

Bachelor of Science – Information Technology B.Sc. (I.T.) (NEP 2020)

SEMESTER I

Subject Code	Subject Name	COs
1011111	Programming with C	<ol style="list-style-type: none">1. To understand the concepts of computer programming.2. To understand syntax and semantics of the C language3. To understand loops and decision making in programming.4. To understand the use of arrays, structures, union and pointers.5. To understand functions for modular code and handle errors.
1011112	Database Management Systems	<ol style="list-style-type: none">1. Define and describe the fundamental elements of relational database management systems.2. To relate the basic concepts of relational data model, entity-relationship model, relational database3. Design ER-models to represent simple database application scenarios.4. Understand the normalization and its role in the database design process5. Transform the ER-model to relational tables, populate relational database and formulate SQL6. Understand basic database storage structures and access techniques: file and page organizations, indexing methods and hashing.
1011113	Practical I (Programming with C & DBMS)	<ol style="list-style-type: none">1. Students can demonstrate the concepts of datatypes, variables and operators in C.

		<p>2. Students can implement the concept of control statements and looping in C programs.</p> <p>3. Students can demonstrate the use of arrays, strings and structures in C</p> <p>4. Students can implement modular C programs using functions and pointers.</p> <p>5. Students can demonstrate the use of arrays, strings and structures in C.</p> <p>6. Students are able to perform various operations such as insert, update, delete and retrieve data from a database using SQL queries.</p> <p>7. Students are able to perform alteration in tables and can restore and take backup of the database.</p> <p>8. Students are able to perform operations using simple SQL Queries to fetch data and learn various aggregate functions to get a single value.</p> <p>9. Students are able to perform SQL Queries using the JOIN keyword for joining two or more tables.</p> <p>10. Students are able to perform nested queries using existing operators.</p> <p>11. Students are able to create new tables by joining one or more tables and learn how to hide attributes from the end user.</p> <p>12. Students are able to restrict the user from accessing data in the database.</p> <p>13. Students should be able to create, manipulate the database management system to evaluate the business information problem.</p>
1171311	Introduction to Commerce (OE)	<p>1. Develop understanding about Commerce and Business</p> <p>2. Help understand the different forms of Business Organisations</p> <p>3. Help understand the Business Environment</p> <p>4. Understand the recent trends in Commerce</p>

1281311	Marketing Mix I	<ol style="list-style-type: none"> 1. The students will learn about the various elements of Marketing Mix 2. Understand the key concepts and components of product and price mix strategies 3. Analyze the factors influencing product development, pricing decisions, and brand positioning
1011411	Combinational and Sequential Design	<ol style="list-style-type: none"> 1. Students can explain the differences between combinational and sequential circuits, and identify their different applications. 2. Students can define the concept of Boolean algebra and its importance in digital circuit design. 3. Students can explain and apply the principles of K-map simplification and other design techniques. 4. Students can design and construct combinational circuits using Boolean algebra and K-maps. 5. Students can design and implement arithmetic circuits such as adders, subtractors, and multipliers. 6. Students can design and implement data path circuits such as registers, multiplexers, and decoders. 7. Students can implement digital circuits using breadboards, logic probes, and oscilloscopes. 8. Students can troubleshoot and verify the correctness of digital circuits using real-world hardware and measure their performance using various metrics.
1011412	Office Tools for Data Management	<ol style="list-style-type: none"> 1. Participants can explain normalization importance, identify table relationships, and justify database design choices. 2. Participants create well-structured MS Access databases with proper relationships, data types, and normalization.

		<p>3. Participants execute advanced queries in MS Access, retrieving specific information based on diverse criteria.</p> <p>4. Participants design intuitive MS Access forms, incorporating controls for an efficient and user-friendly data entry experience.</p> <p>5. Participants produce insightful MS Access reports, organizing and presenting data effectively for analysis.</p>
2511511	Introduction to Communication Skills	<p>Demonstrate an understanding of essential aspects of communication skills</p> <ul style="list-style-type: none"> * Exhibit the ability to Read a variety of written text using subskills such as skimming and scanning. * Identify and rectify common grammatical errors in English. * Show competence in delivering compelling presentations and engage in articulate and effective conversations in English across different contexts. * Display advanced formal writing skills in crafting job application letters, CVs, and Statements of Purpose.
2541516	Environmental Management & Sustainable Development -I	<ol style="list-style-type: none"> 1. Use principles of Environmental Science for explaining sustainable development and its related ethical concerns 2. Display scientific perspective for issues confronting our present day environment. 3. Analyze the national and global environmental issues relating air, water, soil, and land use, biodiversity, and pollution. 4. Explain the Role of an individual in relation to human population and environmental pollution.
2531511	Indian Knowledge System Series(Generic)-I	<ol style="list-style-type: none"> 1. Learner will understand and appreciate the rich Indian Knowledge Tradition 2. Lerner will understand the contribution of Indians in various fields

