KDK College of Engineering, Nagpur Faculty of Science and Technology
B. Tech. Ist Semester Electrical Engineering

Semester	Subject Code:	Name of Subject:
I	1BEE01T	Applied Mathematics-I

Course Outcomes	
After completion of course, the students will be able to	
1	Apply the concepts of matrix operations and inversion.
2	Determine Partial derivative of various functions and apply their concepts to Engineering problems.
3	Apply the concepts of Beta and Gamma functions to solve the problems.
4	Solve ordinary differential equations using elementary techniques and apply it to formulate mathematical models.
5	Use higher order differential equations to solve the problems in engineering field.

Semester	Subject Code:	Name of Subject:
I	1BEE02T	Applied Physics

Course Outcomes	
After completion of course, the student will be able to:-	
1	Develop elementary concepts of quantum mechanics and their applications.
2	Relate the structure of crystalline solids by applying knowledge of crystallography.
3	Categorize solids on the basis of band theory and study of semiconductor devices along with their applications.
4	Describe the quantum transitions and apply them to the working of lasers.

Semester	Subject Code:	Name of Subject:
I	1BEE02P	Applied Physics Lab

Course Outcomes	
After completing the practical course, students will be able to:-	
1	Create the basic circuitries in Electronics. Demonstrate and illustrate the basic principles of operation of semiconductor diodes and transistors.
2	Differentiate between the types of semiconductors through band gap experiment. Analyze the magnetic field-based experiment to distinguish the materials.
3	Apply the concept of diffraction for the optical based devices using LASER beam. Develop the concept of fiber optic cables to determine the numerical aperture of the fiber cables and to get acquainted with its use in daily life.
4	Examine the various electrical and electronics-based parameters viz. A.C. Voltage, frequency, and phase shift and time period using CRO.
5	Practice effectively as an individual and as a member of a team.

Semester I	Subject Code: 1BEE03T	Name of Subject: Fundamentals of Electrical Engineering
Course Outcomes		
After successful completion of course the students will be able to:		

1	Apply laws and principles to calculate the unknown quantities in electric circuits.
2	Calculate various Magnetic circuit parameters.
3	Draw phasor diagram and calculate electrical parameters for single phase AC circuit.
4	Explain three phase AC circuits and calculate various parameters.
5	Explain principle, construction, types and applications of 1 phase transformer.

Semester I	Subject Code: 1BEE04T	Name of Subject: Problem Solving using "C"
Course Outcomes		
After completion of syllabus, the student is able to		
1	Illustrate and explain the basic computer concepts and programming principles of C language.	
2	Develop C programs to solve simple mathematical, decision making problems and problems using looping constructs.	
3	Develop C programs to demonstrate the applications of derived data types such as arrays, pointers, strings and functions.	
4	Develop C programs to demonstrate the applications of derived data types such functions.	
5	Develop C programs to demonstrate the applications of File Handling.	

Semester I	Subject Code: 1BAE01T-A	Name of Subject: Professional communication
Course Outcomes		
After completion of course, the student will be able to:-		
1	Apply basic communication skill and correct grammar usage.	
2	Design formal written communication	
3	Prepare and illustrate their thoughts effectively through improving listening & speaking skills	
4	Use of oral communication skills in order to handle themselves effectively in interview and group discussion	

Semester I	Subject Code: 1BAE01T-B	Name of Subject: Business communication skills
Course Outcomes		
After completion of course, the student will be able to:-		
1	Demonstrate effective verbal and non-verbal communication skills in a business context.	
2	Explain professional written communication.	
3	Describe and demonstrate their thoughts effectively through improving listening & speaking skills.	
4	Develop and evaluate efficiently in team-based communication projects.	

