Classification of Enzymes **3)** Develop knowledge of Enzyme Kinetics.
ZOO 303 **Physiology &** **Biochemistry**	**1)** Understand Preparation of hemin and hemochromogens **2)** Understand about Estimation of total protein in given solutions by Lowry's method **3)** Describe Study of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage
SEC I **Apiculture**	**1)** Understand Classification and Biology of Honey Bees **2)** Acquire knowledge regarding Describe Artificial Bee rearing **3)** Develop knowledge about Products of Apiculture Industry and its Uses **4)** Understand about Modern Methods in employing artificial Beehives for cross pollination in horticultural gardens

Semester-IV (SY BSc. ZOOLOGY)

After completion of these courses students should be able to:	
Course	**Outcomes**
ZOO 401 **Genetics**	**1)** Understand about Mendel's work on transmission of traits **2)** Understand Chromosome theory of inheritance **3)** Describe definition of gene mapping& mutation **4)** Students become familiar with Chromosomal mechanisms and methods
ZOO 402 **Evolutionary Biology**	**1)** Understand about Major Events in History of Life **2)** Describe Types of natural selection **3)** Acquire knowledge regarding Biological species concept
ZOO 403 **Genetics &** **Evolutionary Biology**	**1)** Describe Study of Linkage, recombination, gene mapping using the data **2)** Understand about Study of homology and analogy from suitable specimens/ pictures **3)** Students become familiar with Study of Mendelian Inheritance and gene interactions
SEC II **Medical Diagnostics**	**1)** Describe Preparation of blood smear and Differential Leucocyte Count. **2)** Develop knowledge about prevention of Diabetes **3)** Understand about Diagnostic Methods Used for Urine Analysis

Department of Mathematics

UNDER GRADUATE (UG)

Programme Outcomes: B.Sc. Mathematics

After successful completion of three year degree program in Mathematics student should be able to;	
Course Objectives	**Programme Specific Outcome**
• A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays , state important facts resulting from their studies. • A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning. • A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences. • A student be able to apply their skills and knowledge ,that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion. • A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture.	• 1. Give the students a sufficient knowledge of fundamental principles ,methods and a clear perception of innumerous power of mathematical ideas and tools and know how to use them by modeling ,solving and interpreting. • Reflecting the broad nature of the subject and developing mathematical tools for continuing further study in various fields of science • Enhancing students' overall development and to equip themwith mathematical modeling abilities, problem solving skills , creative talent and power of communication necessary for various kinds of employment • Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

Semester I (F.Y.B.Sc. Mathematics)

After completion of these courses students should be able to;	
Course	**Course Outcomes**
MTH 101: Matrix Algebra	**1)** Understand concepts on matrix operations and rank of the matrix. **2)** understand use of matrix for solving the system of linear equations. **3)** Understand basic knowledge of the Eigen values and Eigen vectors. **4)** Apply Cayley-Hamilton theorem to find the inverse of the matrix. **5)** Know the matrix transformation and its applications in rotation, reflection, translation.
MTH 102: Calculus	**1)** Understand basic concepts on limits and continuity. **2)** Understand use of differentiations in various theorems. **3)** Know the Mean value theorems and its applications. **4)** Make the applications of Taylor's, Maclaurin's theorem. **5)** Know the applications of calculus.
MTH 103(B): Graph Theory	**1)** Make the applications Graph, Simple graph, Multigraph, Hand shaking lemma, Types of Graphs, Operations on graphs, Subgraphs, Isomorphism of graphs, Walk, path, cycles **2)** Solving examples of Connected and disconnected Graphs, bridges, Cut vertices, edge connectivity and vertex connectivity, Eulerian graph, Hamiltonian Graph, Planer Graph, Euler's Formula for planer graphs, Kuratowski's two graph, Geometrical dual **3)** Solve problems on Definition and some properties of trees, Distance and Centre in a tree, Definitions of Rooted and Binary trees, Spanning trees, Minimal Spanning trees, Directed graphs, some types of digraphs.

