DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

COURSE OUTCOME (R-20)

I Year I semester
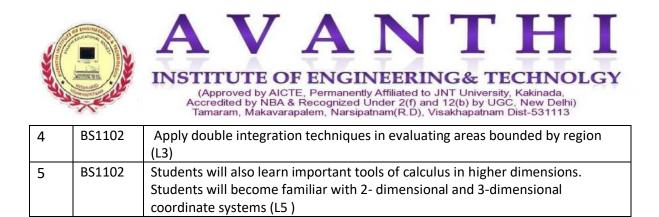
COMMUNICATIVE ENGLISH

At the end of the course student should be able to

Sno	Course code	CO Statement
1	BS1101	understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information
2	BS1101	ask and answer general questions on familiar topics and introduce oneself/others
3	BS1101	employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information
4	BS1101	recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs
5	BS1101	form sentences using proper grammatical structures and correct word forms

MATHEMATICS - I

At the end of the course student should be able to

Sno	Course code	CO Statement
1	BS1102	Utilize mean value theorems to real life problems (L3)
2	BS1102	Solve the differential equations related to various engineering fields (L3)
3	BS1102	Familiarize with functions of several variables which is useful in optimization (L3)

| 4 | BS1102 | Apply double integration techniques in evaluating areas bounded by region (L3) |
| 5 | BS1102 | Students will also learn important tools of calculus in higher dimensions. Students will become familiar with 2- dimensional and 3-dimensional coordinate systems (L5) |

APPLIED CHEMISTRY

At the end of the course student should be able to

Sno	Course code	CO Statement
1	BS1108	Utilize the theory of construction of electrodes, batteries and fuel cells in redesigning new engineering products and categorize the reasons for corrosion and study methods to control corrosion.

PROGRAMMING FOR PROBLEM SOLVING USING C

At the end of the course student should be able to

Sno	Course code	CO Statement
1	ES1101	To write algorithms and to draw flowcharts for solving problems
2	ES1101	To convert flowcharts/algorithms to C Programs, compile and debug programs
3	ES1101	To use different operators, data types and write programs that use two-way/ multi-way selection
4	ES1101	To select the best loop construct for a given problem
5	ES1101	To design and implement programs to analyze the different pointer applications
6	ES1101	To decompose a problem into functions and to develop modular reusable code
7	ES1101	To apply File I/O operations

ENGINEERING DRAWING

At the end of the course student should be able to

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Sno	Course code	CO Statement
1	ES1102	Gains Knowledge on various concepts of a C language.
2	ES1102	Able to draw flowcharts and write algorithms.
3	ES1102	Able design and development of C problem solving skills
4	ES1102	Able to design and develop modular programming skills.
5	ES1102	Able to trace and debug a program

ENGLISH COMMUNICATION SKILLS LABORATORY

At the end of the course student should be able to

Sno	Course code	CO Statement
1	LC	Exercises in Spoken English Part 1,2,3,4, OUP and CIEFL.
2	LC	English Pronunciation in use- Mark Hancock, Cambridge University Press.
3	LC	English Phonetics and Phonology-Peter Roach, Cambridge University Press.
4	LC	English Pronunciation in use- Mark Hewings, Cambridge University Press.
5	LC	English Pronunciation Dictionary- Daniel Jones, Cambridge University Press.
6	LC	English Phonetics for Indian Students- P. Bala Subramanian, Mac Millan Publications.

APPLIED CHEMISTRY LAB

At the end of the course student should be able to

Sno	Course code	CO Statement
1	LC	The students entering into the professional course have practically very little exposure to lab classes. The experiments introduce volumetric analysis; redox titrations with different indicators; EDTA titrations; then they are exposed to a few instrumental methods of chemical analysis. Thus at the end of the lab course, the student is exposed to different methods of chemical analysis and use of some commonly employed instruments. They thus acquire some experimental skills.