Semester I	Subject Code: 1BAE01T-C	Name of Subject: English for Professional Aptitude

Course Outcomes	
After completion of course, the student will be able to:-	
1	Use communication skills in English, particularly in professional settings
2	Write the importance of effective communication in the professional world
3	Explain listening skills and their significance in professional settings
4	Prepare oral communication skills in order to handle themselves effectively in interview and group discussion

Semester I	Subject Code: 1BEE05P	Name of Subject: Electrical workshop-I

Course Outcomes	
After completing the practical course, students will be able to:-	
1	Choose electrical components/equipment for a particular application.
2	Identify electrical cables/wires and line joints
3	Measure the electrical quantities using different measuring instrument
4	Select different types of switches, sockets and plugs for different applications
5	build the various electrical wiring for different application

Semester II	Subject Code: 2BEE01T	Name of Subject: Applied Mathematics-II

Course Outcomes	
After completion of course, the student will be able to-	
1	Analyze statistical data using curve fitting techniques.
2	Evaluate integrals using concepts of scalar and vector point function.
3	Apply the various numerical methods to solve simultaneous equations.
4	Solve partial differential equations by various methods.
5	Use Laplace Transform techniques in engineering problems.

Semester II	Subject Code: 2BEE02T	Name of Subject: Applied Chemistry

Course Outcomes	
After completing the course, students will be able to:-	
1	Illustrate qualitative and quantitative aspects of water for industrial and domestic applications.
2	Identify the types of fuels and explain working of I.C. engines.
3	Apply concepts of electrochemistry for energy storage devices and corrosion.
4	Identify and describe different types of advanced engineering materials.
5	Apply the principles of green chemistry in designing alternative reaction methodologies and use of solid waste as energy source

Semester II	Subject Code: 2BEE02P	Name of Subject: Applied Chemistry Lab.

Course Outcomes

After completing the course, students will be able to:-	
1	Estimate the soluble impurities present in the given water sample.
2	Analyze a broad foundation in energy and environment that stresses scientific reasoning and analytical problem solving.
3	Point out & operate the different instruments used in chemistry laboratory.

emester II	**Subject Code: 2BEE03T**	**Name of Subject: Analog Devices and Circuits**

Course Outcomes	
After completion of Course, the students will be able to:-	
1	Explain different types of semiconductor devices, their operation and characteristics.
2	Illustrate the use of different transistor configurations as amplifiers circuits.
3	Demonstrate the use of transistor as power amplifier and oscillator.
4	Describe the working of Op-Amp
5	Use Op-Amps and linear ICs for different applications.

Semester II	**Subject Code: 2BEE03P**	**Name of Subject: Analog Devices and Circuits Lab**

Course Outcomes	
After completing the course, students will be able to	
1	Design and analyze the Half wave rectifier circuits, Full wave rectifier circuits using diodes
2	Demonstrate the use of Op-Amps for different applications.
3	Analyze the basics of IC 555 and LM741 IC

Semester II	**Subject Code: 2BEE04T**	**Name of Subject: Electrical Measurements & Instrumentation**

Course Outcomes	
After completing the course, students will be able to:-	
1	Explain types of measuring instruments.
2	Measure and calculate electrical quantities like power, energy etc.
3	Explain the use of instrument transformers for measurement of electrical quantities.
4	Select the suitable transducers for measurement of physical quantities.

Semester II	**Subject Code: 2BIK01T-A**	**Name of Subject: Indian Knowledge System**

Course Outcomes	
After completion of course, the student will be able to:-	
1	Illustrate the diverse dimensions of Indian knowledge traditions.
2	Analyze the contributions of ancient Indian scholars to different fields of knowledge.
3	Point out the interconnectedness of various branches of Indian knowledge.
4	Evaluate critically the relevance of Indian knowledge systems in modern society.