Semester II

Course	**Course Outcomes**
MTH 201: Ordinary Differential Equations	**1)** Understand basic concepts in differential equations. **2)** Understand method of solving differential equation **3)** Understand use of differential equations in various fields.
MTH 202: Theory of Equations	**1)** Students can find out roots of any equation of degree less than or equal to five. Theory of equations is highly useful in various subjects like algebra, linear algebra, calculus, ordinary and partial differential equations etc.
MTH 203(A): Laplace Transform	**1)** Understand basic concepts on Laplace and Inverse Laplace transforms **2)** Understand convolution theorem. **3)** Understand use of Laplace transform in solving Differential Equations.

Semester-III

After completion of these courses students should be able to;	
Course	**Course Outcomes**
MTH 301: Calculus of Several Variables	**1)** limit and continuity of functions of several variables **2)** Fundamental concepts of multivariable Calculus. **3)** Series expansion of functions. **4)** Extreme points of function and their maximum, minimum values at those points. **5)** Meaning of definite integral as limit as sums. **6)** how to solve double and triple integration and use them to find area by double integration and volume by triple integration
MTH -302(A): Group Theory	**1)** Understand group and their types, which is one of the building blocks of pure and applied mathematics. **2)** understand Lagrange, Euler and Fermat theorem **3)** understand concept of automorphism of groups **4)** understand concepts of homomorphism and isomorphism **5)** Understand basic properties of rings and their types such as integral domain and field.
MTH 304: Set Theory and logic	**1)** Uses of the language of set theory, designing issues in different subjects of mathematics **2)** understand the issues associated with different types of finite and infinite sets via countable uncountable sets **3)** knowledge of the concepts and methods of mathematical logic, set theory, relation calculus, and concepts concerning functions which are included in the fundamentals of various disciplines of mathematics **4)** understanding the role of propositional and predicate calculus ***2)*** e) able to provide the logical mathematical reasoning, formulate theorems and definitions

Semester-IV

After completion of these courses students should be able to;	
Course	**Course Outcomes**
MTH -401: Complex Variables	**1)** The course is aimed to introduce the theory for functions of complex variables **2)** Students will understand the concept of analytic function **3)** Students will understand the Cauchy Riemann Equations **4)** Students will understand harmonic functions **5)** Students will understand complex integrations **6)** Students will understand calculus of residues. **7)** Students will acquire the skill of contour integrations.
MTH-402(A): Differential Equations	**1)** Students will aware of formation of differential equations and their solutions **2)** Students will understand the concept of Lipschitz condition **3)** Students will understand method of variation of parameters for second order L.D.E. **4)** Students will understand simultaneous linear differential equations and method of their solutions **5)** Students will understand Pfaffian differential equations and method of their solutions **6)** Students will understand difference equations and their solutions.
MTH 404: Vector Calculus	**1)** understand scalar and vector products **2)** Understand vector valued functions and their limits and continuity and use them to estimate velocity and acceleration of partials. **3)** Calculate the curl and divergence of a vector field. **4)** Set up and evaluate line integrals of functions along curves.

Department of Computer Science

T. Y. B. Sc. (Computer Science) (w.e.f. June -2020)

DSC (UG-CS-501) System Programming Semester-V

Course Outcomes:

- Understand details about system software
- To do basic system program like development of editors lexical analyzers etc
- Students are familiar with language processing activities- functions of translators, loader and linkers

DSC (UG-CS-502): Database Management System Semester-V

Course Outcomes

On completion of the course, student will be able to–

- Solve real world problems using appropriate set, function, and relational models.
- Design E-R Model for given requirements and convert the same into database tables.
- Use SQL.

DSC (UG-CS-503)Software Engineering Semester-V

Course Outcomes:

After completion of the course:

- Students are able to perform the E-R Diagram, DFD, Data dictionary, Decision tree about software.
- They can also design the software in learned language using the course content.
- Get the knowledge of types of testing & how testing is performed in industry.