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PROGRAMMING FOR PROBLEM SOLVING USING C LAB

At the end of the course student should be able

Sno	Course code	CO Statement
1	LC	Gains Knowledge on various concepts of aClanguage.
2	LC	Able to draw flowcharts andwritealgorithms.
3	LC	Able design and development of C problemsolvingskills.
4	LC	Able to design and develop modularprogrammingskills.
5	LC	Able to trace and debugaprogram

I Year - II Semester

MATHEMATICS-II

At the end of the course student should be able to

Sno	Course code	CO Statement
1	BS	develop the use of matrix algebra techniques that is needed by engineers for practical applications (L6)
2	BS	solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel (L3)
3	BS	evaluate the approximate roots of polynomial and transcendental equations by different algorithms (L5)
4	BS	apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals (L3)
5	BS	apply numerical integral techniques to different Engineering problems (L3)
6	BS	apply different algorithms for approximating the solutions of ordinary differential equations with initial conditions to its analytical computations (L3)

APPLIED PHYSICS

At the end of the course student should be able to

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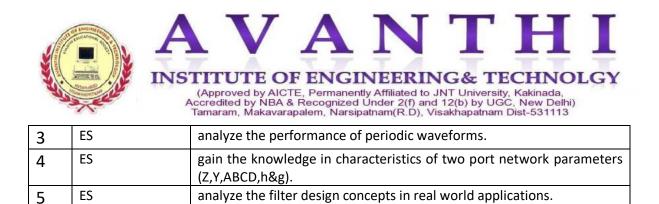| Sno	Course code	CO Statement
1	BS	Understand the basic concepts of LASER light Sources(L2)
2	BS	Apply the concepts to learn the types of lasers(L3)
3	BS	Identifies the Engineering applications of lasers(L2)
4	BS	Explain the working principle of optical fibers(L2)
5	BS	Classify optical fibers based on refractive index profile and mode of propagation(L2)
6	BS	Identify the applications of optical fibers in various fields(L2)

OBJECT ORIENTED PROGRAMMING THROUGH JAVA

At the end of the course student should be able to

Sno	Course code	CO Statement
1	ES	Show competence in the use of the Java programming language in the development of small to medium- sized application programs that demonstrate professionally acceptable coding and performancestandard
2	ES	Illustrate the basic principles of the object-orientedprogramming
3	ES	Demonstrate an introductory understanding ofgraphical user interfaces, multithreaded programming, and event-drivenprogramming.

NETWORK ANALYSIS

At the end of the course student should be able to

Sno	Course code	CO Statement
1	ES	gain the knowledge on basic network elements.
2	ES	will analyze the RLC circuits behaviour in detailed.

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3	ES	analyze the performance of periodic waveforms.
4	ES	gain the knowledge in characteristics of two port network parameters (Z,Y,ABCD,h&g).
5	ES	analyze the filter design concepts in real world applications.

BASIC ELECTRICAL ENGINEERING

At the end of the course student should be able to

Sno	Course code	CO Statement
1	PR1201	Use basic data structures such as arrays and linked list.
2	PR1201	Programs to demonstrate fundamental algorithmic problems including Tree Traversals, Graph traversals, and shortest paths.
3	PR1201	Use various searching and sorting algorithms.

BASIC ELECTRICAL ENGINEERING LAB

At the end of the course student should be able to

Sno	Course code	CO Statement
1	BSC	Determine and predetermine the performance of DC machines and transformers.
2	BSC	Control the DC shunt machines.
3	BSC	Compute the performance of1-phasetransformer.
4	BSC	Perform tests on 3-phase induction motor and alternator to determinetheirperformance characteristics.

ELECTRONIC WORKSHOP LAB

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At the end of the course student should be able to

Sno	Course code	CO Statement
1	LC	

APPLIED PHYSICS LAB

At the end of the course student should be able to

Sno	Course code	CO Statement
1	LC	

ENVIRONMENTAL SCIENCE

At the end of the course student should be able to

Sno	Course code	CO Statement
1	PCC-ME	The student will learn how to visualize 2D & 3D objects.