Semester: II	**Subject Code: 2BIK01T-B**	**Name of Subject: Consciousness Studies**

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

1	Identify and analyze the basics of Consciousness
2	Develop detailed knowledge about the Psychological Perspectives and neurological aspects of consciousness
3	Apply the various methods for studying the Consciousness level
4	Relate the role of consciousness in the society for better living

Semester	Subject Code:	Name of Subject:
II	2BIK01T-C	Preserving Art, Culture, and Tradition

Course Outcomes	
After completion of course, the student will be able to:-	
1	Identify the significance of preserving art, culture, and tradition.
2	Point out the relationship between art, culture, tradition, and identity& analyze different methods and approaches to preserve cultural heritage.
3	Illustrate *Policies, Challenges & Threats for* cultural & heritage preservation.
4	Examine the role of technology in preserving and promoting cultural heritage.

Semester	Subject Code:	Name of Subject:
II	2BIK01T-D	Wellness, Traditional Medicines, and Yoga

Course Outcomes	
After completion of course, the student will be able to:-	
1	Identify the concept of wellness and its importance in modern life.
2	Illustrate the principles and practices of traditional medicines from different cultures
3	Distinguish various yoga techniques and their benefits for physical and mental health and to analyze the scientific basis and evidence supporting traditional medicines and yoga.
4	Develop practical skills for incorporating wellness practices into daily life.

Semester	Subject Code:	Name of Subject:
II	2BIK01T-E	Glimpses of ancient Science and Technology

Course Outcomes	
After completion of course, the student will be able to:-	
1	Illustrate information about great mathematicians and to help students to trace, identify, practice, and develop the significant Indian mathematics
2	Develop the concept of motion and its application in Indian ancient physics literature.
3	Identify the concepts of basic chemical & metallurgical process of ancient and medieval India.
4	Analyze the scientific basis and evidence supporting traditional medicines and yoga.

Semester	Subject Code:	Name of Subject:
II	2BIK01T-F	Foundation Literature of Indian Civilization

Course Outcomes	
After completion of course, the student will be able to:-	
1	Identify the major literary texts of ancient and classical India.
2	Illustrate the historical and cultural contexts in which these texts were produced.
3	Analyze the themes, characters, and narrative techniques employed in Indian literary classics.
4	Examine the influence of these texts on Indian society and culture and To encourage critical thinking and interpretation of Indian literary heritage

Semester	Subject Code:	Name of Subject:
II	2BSE01P-A	Electrical workshop-II

Course Outcomes	
After completing the course, students will be able to:-	
1	Describe the layout of electrical substation.

2	Develop single line diagrams of electrical layouts of industries/offices/houses.
3	Apply I.E. rules and first aid in case of electrical hazards.

Semester II	Subject Code: 2BSE01P-B	Name of Subject: Industrial Visit & Report Writing

Semester II	Subject Code: 2BSE01P-C	Name of Subject: Electrical Drawing & Simulation

Course Outcomes	
After completing the course, students will be able to:-	
1	Demonstrate the different aspects of electrical engineering software like MATLAB, VISIO for the purpose of drawing and simulation.
2	Draw and simulate various electrical systems using different software.
3	Develop single line diagrams of electrical layouts of industries/offices/houses. Understand the basics of electric network. Understand the basics of electrical installations and there operations.

Semester I/II	Subject Code: 1BCC01P-A /2BCC01P-A	Name of Subject: Yoga/Sports Recreation

Course Outcomes	
After completing the course, students will be able to	
1	Illustrate the fundamental techniques, underlying principles, and standard practices of both sports and yoga.
2	Collect practical experience in applying the principles of general and targeted physical conditioning exercises and yoga.
3	Enhance health-related fitness levels and achieve harmony between body and mind through participation in a variety of fitness activities, sports, recreational games, and yoga.
4	Practice Healthy & active living with reducing Sedentary Life style.

Semester I/ II	Subject Code: 1BCC01P-B /2BCC01P-B	Name of Subject: Fundamentals of Indian Classical Dance- Kathak

Course Outcomes	
After completing the course, students will be able to:-	
1	Illustrate the historical and cultural context of Kathak, including its origins, development, and significance within the Indian classical dance tradition.
2	Illustrate the fundamental techniques and movements of Kathak, including footwork (tatkar), hand gestures (mudras), body postures (bhangas), and facial expressions (abhinaya).
3	Apply theoretical knowledge to practical performance, effectively interpreting Kathak compositions and expressing emotions through rhythmic sequences and storytelling elements.
4	Develop physical fitness, coordination, and gracefulness through regular practice and refinement of Kathak repertoire, fostering a deeper connection with the art form and its artistic expression.