DSC (UG-CS-504): Computer Aided Graphics Semester-V

Course Outcome:

- Differentiate between interactive and non-interactive graphics.
- Study line Drawing and Circle Drawing techniques and algorithms.
- Perform 2D and 3D transformation on different images.
- Know about detail working of 2D and 3D clipping and windowing.
- Understand raster graphics and hidden surface elimination.

DSC SEC(UG-CS-505)Python Programming – I Semester-V

Course Outcome: At the end of the course, the student will be able to

- Explain basic principles of Python programming language
- Construct and apply various filters for a specific task.
- Apply the best features of mathematics, engineering and natural sciences to program real life problems.

DSC (UG-CS-506 A):Elective A - Internet Programming using PHP Semester-V

Outcomes:

- To Design dynamic and interactive Web pages.
- PHP framework for effective design of web applications.

DSC (UG-CS-506B): JAVA Programming I Semester-V

Course Outcomes:

- Get knowledge of JDK environment
- Explore polymorphism using method overloading and method overriding
- Understand the different aspects of hierarchy of classes and their extensibility
- Understands the concept of streams and files
- Write programs for handling run time errors using exceptions

DSC UG-CS-508: LAB on Computer Aided Graphics Semester-V

Course Outcome:

- Understanding Graphics Concept Practically
- Hands on of using standard graphics library
- Hands on of implementation of DDA, Bresenham's Line,Circle Drawing Algorithm
- Hands on of implementation of 2D Transformation: Translation, Scaling and Rotation
- Hands on of implementation ofCohen-Sutherland line clipping algorithm

DSC (UG-CS-509B): Lab on JAVA Programming I Semester-V

Course Outcomes:

- Get knowledge of JDK environment
- Explore polymorphism using method overloading and method overriding
- Understand the different aspects of hierarchy of classes and their extensibility
- Understands the concept of streams and files
- Write programs for handling run time errors using exceptions

DSC (UG-CS-601):Operating System
Semester-VI

Outcomes:

- Students should familiar with Operating System Services.
- Understand CPU scheduling algorithms, memory Management Techniques, Disk Drum Scheduling algorithms, Deadlock preventions and avoidance.
- Introduction to android operating systems – its architecture, applications and uses.

DSC (UG-CS-602):Relational Database Management Systems Semester-VI

Course Objectives

- To teach fundamental concepts of RDBMS (PL/PgSQL)
- To teach database management operations
- Be familiar with the basic issues of transaction processing and concurrency control
- To teach data security and its importance

DSC (UG-CS-603):Computer Network Semester-VI

Course Outcomes:

After completion of the course:

- Students understand the information exchange done across the network with the help of OSI & TCP/IP models.
- Student understands how errors are captured & handled in network.
- Student understands various attack & its prevention techniques.

Theoretical Computer Science (UG-CS-604) Semester-VI

Course Outcome

1) Understanding the use of Sets, Relations and Graphs.
2) Understand Languages in TCS.
3) Introduction of Regular Languages and Expressions.
4) Understanding Pumping Lemma and its applications.
5) Explore the knowledge of Pushdown Automata.
6) Understanding Normal Forms with Examples.
7) Understanding Turing Machine.

DSC (UG-CS-605) Python Programming – II Semester-VI

Course Outcome: At the end of the course, the student will be able to

- Explain basic principles of Python programming language
- Implement object oriented concepts, database applications.
- Construct regular expressions for pattern matching and apply them to various filters for a specific task.
- Design and implement Database Application and Content providers.
- Apply the best features of mathematics, engineering and natural sciences to program real life problems.

Elective A - Web Programming using ASP.NET Semester-VI

Outcomes:

- Upon completion of this course the students should be able to understand the .NET framework ·
- Develop a proficiency in the ASP.NET ·
- Develop ASP.NET web applications on any given scenario.

