School of Mathematics

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

2002-03

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% OR (whatever is the maximum) Final Exam 100%
Hilary Exam 20%
Final Exam 50%

March 5, 2003