



Course Outcomes

SY B Tech – Sem I (2022 Pattern)

Subject 1: Applied Mathematics-III (RB222001)

At the end of this course, Students will be able to

CO RB222001.1 Identify nature of vector field, understand basic concept of L.D.E., Fourier Series, Fourier Transform, Laplace transform

CORB222001.2 Calculate Laplace transform, Fourier Series, Fourier Transform, Directional Derivative, Line Integral and solve L.D.E. using different Methods. Develop & Solve mass spring system, P.D.E. & Evaluate Surface, Volume Integral.

CORB222001.3 APPLY Integral transform techniques such as Laplace transform and Fourier transform to solve differential equations involved in vibration theory, heat transfer and related mechanical engineering applications

CORB222001.4 APPLY Statistical methods like correlation, regression in analyzing and interpreting experimental data applicable to reliability engineering and probability theory in testing and quality control.

CORB222001.5 Apply Concept of Differential equations, Vector Calculus, Statistics and Probability to various applications including real life problem

Subject 2: Manufacturing Technology (RB222002)

At the end of this course, Students will be able to

CORB222002.1 Classify various casting processes

CORB222002.2 Describe various forming processes

CORB222002.3 Classify various metal joining processes

CORB222002.4 Explain various machining processes.

CORB222002.5 Apply robotics in manufacturing

Subject 3: Electrical and Electronics System (RB222003)

At the end of this course, Students will be able to

CORB222003.1 Describe basics of electronic components with identification and testing

CORB222003.2 Recognize small electronic systems and their applications

CORB222003.3 Identify role of different electrical and electronic components in robotics

CORB222003.4 Demonstrate applications of electrical machines

CORB222003.5 Apply basics of electronics and electrical systems in robotics and Automation.



Subject 4: Computer Graphics for Robotics (RB222004)

At the end of this course, Students will be able to

- CORB222004.1** Describe the basics of different graphics systems and analytic geometry.
- CORB222004.2** Use of geometric transformations on graphics objects and their application in robot kinematics analysis.
- CORB222004.3** Demonstrate the application of Bezier curves and interpolation in robot path planning
- CORB222004.4** Apply concept of geometric algebra for modelling in robotic physics

Subject 5: Robot Path Planning (RB222005)

At the end of this course, Students will be able to

- CORB222005.1** Formulate robot motion planning problems.
- CORB222005.2** Apply algorithms for Roadmap methods.
- CORB222005.3** Use Cell decomposition for critical path planning
- CORB222005.4** Generate joint trajectory for path planning using robot dynamics
- CORB222005.5** Analyse multiple moving objects

Subject 6: Universal Human Values (UHV-2) (RB222006)

At the end of this course, Students will be able to

- CORB222006.1** Recognize the significance of value inputs in formal education and Its applications.
- CORB222006.2** Apply the understanding of ethical conduct to formulate the Strategy for ethical life and profession
- CORB222006.3** Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.
- CORB222006.4** Analyze the value of harmonious relationship based on trust and respect in their life and profession
- CORB222006.5** Examine the role of a human being in ensuring harmony in society and nature.

Subject 7: Manufacturing Technology Lab (RB222007)

At the end of this course, Students will be able to

- CO RB222007.1** Classify various casting processes.
- CO RB222007.2** Describe various forming processes
- CO RB222007.3** Classify various metal joining processes
- CO RB222007.4** Explain various machining processes.
- CO RB222007.5** Apply robots in manufacturing

Subject 8 : Electrical and Electronics Systems Lab (RB222008)

At the end of this course, Students will be able to

- CO RB222008.1** Describe of basic electronics components with identification and testing
- CO RB222008.2** Recognize small electronics systems and their applications
- CO RB222008.3** Identify role of different electrical and electronics components in robotics
- CO RB222008.4** Demonstrate applications of electrical machines
- CO RB222008.5** Use basic electronics and electrical in robotics and Automation systems.

Subject 9: Computer Graphics for Robotics Lab (RB222009)

At the end of this course, Students will be able to



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- CO RB222009.1** Describe the basics of different graphics systems and analytic geometry
CORB222009.2 Use of geometric transformations on graphics objects and their application in robot kinematics analysis.
CORB222009.3 Demonstrate the application of Bezier curves and interpolation in robot path planning
CORB222009.4 Apply concept of geometric algebra for modelling in roboticphysics

Subject 10: Basic Robotics Workshop (RB222010)

At the end of this course, Students will be able to

- CORB222010.1** Identify various electronics and mechanical components used in robotics systems.
CO RB222010.2 Demonstrate PCB design and manufacturing for simple circuits
CORB222010.3 Execute PLC circuit for simple applications
CORB222010.4 Configure ARDUINO and Raspberry Pi kits for givenapplications.