UNIVERSITY OF CANTERBURY - COLLEGE OF ENGINEERING

DEPARTMENT OF MATHEMATICS AND STATISTICS

MATH282-10SU1

Introduction to Scientific Computation

COURSE SYLLABUS – SUMMER 2010

The course will be taught around the book by Chapman.

MATLAB: Programming for Engineers

by **Stephen J. Chapman,**

published by **Brookes/Cole - 4th ed 2008/3rd ed 2004.**

COURSE STARTS: Wednesday 7 January 2009 – enrol by 6 January

Lab 1 - 6 January	**Chapter 1: The MATLAB environment; mathematical expressions in MATLAB; M-files, DIARY files.**
Lab 2 - 8 January	**Introduction to arrays and simple plotting, Chapter 2.**
Lab 3 - 11 January	**IEEE Floating Point Arithmetic and Errors of Computation**
Lab 4 - 13 January	**A lab devoted to MATLAB and matrix algebra, Chapter 2**
Lab 5 - 15 January	**Branching Statements and Program Design, Chapter 3 Introduction to Loops;**
Lab 6 - 18 January	**incorporating more Branching, Chapter 4 More Loops and Program Design, Chapter 4.**
Lab 7 - 20 January	**Function Functions, Chapter 5**
Lab 8 - 22 January	**User Defined Functions - Introduction Chapter 5.**
Lab 9 - 25 January	**User Defined Functions - Advanced Chapter 5**
Lab 10 - 27 January	**Advanced Plotting: 2- and 3-D Plots, Chapter 6.**
Lab 11 - 29 January	**Surface Plotting, Chapter 6.**
Lab 12 - 1 February	**Written Test and Lab Test**

LAB SESSIONS END ON MONDAY 1 FEBRUARY

Project - due 9 February	**Last date for Project and any other outstanding work**

This is a basic guide - individual topics are utilised as required. For example strings from section 6.2 will be utilised throughout, and a comprehensive description of Formatted I/O Functions is given in section 8.6 since the fprintf command will be used throughout the course.