		<p>3. Lerner will experience increased subject-awareness and self-esteem</p> <p>4. Lerner will develop a comprehensive understanding of how all knowledge is ultimately intertwined.</p>
2521612	National Service Scheme	<p>1. The course will help students comprehend the foundations of the National Service Program.</p> <p>2. To understand the unique camping program.</p> <p>3. Students will learn about the regular activities of NSS.</p>
2521615	Introduction to Sports, Physical Literacy, health & Fitness & Yog	<p>1. The student will participate in various games, sports and physical activities and they will also learn the technical and tactical experience of it.</p> <p>2. Students will understand the importance and benefits of participation in any fitness activity or sports.</p> <p>3. Own choice based activities will be the stress buster for the students and this will inculcate healthy habits in the students</p> <p>4. Students will be able to organize, plan activities and will develop administrative qualities through these events</p> <p>5. Students acquire the knowledge of Physical Education, Sports and Yoga and understand the purpose and its development.</p> <p>6. The student learns to plan, organize and execute sports events.</p> <p>7. Student will learn theoretical and practical aspects of game of his choice to apply at various levels for teaching, learning and coaching purposes efficiently.</p> <p>8. Student acquires the knowledge of opted games, sports and yoga and also learns the technical and tactical experience of it.</p> <p>9. Student will learn to apply knowledge of Physical fitness and exercise management to lead a better quality life.</p>

		10. Students will understand and learn different dimensions of an active lifestyle.
2521616	Extension Work	<p>The Learners will be oriented to following activities and motivated to participate in:</p> <ol style="list-style-type: none"> 1. Seminar /conferences, discussion sessions, debate, rallies 2. Competitions (essay/creative writing, elocution, poster/ video/ rangoli making etc.- Minimum 2 competitions) 3. Extension Work group activities of other groups in the college. 4. Prepare your PPT, design your posters / charts. 5. Survey / short term academic courses / innovative programs.

SEMESTER 2

Subject Code	Subject Name	COs
1012111	OOps with C++	<ol style="list-style-type: none">1. Students can explain the key concept of OOP and their application in software development.2. Students can Design and implement classes and objects to model real world entities.3. Students can apply the concepts of polymorphism, virtual functions, inheritance and exception handling in program.4. Students can apply operator overloading, runtime polymorphism, generic Programming5. Students can implement file handling concepts in program
1012112	Web Designing	<ol style="list-style-type: none">1. Learners will be able to use the HTML programming language2. Learners will be able to execute web pages designed using HTML3. Describe the concepts of World Wide Web, and the requirements of effective web design4. List various tags in html and use these to create web page5 : Gain necessary skills for designing and developing web applications

1012113	Practical II	<ol style="list-style-type: none"> 1. Utilize C++ characteristics in software design and development. 2. Explain object-oriented techniques and explain how C++ supports them. 3. Employ C++ to demonstrate practical skill developing object-oriented solutions. 4. Examine a problem statements and design and develop object-oriented software using good coding practices and procedures. 5. Design static web pages using Hyper Text Markup Language (HTML). 6. Use their learned skills, knowledge and abilities to develop web sites 7. Collect information from the user with HTML Forms. 8. Enhance the look of web pages by implementing audio and video
1082211	Elementary statistics II	<ol style="list-style-type: none"> 1. To choose an appropriate correlation method to data and interpret correlation between two variables using scatter diagram, Karl Pearson's Product moment correlation coefficient, Spearman's Rank correlation coefficient. 2. To obtain a regression coefficient using least square method of estimation and apply method to real life problem. 3. Understand Nature of time series data and solve real life problems using

