Course Content & Grade

Branch	Subject Title	Subject Code	Grade for End Sem		CGPA at the end of every even semester
B.TECH. Common	Mathematics - II	BT- 2002	Theory	Practical	
			Min."D"	Min."D"	5.0

COURSE OBJECTIVE:
The objective of this foundational course is to review mathematical concepts already learnt in higher secondary. This course deep understanding of matrix, differential equations as well as a strong sense of how useful the subject can BT in other disciplines of learning.

COURSE CONTENT:
Matrices & Linear Systems: Rank of a Matrix (By reducing it to Elementary Transformation, Echelon & Normal Forms), Solution of Simultaneous equations by Elementary Transformation Methods, Consistency
& Inconsistency of Equations, Eigen Values & Eigen Vectors, Cayley- Hamilton Theorem..

Ordinary Differential Equations-I: First-order differential equations (Separable, Exact, Homogeneous, Linear), Linear differential Equations with constant coefficients.

Ordinary Differential Equations-II: Homogeneous linear differential equations, Simultaneous linear differential equations. Second-Order Linear Differential Equations with Variable Coefficients: Solution by Method of Undetermined Coefficients, ByS Known Integral, Removal of First Derivative, Change of Independent Variable and Variation of Parameters.

Partial Differential Equations-I: Definition, Formulation, Solution of PDE (By Direct Integration Method & Lagranges Method), Non-Linear Partial Differential Equation of First order {Standard I, II, III & IV), Charpit's General Method of Solution Partial Differential equations.

Partial Differential Equations-II: Partial Differential Equations with Constant Coefficients (Second and Higher Orders Homogeneous and Non- Homogeneous equations), Partial differential Equations Reducible to equations with constant coefficients, The Method of Separation of Variables.

COURSE OUTCOMES
The curriculum of the Department is designed to satisfy the diverse needs of students. Coursework is designed to provide students the opportunity to learn key concepts of matrix, differential equations and their applications.

EVALUATION
Evaluation will BT continuous an integral part of the class as well through external assessment.

REFERENCES

1. Dean G. Duffy, Advanced Engineering Mathematics with MATLAB, CRC Press, 2013.
2. E. Kreyszig, Advanced Engineering Mathematics, John Wiley & Sons Inc.
3. Michael GreenBTrg, Advanced Engineering Mathematics, Second Edition, Pearson Education, 2002 (Indian Edition).
4. B.V. Rammana, Higher Engineering Mathematics, Tata McGraw Hill Publishing Company, 2007. Shanti Narayan, A Course of Mathematical Analysis. S. Chand & Co. Delhi.
5. Marwaha, Introduction to Linear Algebra, PHI Learning.