DSC (UG-CS-606B): JAVA Programming II Semester-VI

Course Outcomes:

- Program using graphical user interface with Swing classes
- Handle different kinds of events generated while handling GUI components
- Create programs using menus and dialog boxes
- Program to create applets
- Understand advanced java concepts like JDBC, Java Beans

DSC (UG-CS-Lab 608): Lab on RDBMS Semester-VI

Course Outcomes:-

On completion of this course, students will be able to :

- To use SQL & PL/SQL.
- To perform advanced database operations.
- Create database tables in postgreSQL.
- Write and execute simple, nested queries

DSC (UG-CS-509 B): Lab on JAVA Programming II Semester-VI

Course Outcomes:

- Program using graphical user interface with Swing classes
- Handle different kinds of events generated while handling GUI components
- Create programs using menus and dialog boxes
- Program to create applets
- Understand advanced java concepts like JDBC, Java Beans

BCA

CA 101 - Fundamentals of Accounting

Course Outcomes – At the end of the course, student will be able to:

1. To understand fundamental concepts of financial accounting.
2. To understand the basics of cost accounting.
3. To maintain and record financial transactions in books of accounts.
4. To prepare final accounts of sole proprietary business.
5. To prepare Cost Sheet and record the transactions of materials.

BCA 102–Fundamentals of Computer

Course Outcomes – At the end of the course, student will be able to:

1. Acquire the knowledge of fundamentals of Computer and Operating System.
2. Develop problem solving skill through algorithms and flowcharts.
3. Understand the basics of computer networking and internet.

BCA 103 - Programming in C – I

Course Outcomes – At the end of the course, student will be able to:

1. Understand the basic concepts of C Programming for problem-solving and Illustrate the C data types, syntax and constructs.
2. Illustrate C for decision making, branching and looping statements
3. Understand the concept of Array and Strings to solve different problems.

BCA 104 - Web Design – I

Course Outcomes – At the end of the course, student will be able to:

4. Acquainted with elements, Tags and basic structure of HTML files.
5. Up skills the knowledge of basic and advanced web designing.
6. Students were implement effective use of List and Tables.
7. Students were implement effective web page navigation.
8. Students were capable to design web page layout
9. Students were understood and implement use of style sheet

BCA 105 - Lab on Computer Fundamental

Course Outcomes – At the end of the course, student will be able to:

1. Students can able to understand the installation of operating system.
2. Students can understand basic DOS command, and different browser.
3. Student understand different platforms, Internet, mails, tables
4. Students can learn text formatting and table formatting.
5. Students capable to design power point presentation, tables, shapes, smart arts and chart

BCA 106 - Practical on Web Design – I

Course Outcomes – At the end of the course, student will be able to:

1. Students were able to design consistent look and feel web pages.
2. Students were capable to use multimedia in web page.
3. Students were implement effective web page navigation.
4. Students were capable to design web page layout
5. Students were implement use of style sheet.

BCA 107–Lab on C Programming

Course Outcomes – At the end of the course, student will be able to:

1. Students understand the input output functions.
2. Students can understand the use of various operator.
3. Students can understand the use of control statements.
4. Students can design the various expressions in C
5. Students can understand the array and its type.

BCA 201 –Professional Communication

Course Outcomes – At the end of the course, student will be able to:

1. To develop his verbal and non verbal communication ability
2. To communicate with people effectively and confidently.
3. To draft effective business correspondence documents.
4. To make and present well designed and informative presentations

BCA 202–Database Management System

Course Outcomes – At the end of the course, student will be able to:

1. Introduction to the basic concepts of database management systems.
2. Learning to design databases using ER modeling.
3. Learning to apply integrity constraints.
4. To understand and demonstrate database schema.
5. Understand and demonstrate Relational databases, SQL.

BCA 203–Programming in C – II

Course Outcomes – At the end of the course, student will be able to:

1. Apply the concepts of Function modules, its usage
2. Apply the concepts of memory allocation using Pointers
3. Understand the concepts of structures and unions: declaration, initialization and implementation.
4. Learn to draw different graphics objects.
5. Learn to store and apply the data using files.

BCA 204–Web Design – II

Course Outcomes – At the end of the course, student will be able to:

1. Student were able to embed JavaScript in web page
2. Students successfully added interactivity in web page
3. Students were applied validation on web form
4. Students were implemented different events.
5. Students were familiar with bootstrap framework.