II Year-I Semester

ELECTRONIC DEVICES AND CIRCUITS

At the end of the course student should be able to

S.No	Course code	CO Statement
1	PCC	Applythebasicconceptsofsemiconductorphysics
2	PCC	Understandthe formationofp-njunctionandhowitcanbeusedasapnjunctionas

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		diodeindifferentmodes ofoperation.
3	PCC	Knowtheconstruction,workingprincipleofrectifierswithandwithoutfilterswi threlevant expressions andnecessarycomparisons.
4	PCC	Understandtheconstruction,principleofoperationoftransistors,BJTandFETwiththe irV-Icharacteristicsindifferentconfigurations.
5	PCC	Know the need of transistor biasing, various biasing techniques for BJT and FETandstabilization concepts with necessaryexpressions
6	PCC	PerformtheanalysisofsmallsignallowfrequencytransistoramplifiercircuitsusingBJ Tand FET indifferentconfigurations

SWITCHING THEORYAND LOGIC DESIGN

At the end of the course student should be able to

S.No	Course code	CO Statement
1	PCC	Classify different number systems and apply to generatevariouscodes.
2	PCC	Use the concept of Boolean algebra in minimization ofswitchingfunctions
3	PCC	Design different types of combinationallogiccircuits.
4	PCC	Apply knowledge of flip-flops in designing of Registersandcounters
5	PCC	The operation and design methodology for synchronous sequential circuitsand algorithmic statemachines.
6	PCC	Produce innovative designs by modifying the traditionaldesign techniques.

SIGNALS AND SYSTEMS

At the end of the course student should be able to

S.No	Course code	CO Statement
1	PCC	Differentiate the various classifications of signals and systems
2	PCC	Analyze the frequency domain representation of signals using Fourier concepts
3	PCC	Classify the systems based on their properties and determine the response ofLTISystems.
4	PCC	Know the sampling process and various types of sampling techniques.
5	PCC	Apply Laplace and z-transforms to analyze signals and Systems (continuous&discrete).

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RANDOM VARIABLES AND STOCHASTIC PROCESSES

At the end of the course student should be able to

S.No	Course code	CO Statement
1	PCC	Mathematically modelther and omphenomena and solve simple probabilistic problems.
2	PCC	Identify different types of random variables and compute statistical averages of the serandom variables.
3	PCC	Characterize the random processes in the time and frequency domains.
4	PCC	Analyze the LTI systems with random inputs.

MATHEMATICS-III

At the end of the course student should be able to

Sno	Course code	CO Statement
1	BSC	Interpret the physical meaning of different operators such as gradient, curland divergence (L5)
2	BSC	Estimate the work done against a field, circulation and fluxusing vector calculus (L5)
3	BSC	Apply the Laplace transform for solving differential equations (L3)
4	BSC	Find or compute the Fourier series of periodic signals (L3)
5	BSC	Knowandbeable to apply integral expressions for the forwards and inverse Fourier transform to arrange of non-periodic wave forms (L3)
6	BSC	Identify solution methods for partial differential equations that model physical processes (L3)

OOPS THROUGH JAVA LAB

At the end of the course student should be able to

Sno	Course code	CO Statement
1	CO1	Identify classes, objects, members of a class and the relationship amongthemneeded for aspecificproblem
2	CO2	Implementprogramstodistinguishdifferentformsofinheritance
3	CO3	Createpackagesandtoreusethem
4	CO4	DevelopprogramsusingExceptionHandlingmechanism
5	CO5	Developmultithreaded applicationusingsynchronizationconcept.
6	CO6	DesignGUIbased applicationsusingSwings andAWT

ELECTRONIC DEVICES AND CIRCUITS –LAB

At the end of the course student should be able to

Sno	Course code	CO Statement
1	PCC lab	

SWITCHING THEORYAND LOGIC DESIGN–LAB

At the end of the course student should be able to

Sno	Course code	CO Statement
1	PCC lab	

PYTHON LAB (SKILL ORIENTED COURSE)

