

Mathematics 228 -Mathematics III

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Location:

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Course URL: www.u.tt/ict

Learning Outcome: To solve mathematical problems by calculus and other classical analytical methods.

Prerequisites: Math 110, Math 119.

Number of Credits: 8

Assessment

3 Course work evaluations 45%

3 hour written comprehensive final exam 55%

Required Text

- Engineering Mathematics by K. A. Stroud, 5th Edition, Palgrave, 2001

List of Topics

Topic	Time needed (hrs)
Differential Equations	
• First and Second Order (Introductory)	2
• General and Particular Solutions	2
• Separation of Variables	8
• Integrating Combinations	8
• Linear Differential Equations of the First Order	10
• Applications	8
• Higher Order Homogenous/Nonhomogeneous Equations	
- Second Order with Constant Coefficients	8
• Auxiliary Equations with Complex Roots	9
• Solutions of Non-homogenous Equations	10
• Applications of Higher-Order Equations	8
• Laplace Transforms	
- Improper Integral	3
- Linearity Property	3
- Inverse Transforms	4
- Solving Differential Equations by Laplace Transforms	6
- Convolution Property	4
- Systems of Equations	4
• Solution by Numerical Methods	
- Euler Method	3
- The Runge-Kutta Method	3
- Taylor Series	3
- Fourier Series	3
Total	111