BCA 205 - Lab on DBMS

Course Outcomes – At the end of the course, student will be able to:

1. Students can able to create the database.
2. Students can understand basic database commands.
3. Students can understand constraint.
4. Students capable to design SQL using different clause.

BCA 206–Lab On C Programming – II

Course Outcomes – At the end of the course, student will be able to:

1. Student were able to understand the concept of Function techniques
2. Students were able to understand the storage classes
3. Students were able to understand pointer and its uses.
4. Students were able to design the basic graphics objects
5. Students understood the operations on file and command line argument.

BCA 207–Lab on On Web Design – II

Course Outcomes – At the end of the course, student will be able to:
1. Student were able to develop web page using JavaScript
2. Students successfully added interactivity features in web page
3. Students were implemented validation on web form
4. Students were implemented different events.
5. Students were familiar with bootstrap framework

BCA 301 : Mathematics and Statistics for Managers

Upon successful completion of this course the student will be able to:

a) Understand concepts on Mathmatical Logic like truth table
b) Understand concepts on set, vain diagram and etc
c) Understand concepts on matrix operations addition multiplication and other thermos
d) Student able to understand for introduction to statics

BCA 302 : Management Information Systems

Course Outcomes – At the end of the course, student will be able to:
Student understand the concepts of management and information's

BCA 303: JAVA Programming

Course Outcomes – At the end of the course, student will be able to:

a. Write, compile, and execute Java programs that may include basic data types and control flow constructs using J2SE or other Integrated Development Environments (IDEs) such as Eclipse, NetBeans, and JDeveloper.
b. Write, compile and execute Java programs using object oriented class structures with parameters, constructors, and utility and calculations methods, including inheritance, test classes and exception handling.
c. Write, compile, and execute Java programs using arrays and recursion. - Write, compile, and execute Java programs manipulating Strings and text documents.
d. Write, compile, execute Java programs that include GUIs and event driven programming.
e. Write a final project that may be selected from among the following: applets for inclusion in web pages; applets to access enterprise data bases in robust, enterprise three level applications; secure communications over the internet; or an approved project chosen by the student.

BCA 304: LINUX Operating System

Course Outcomes – At the end of the course, student will be able to:
1. Students can able to understand the operating system
2. Students can understand basic commands of Linux .
3. Students can understand shell programming
4. Students capable to complier c program in Linux .

BCA 401: Introduction to Information System Audit.

Course Outcomes – At the end of the course, student will be able to:
1. Students can able to understand the information of auditing
2. Students can understand conducting an information system audit.

BCA 402: RDBMS.

On completion of the course, student will be able to–
Design E-R Model for given requirements and convert the same into database tables.

a. Use database techniques such as SQL
b. & PL/SQL. Explain transaction Management in relational database System.
c. Use advanced database Programming concepts

BCA 403: C#.NET

Get knowledge of .net fretwork

- Understand the different aspects of object oriented language
- Understands the concept of windows and application
- Write programs for handling run time errors using exceptions

BCA 404: Data Structure.

Course Outcomes – At the end of the course, student will be able to:
1. Student were able to understand the concept of array

2. Students were able to understand the stack operation
3. Students were able to understand queues and its types
4. Students were able to design the basic link list programs
5. Students understood the operations graphs and tree

BCA 501 - Entrepreneurship Development

Course Outcomes – At the end of the course, student will be able to:

1. Student were able to understand Entrepreneur
2. Students were able to understand Entrepreneurship Development and Government:
3. Students were able to understand Challenges to Woman Entrepreneur
4. Students were able to design the small business

BCA 502 - Cyber Security

Course Outcomes – At the end of the course, student will be able to:

1. Students understand information security, network security
2. Students can understand the use important of cyber security
3. student able to concepts of cartography

4 student able to understand the cybercrime and IC Act 2000,2008

BCA 503 - ASP.NET Technology

Course Outcomes – At the end of the course, student will be able to:

1. Student were able to develop web page using asp.net
2. Students successfully added interactivity asp.net controls
3. Students were implemented validation on web form
4. Students were implemented different events.
5. Students were familiar with ASP.Net Intrinsic Objects and State Management

BCA 504 - Software Engineering

After completion of the course:

1 Students are able to perform the E-R Diagram, DFD, Data dictionary, Decision

2 types of various development life cycle

3 Get the knowledge of types of testing

4 & how testing is performed in industry

BCA 601 - e-Commerce & m – Commerce

Course Outcomes – At the end of the course, student will be able to:

1. Student were able to : Introduction to E-Commerce
2. Students able to understand Elements of E-Commerce & M-Commerce
3. Students able to understand EDI and Electronic Payment Systems
4. Students were implemented e security

BCA 602 - Cloud Computing

Course Outcomes – At the end of the course, student will be able to:

1. Student were able to : cloud computing
2. Students able to understand Architecture, Services and Applications:
3. Students able to understand Abstraction and Virtualization

BCA 603 - Android Application Development

Course Outcomes – At the end of the course, student will be able to:

1. Student were able Introduction to Mobile Computing and Android
2. Students able to understand Designing the user interface:
3. Students able to understand database issue

BCA 604 - Server Side Scripting using PHP

Course Outcomes – At the end of the course, student will be able to:

1. Student were able To Design dynamic and interactive Web pages.
2. Students able to understand Designing the user interface:
3. Students able to understand web technique

MMS Outcomes

1.1 Principles of Management

1. Describe the primary functions of management and the roles of managers.
2. Describe the work of major contributors to the field of management
3. Explain how managers align the planning process with company mission, vision, and values.
4. Student understand the organization the commination skill

1.2 Financial Accounting

1 To understand fundamental concepts of financial accounting.
2. To understand the basics of bank statement
3.To maintain and record financial transactions in books of accounts.
4. To understand tall packages
5. To prepare Cost Sheet and record the transactions of materials.

1.3 Web Designing and Web Authoring Tools

At the end of the course, student will be able to:
1. Acquainted with elements, Tags and basic structure of HTML files.
2 Up skills the knowledge of basic and advanced web designing.
3 Students were implement effective use of List and Tables.
4 Students were implement effective web page navigation.
5. Students were capable to design web page layout
6 Students were understood and implement use of style sheet.

1.4 ICT Fundamentals & Office Automation

At the end of the course, student will be able to:
1. student understands elements of ICT and operating system .
2 Up skills the knowledge of basic and advanced word processing.
3 Students were implement effective use spreadsheet
4 Students were implement effective PowerPoint Pretentions

1.5 Programming in C

1. After course completion the students will have the following learning outcomes:
2. Understanding a functional hierarchical code organization.
3. Ability to define and manage data structures based on problem subject domain.
4. Ability to work with textual information, characters and strings.
5. Ability to work with arrays of complex objects.
6. Understanding a concept of object thinking within the framework of functional model.
7. Understanding a concept of functional hierarchical code organization.
8. Understanding a defensive programming concept. Ability to handle possible errors during program execution.

2.1 Communication Skills

1. Understand and apply communication theory
2. Critically think about communication processes and messages
3. Write effectively for a variety of contexts and audiences
4. Interact skillfully and ethically
5. Develop and deliver professional presentations
6. Engage in scholarly inquiry and social scientific research
7. Recognize the effects of diversity, access, and power on communication

2.2 Management Information System

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Support the delivery, use, and management of information systems within an information systems environment.

2.3 System Analysis and Design

1. define the system development life cycle.
2. Conducts research on existing systems.
3. Develop plans for the new system.
4. make the feasibility study about the system.
5. Explore the technical risks involved in the system's and technical possibilities.
6. Scheduling with using GANTT and PERT techniques.
7. Evaluates the economic self-sufficiency whether to install the system.
8. carry out the system analysis.
9. Identifies problems in the system.
10. Determine the cause of the problem in the system.
11. Find a solution of the problem in the system.