Semester I/II	Subject Code: 1BCC01P-C /2BCC01P-C	Name of Subject: Music

Course Outcomes
After completing the course, students will be able to:-

1	Identify various Raags of music and differentiate between the classical music and the light music.
2	Operate various instruments of music.
3	Differentiate between the various musical instruments
4	Use music in therapy.

Semester	Subject Code:	Name of Subject:
I/II	1BCC01P-D /2BCC01P-D	Chess

Course Outcomes

After completing the course, students will be able to:-

1	Develop problem solving skills and memory Improvement.
2	Work under tense situations and pressure.

Semester	Subject Code:	Name of Subject:
I/II	1BCC01P-E /2BCC01P-E	Introduction to Foreign Languages and Culture- Japanese /Spanish /German

Course Outcomes

After completing the course, students will be able to:-

1	Develop ability to use vocabulary required for everyday conversations of basic level communication in Japanese language.
2	Demonstrate basic knowledge about Spain language and develop ability to use simple language structures in everyday communication, write in basic Spanish about themselves and others.
3	Use basic knowledge about German language to develop ability of reading and writing German conversations related to simple day-to-day situations.
4	Identify Japanese culture, Spanish culture and German culture to meet the needs of growing industry.

Semester	Subject Code:	Name of Subject:
I/II	1BCC01P-F /2BCC01P-F	Basics of Vedic Math

Course Outcomes

After completing the course, students will be able to

1	Compute simple arithmetic calculations with speed and accuracy.
2	Generate tables of any number
3	Solve products of large numbers quickly
4	Solve difficult calculations like square roots and cube roots of integers speedily.

Semester	Subject Code:	Name of Subject:
I/II	1BCC01P-G /2BCC01P-G	Self- defense Essentials and Basics

Course Outcomes

After completing the course, students will be able to

1	Develop strength, coordination, and balance.
2	Develop advance student's growth and conditioning toward lifelong fitness. assaults in everyday situations
3	Use protection skills against threat,

4	Prepare to work in civil defence, security services in public and private/corporate sectors and government establishment etc.

Semester: I/ II	Subject Code: 1BCC01P-H /2BCC01P-H	Name of Subject: Basket Ball

Course Outcomes	
After completing the course, students will be able to:-	
1	Demonstrate basic basketball rules, terminology, and safety concerns
2	Demonstrate the ability to perform individual offensive and defensive skills and strategies.
3	Demonstrate the ability to perform team offensive and defensive skills and strategies.
4	Demonstrate an understanding of health-related fitness components: muscular strength, muscular endurance, and stress management

Semester I/ II	Subject Code: 1BCC01P-I /2BCC01P-I	Name of Subject: Athletics

Course Outcomes	
After completing the course, students will be able to:-	
1	Demonstrate attitudes, behaviors, and practices that support personal well-being and life-long learning.
2	Apply discipline and commitment developed in practice and competition to academic achievement.
3	Demonstrate traits of good sportsmanship and teamwork in both competition and practice.
4	Demonstrate an expert knowledge of the strategies and skills of the athletics and use critical thinking skills to apply this knowledge in competitive situations.

Semester I/II	Subject Code: 1BCC01P-J /2BCC01P-J	Name of Subject: Painting

Course Outcomes	
After completing the course, students will be able to:-	
1	Recognize the symbolic and narrative possibilities inherent in painting and drawing
2	Identify a variety of historical and contemporary approaches to representational drawing.
3	Apply variety of techniques and different methods of painting.
4	Demonstrate basic concept of Art, its meaning, definitions, and basic elements of visual Art.