School of Mathematics

Course 1E1 – Engineering Mathematics 1 (JF Engineers & JF MSISS & JF MEMS)

Lecturer: Dr. Jonathan Bennett, Dr. Dmitri Zaitsev

Requirements/prerequisites: None

Duration: 24 weeks

Number of lectures per week: 3, including 1 tutorial

Assessment: Weekly homework, exams after each term (see below for grading)

End-of-year Examination: Yes (3 hour)

Description: (First 8 chapters of textbook)

- Limits and Continuity
- Derivatives
- Applications of Derivatives
- Integration
- Applications of Integration (Volumes by slicing, volumes of solids of revolution, volumes by cylindrical shells, lengths of plane curves, of parametric arcs, moments and centers of mass of thin rods)
- Transcendental Functions (Logarithms, exponential functions, inverse trigonometric functions, hyperbolic and inverse hyperbolic functions)
- Techniques of Integration
- Infinite Series

Problems sheets and their solutions can (or will) be found at

http://www.maths.tcd.ie/~zaitsev/1E1.html.

Textbooks:

Thomas' Calculus (10th edition), Addison Wesley Longman 2001(!).

Grading:

| Homework | 10% | | | |
|-----------------|-----|------------------------------|------------|-------|
| Michaelmas Exam | 20% | OP (whatever is the maximum) | Final Evam | 10007 |
| Hilary Exam | 20% | OR (whatever is the maximum) | ғша схаш | 10070 |
| Final Exam | 50% | | | |
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March 5, 2003

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