At the end of the course student should be able to

Sno	Course code	CO Statement
1	CO1	Know comprehensions, generators in python.CO2: Know exception handling inpython
2	CO3	Know file I/O
3	CO4	Understand various data types like lists, tuples, strings etc

4	CO5	Know the usage of various pre-defined functions on the above data types

IIBTECH- II SEMESTER

ELECTRONIC CIRCUIT ANALYSIS

At the end of the course student should be able to

Sno	Course Code	Co statement
1	BSC/PC	Analyze a web page and identify its elements and attributes.
2	BSC/PC	Demonstrate the important HTML tags for designing static pages and separate design from content using Cascading Style sheet
3	BSC/PC	Implement MVC and responsive design to scale well across PC, tablet and Mobile phone
4	BSC/PC	Create web pages using HTML and Cascading Style Sheets.

DIGITAL IC DESIGN

At the end of the course the student able to

S.No	Course code	CO Statement
1	PCC	Understand the structure of commercially available digital integrated circuit families.
2	PCC	Learn the IEEE Standard 1076 Hardware Description Language (VHDL).
3	PCC	Model complex digital systems at several levels of abstractions, behavioral, structural, and rapid system prototyping.
4	PCC	Analyze and design basic digital circuits with combinatorial and sequential logic circuits using VHDL

ANALOG COMMUNICATIONS

At the end of the course student should be able to

S.No	Course code	CO Statement
1	PCC	Differentiate various Analog modulation and demodulation schemes and

		their spectral characteristics
2	PCC	Analyze noise characteristics of various analog modulation methods
3	PCC	Analyze various functional blocks of radiotransmitters and receivers
4	PCC	Design simple analog systems for various modulation techniques

LINEAR CONTROL SYSTEMS

At the end of the course student should be able to

S.No	Course code	CO Statement
1	ESC	This course introduces the concepts of feedback and its advantages to various control systems
2	ESC	The performance metrics to design the control system intime-domain and frequency domain are introduced
3	ESC	Control systems for various applications can be designed using time-domain and frequency domain analysis.
4	ESC	In addition to the conventional approach, the state space approach for the analysis of control systems is also introduced.

MANAGEMENT AND ORGANISATIONAL BEHAVIOUR

At the end of the course student should be able to

S.No	Course code	CO Statement
1	HSS	After completion of the Course the student will acquire the knowledge on management functions, global leadership and organizational structure.
2	HSS	Will familiarize with the concepts of functional management that is HR Mand Marketing of new product developments.
3	HSS	The learnerisable to think in strategically through contemporary management practices.
4	HSS	The learner can develop positive attitude through personality development and can equip with motivational theories.
5	HSS	The student can attain the group performance and grievance handling in managing the organizational culture.

SOFT SKILLS (SKILL ORIENTED COURSE)

At the end of the course student should be able to

S.No	Course code	CO Statement
1	Co1	Use language fluently, accurately and appropriately indebates and group discussions
2	Co2	Use their skills of listening comprehension to communicate effectively incross-cultural contexts.
3	Co3	Learn and use new vocabulary.
4	Co4	Write resumes, project reports and reviews.
5	Co5	5 Exhibit interview skills and develop soft skills.

ANALOG COMMUNICATIONS LAB

At the end of the course student should be able

S.No	Course code	CO Statement
1	PCC Lab	

Digital IC Design Lab

At the end of the course student should be able

S.No	Course code	CO Statement
1	PCC Lab	

ELECTRONIC CIRCUIT ANALYSIS LAB

At the end of the course student should be able

S.No	Course code	CO Statement
1	PCC Lab	Utilize SQL to execute queries for creating database and performing data manipulation operations
2	PCC Lab	Examine integrity constraints to build efficient databases

3	PCC Lab	Apply Queries using Advanced Concepts of SQL
4	PCC Lab	Build PL/SQL programs including stored procedures, functions, cursors and triggers

HOD   **PRINCIPAL**