2.4 RDBMS

1. have a broad understanding of database concepts and database management system software
2. have a high-level understanding of major DBMS components and their function
3. be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.
4. be able to write SQL commands to create tables and indexes, insert/update/delete data, and query data in a relational DBMS.
5. be able to program a data-intensive application using DBMS APIs.

2.5 Object Oriented Programming Using C++

1. Creating simple programs using classes and objects in C++.
2. Implement Object Oriented Programming Concepts in C++.
3. Develop applications using stream I/O and file I/O.
4. Implement simple graphical user interfaces.
5. Implement Object Oriented Programs using templates and exceptional handling concepts.

3.1 CRM and Digital Marketing

1 understand the customer relationship
2 understand the concepts of Customer Loyalty and Retention
3 student aware to the digital marketing

3.2 Cyber Security and IT Act

1. Analyze and evaluate the cyber security needs of an organization.
2. Conduct a cyber security risk assessment.
3. Measure the performance and troubleshoot cyber security systems.
4. Implement cyber security solutions.
5. Be able to use cyber security, information assurance, and cyber/computer forensics software/tools.
6. Identify the key cyber security vendors in the marketplace.
7. Design and develop a security architecture for an organization.
8. Design operational and strategic cyber security strategies and policies

3.3 Graphics and Animation

1. To familiarize the students with various approaches, methods and techniques of
2. Animation Technology.
3. To develop competencies and skills needed for becoming an effective Animator.
4. Mastering traditional & digital tools to produce stills and moving images.
5. Exploring different approaches in computer animation.
6. To enable students to manage Animation Projects from its Conceptual Stage to the final
7. Product creation.
8. To train students in applying laws of human motion and psychology in 2-D or 3-D
9. Characters.
10. To develop expertise in life-drawing and related techniques.
11. To apply Audio and Video Production Techniques to an Animation Project.

3.4 Web Scripting with PHP and MySQL

1. Use MySQL to create, update and delete tables from a database.
2. Create related tables and define keys.
3. Create both inner and outer joins of two or more tables.

4. Use PHP to create a data driven website.
5. Use PHP to read a file and add records to the database.
6. Create a form on a webpage and use PHP to check the validity of the form.
7. Use the data from the form to update the MySQL database.

3.5 C#.NET Programming

With the use of the C# language and Visual Studio, at the completion of this course the student should be able to:

1. Recognize, diagram, and implement introductory programming concepts using C#
2. Determine locgical alternatives with C# decision structures utilizing iteration, class methods, fields, and properties.
3. Assemble forms, classes, and controls into C# solutions utilizing arrays and file/database access methods

4.1 Human Resource Management

1. After successfully completing this program, you should be able to:
2. Effectively manage and plan key human resource functions within organizations
3. Examine current issues, trends, practices, and processes in HRM
4. Contribute to employee performance management and organizational effectiveness
5. Problem-solve human resource challenges
6. Develop employability skills for the Canadian workplace
7. Develop effective written and oral communication skills

4.2 E-Commerce and M-Commerce

1. Impart the students with higher level knowledge and understanding of contemporary trends
2. in e-commerce and business finance.
    a. To provide adequate knowledge and understanding about E-Com practices to the students.
    b. Learners will be able to recognize features and roles of businessmen, entrepreneur, managers,
3. consultant, which will help learners to possess knowledge and other soft skills and to react
4. aptly when confronted with critical decision making.

4.2 Internet Computing with ASP.NET

1. Upon the completion of the course students will be able to

a. Learners will be able to design web applications using ASP.NET
b. Learners will be able to use ASP.NET controls in web applications
c. Learners will be able to create database driven ASP.NET web applications and web services

4.4 Java Programming

Upon completion of the course students should be able to:

1. Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
2. Read and make elementary modifications to Java programs that solve real-world problems.
3. Validate input in a Java program.
4. Identify and fix defects and common security issues in code.
5. Document a Java program using Javadoc.
6. Use a version control system to track source code in a project.

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Principal
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