B. Sc. (Honours) Major in Mathematics, NEP-2020

Programme Specific Outcome (PSO)

After the end of the program UG in mathematics, student should able to:

• Have a wide area in mathematics an affection of how its different type of disciplines are related, ability to use techniques from different areas, and an in depth knowledge about topics chosen from those offered through the department.

• By using numerical, graphical and symbolic representation, mathematical ideas would be communicated.

• Form independent verdict and analysis, test, and explain technical arguments.

• Solved complex problem by identifying the difficult portion convert into the easy sub problems.

• Construct abstract models using appropriate mathematical and statistical tools.

• Collect and organize the qualitative and quantitative information such as related problems, example and counter example.

• To improve the performance in general mathematical skill for the Student who don't have any interest for higher studies and also improve the higher mathematics for competitive exam like IIT-JAM, NBHM, TIFR, ISI, CMI, NET, GATE etc.

COURSE OUTCOME (CO)

Course Code: MTMHMJ101
Course Title: Calculus, Geometry and Differential Equation
Outcomes:
• Students will learn about the hyperbolic function, concavity, inflection points, asymptotes, L'Hospital's rule and its application.
• Students will be able to differentiate the function successively and integrate the function using reduction formula.
• Students will learn how to draw graph of various type of curve.
• Students will learn how to classify the conic.
• Students will learn about the equation of conic in polar co-ordinate system and different type of properties.
• Student will have clear concepts about the conicoids and how to classify different conicoids.
• Students will know how to form differential equation from a family of curve and also how to solve a differential equation and many applications of differential equation.

Course Code: MATSEC01
Course Title: MATLAB-1
Outcomes:
• Student will know about the program and why it is used for?
• They will know about MATLAB interface, data type, variables, flow control statements, arrays, indexing and operations.
• Students will have clear concepts about Matrix creating, indexing, operations, Input and Output function, Mathematical library function, user defined function, anonymous function.
• They will know about how to plot two-dimensional graph and three-dimensional graph.
• After the theoretical studied students will learn how to write a program and run it.

- Students will easily write the program in MATLAB for sum, product, max, min of list of array, in a sub array without library function.
- They will learn the program for sub-matrix for the given matrix, column sum, product, max, min of the given matrix without using library function.
- They will learn how to write a function and how they can find valu of that function for a table of values.
- Students will be able to do the draw the graph of $e^{ax+b}, \log(ax + b), \sin(ax + b), \cos(ax + b), |ax + b|, \log\left(\frac{1}{ax+b}\right)$ for different values of a and b.
- They will become proficient to draw graph of polynomial of degree 4 and 5, derivative graph, second derivative graph and comparing them.
- Students will know about how to sketch a parametric curves, how to tracing a conic in Cartesian and polar co-ordinate system . how to plot ellipsoid, hyperboloid of one and two sheet, elliptic cone, elliptic, paraboliod and hyperboloid using Cartesian co-ordinates