		freehand curve method, semi average method, moving average method, least square method, etc
	Introduction to Insurance	<ol style="list-style-type: none"> 1. Learn the terminologies related to insurance. 2. Learn various insurance products in the market. 3. Learners identify personal need and learn insurance planning.
1282311	Marketing Mix - II	<ol style="list-style-type: none"> 1. Students will understand thoroughly place and promotion as marketing mix variables so as to solve marketing problems. 2. Learners should apply and analyze place and promotion marketing mix skills in marketing manager. 3. Learners should evaluate and create marketing strategy with place and promotion as an important marketing
1012411	Assembly Language Programming	<ol style="list-style-type: none"> 1. Explain the architecture of the 8085 microprocessor and its associated instruction set. 2. Identify the different types of registers and their functions in the microprocessor. 3. Describe the memory organization and addressing modes of the 8085 microprocessor. 4. Write assembly language programs for the 8085 microprocessor using various instructions and addressing modes.

		<p>5. Debug and troubleshoot assembly language programs for the 8085 microprocessor using simulators and debuggers.</p> <p>6. Implement conditional branching and looping constructs in assembly language programs.</p> <p>7. Use 8085 assembly language programming tools, such as editors, assemblers, and emulators for developing and testing programs.</p> <p>8. Simulate microprocessor operations using emulators and debuggers.</p> <p>9. Connect input/output devices, such as LEDs, switches, and displays, to the 8085 microprocessor.</p>
1012413	PL/SQL	<p>1. Use PL/SQL variables ,data types, control and conditional statements.</p> <p>2. Apply sequences and cursors in PL/SQL.</p> <p>3. Work with Collection and Composite Data Types.</p> <p>4. Develop PL/SQL structures like functions, procedures and triggers for database applications.</p> <p>5. Handle errors and exceptions in PL/SQL programs. OC</p> <p>6. Develop PL/SQL packages.</p>
	French for hospitality	<p>-Understand basic french grammar and vocabulary</p> <p>-Learn and use vocabulary related to french cuisine and gastronomy</p>

		<p>-Acquire basic conversational skills and be able to greet french clients</p> <p>-Explore french culture and gastronomy</p>
2542511	Environmental Management & Sustainable Development -II	<ol style="list-style-type: none"> 1. Use principles of Environmental Science for explaining sustainable development and its related ethical concerns 2. Display scientific perspective for issues confronting our present day environment. 3. Analyze the national and global environmental issues relating air, water, soil, and land use, biodiversity, and pollution. 4. Explain the Role of an individual in relation to human population and environmental pollution. 5. Recognize the importance of collective efforts for environmental sustainability as reflected in various treaties, conventions and laws.
2522617	National Service Scheme	<ol style="list-style-type: none"> 1. The course will help students comprehend the foundations of the National Service Program. 2. To understand the unique camping program. 3. Students will learn about the regular activities of NSS.
2522620	Sports, Physical literacy, Health & Fitness & Yog	<ol style="list-style-type: none"> 1. The student will participate in various games, sports and physical activities

		<p>and they will also learn the technical and tactical experience of it.</p> <p>2. Students will understand the importance and benefits of participation in any fitness activity or sports.</p> <p>3. Own choice based activities will be the stress buster for the students and this will inculcate healthy habits in the students</p> <p>4. Students will be able to organize, plan activities and will develop administrative qualities through these events</p> <p>5. Students acquire the knowledge of Physical Education, Sports and Yoga and understand the purpose and its development.</p> <p>6. The student learns to plan, organize and execute sports events.</p> <p>7. Student will learn theoretical and practical aspects of game of his choice to apply at various levels for teaching, learning and coaching purposes efficiently.</p> <p>8. Student acquires the knowledge of opted games, sports and yoga and also learns the technical and tactical experience of it.</p> <p>9. Student will learn to apply knowledge of Physical fitness and exercise management to lead better quality life.</p>
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<p>2522621</p>	<p>Extension Work</p>	<ul style="list-style-type: none"> • To ensure equal access to quality education and educational opportunities to aspirants. • To support the government initiatives in achieving universal foundational literacy and numeracy as per sustainable development program. • To organize remedial programs to address the learning breaches among the youth and provide unending education opportunities. • To offer more holistic, multidisciplinary, and flexible curricular activities with an emphasis on conceptual understanding and personality development. • To offer a wide range of activities & promote critical thinking, creativity, and innovation. • To provide aspirants with multiple pathways for skill development and employment. • To implement outreach programs to disseminate knowledge, provide services, and support community development.

