



GEMS POLYTECHNIC COLLEGE

(Approved by AICTE, Govt. of India, F. No Northern/2015/1-2474317051)

NH-2, Jogiya more, Ratanpura, Aurangabad, Bihar– 824121

TABLE 3.1.1 Course Outcomes (CO)

The students will be able to

Course Name	Basic Engineering Mathematics	Course Year	2024 - 2025	Semester	1
C101.1	Solve the systems of equations of matrices & Vector algebra				
C101.2	Solve the simple problems on functions, limits, continuity function and derivatives.				
C101.3	Solve the problems & applications on differential calculus.				
C101.4	Use the concept of Coordinate geometry to solve the problems.				
C101.5	Use the concepts of probability and solve the problems.				

Course Name	Applied Chemistry -A	Course Year	2024 - 2025	Semester	1
C102.1	Solve various engineering problems applying the basic concepts of atomic structure, chemical bonding, and solutions.				
C102.2	Use relevant water treatment techniques to solve domestic and industrial problems.				
C102.3	Solve engineering problems using concepts of engineering materials and properties				
C102.4	Use relevant fuels and lubricants for domestic and industrial applications.				
C102.5	Solve engineering problems using the concepts of electrochemistry and corrosion.				

Course Name	Python Programming	Course Year	2024 - 2025	Semester	1
C103.1	Use various data types and operators in formation of expressions.				
C103.2	Write and execute programs using control statements.				
C103.3	Perform relevant operations on Sequence data types.				
C103.4	Create functions in modules.				
C103.5	Use object-oriented approach and features in writing python programs.				
C103.6	Handle data files and exceptions.				

Course Name	Communication Skills (English)	Course Year	2024 - 2025	Semester	1
C104.1	Communicate contextually in different situations.				
C104.2	Use Verbal Communication Effectively				
C104.3	Deploy Non-Verbal Communication Contextually.				
C104.4	Write various texts using vocabulary and correct grammar.				
C104.5	Draft effective business correspondence with brevity and clarity.				

Course Name	Engineering Drawing	Course Year	2024 - 2025	Semester	1
C105.1	Use drawing instruments, drawing codes, dimensioning, conventions and symbols as per IS SP46(2003) in engineering drawing.				
C105.2	Draw geometrical figures, curves and engineering scales.				
C105.3	Draw the orthographic projection of points, lines and planes under different conditions.				
C105.4	Draw isometric views of components directly or from orthographic projections.				
C105.5	Draw free hand sketches of engineering elements, their orthographic and isometric views.				
C105.6	Draw development of lateral surfaces of primitive solids.				
C105.7	Draw free hand sketches of engineering elements, their orthographic and isometric views.				

Course Name	Environmental Education and Sustainable Development	Course Year	2024 - 2025	Semester	1
C106.1	Explain the importance of ecosystem for the protection of environment				
C106.2	Use relevant air & water pollution control methods to solve pollution related issues				

C106.3	Recognize relevant energy sources required for domestic & industrial application
C106.4	Analyze the issues of climate change and its impact on sustainability
C106.5	Apply engineering solutions/methods/legislations to reduce the activities that are harming the environment.

Course Name	Applied Physics-A	Course Year	2024 - 2025	Semester	2
C107.1	Estimate the errors in measurements of physical quantity with precision.				
C107.2	Apply the concepts and principles of rotational motion in various civil and mechanical engineering problems.				
C107.3	Select relevant materials for industrial applications based on its physical and thermal properties.				
C107.4	Apply the concept of waves for various engineering applications involving wave dynamics				
C107.5	Apply the basic concepts of modern physics for solving engineering problems.				

Course Name	Fundamentals of Electrical & Electronic Engg.	Course Year	2024 - 2025	Semester	2
C108.1	Apply basic concepts of electricity to determine various electric parameters in a given electrical system..				
C108.2	Apply the fundamental laws and concepts of DC and AC circuits to a given electrical system.				
C108.3	Apply the principles of magnetism and electromagnetism to a given equipment.				
C108.4	Test the functionality of a given basic electronic component.				
C108.5	Use Boolean expressions and number systems to realize the basic logic circuits.				

Course Name	Engg. Mechanics	Course Year	2024 - 2025	Semester	2
C109.1	Compute the force to solve the problems				
C109.2	Analyse various analytical and graphical conditions required for equilibrium of engineering system				
C109.3	Apply the principles of friction in various conditions to solve problems.				
C109.4	Calculate centroid, center of gravity and moment of Inertia of different geometrical shapes.				
C109.5	Select the relevant lifting machine(s) for the given purposes.				

Course Name	Applied Mathematics -A	Course Year	2024 - 2025	Semester	2
C110.1	Demonstrate the ability to solve engineering-related problems based on applications of integration.				
C110.2	Develop the ability to use differential equations as a tool to solve problems related to engineering.				
C110.3	Select a suitable method to solve nonlinear equations based on engineering applications.				
C110.4	Measure the area and volume of engineering-related problems using the concept of numerical integration.				
C110.5	Develop the ability to use probability distribution to solve broad-based engineering-related problems.				

Course Name	Mechanical Workshop	Course Year	2024 - 2025	Semester	2
C111.1	Undertake wood working operations economically and safely.				
C111.2	Carryout fitting and turning operations properly in a given situation.				
C111.3	Perform various joining operations using welding, brazing, and soldering methods.				
C111.4	Perform various sheet metal operations as per given sketch/ drawing.				
C111.5	Undertake black smithy operations safely.				

Course Name	ICT Tools	Course Year	2024 - 2025	Semester	2
C112.1	Prepare business document using word processing tool.				
C112.2	Manipulate data and represent it graphically using spreadsheet.				
C112.3	Prepare professional slide-based presentations.				
C112.4	Work effectively with Internet and basic web services				

Course Name	Sports, Yoga and Meditation	Course Year	2024 - 2025	Semester	2
C113.1	Select appropriate physical activities to maintain healthy lifestyle.				
C113.2	Apply basic principles and practices of Yoga and meditation for overall growth & development.				

C113.3	Use fitness and wellness techniques for optimal health and wellbeing
C113.4	Apply ancient Indian ayurvedic methods and techniques, exercises, yoga and meditation for fitness and wellness.

Course Name	Open Educational Resources (OER)	Course Year	2024 - 2025	Semester	2
C114.1	Use Open Educational Resources (OER) after their evaluation				
C114.2	Use copyright material appropriately.				
C114.3	Implement suitable Creative Common License.				