**MAT001**MATHEMATICAL SCIENCES

**Scheme**

Undergraduate

**Department**

Comp. Eng. & Tech (D)

**Level**

Level 0

**Tutor**

SUSAN E. PATIENCE

**Credits**

10

**Module Board**

Mathematics

**Description**

MODULE DESCRIPTOR   
  
  
TITLE: Mathematical studies  
CODE: MAT001  
CREDITS: 10  
LEVEL: 0  
FACULTY: FAS  
MODULE BOARD: Level Zero  
PRE-REQUISITES: None  
CO-REQUISITES: None  
LEARNING HOURS: 100 of which 36 are contact hours  
  
AIMS:  
To develop a student?s knowledge and understanding of mathematics, and self confidence in doing mathematics, to a level commensurate with entry to higher education.  
  
LEARNING OUTCOMES:  
AFTER COMPLETION OF THIS MODULE, THE STUDENT WILL BE ABLE TO DEMONSTRATE:-  
  
Knowledge:  
  
K1. Basic numeracy, including powers, roots, fractions, percentages, standard form, areas and volume, ratio and proportion.  
K2. Basic algebraic manipulation, including simplification and factorisation.  
K3. The techniques used to solve simple equations including simultaneous equations.  
  
Skills:  
  
S1. Solve simple mathematical problems based on handling numbers and elementary algebraic techniques.  
S2. Use a scientific calculator to do arithmetic calculations such as those associated quadratic equations.  
  
CONTENT SYNOPSIS  
  
Basic numeracy; To include fractions, decimals, powers, roots, the rules of arithmetic, standard form. Area and volume of common shapes. Simple ratios and proportion. Simple algebra and the associated manipulation, changing the subject of the formula, algebraic fractions, the mathematical representation of simple problems and the solution techniques of the associated equations. The solution of linear, quadratic and simultaneous equations.  
  
  
TEACHING AND LEARNING METHODS  
  
The teaching and learning methods used will be varied and will allow for independent learning as well as developing group dynamics. The strategies will allow flexibility in learning which is considered crucial considering the varied mathematical backgrounds of the students, and the range of courses which are to be studied at higher levels. The strategies adopted will vary and will include some if not all of the following: investigation, group work, discussion, co-operative working, role playing, independent learning, simulation, problem solving, brainstorming, and tutorials.  
Lectures/tutorials: 36 hours  
Self-study: 64 hours  
  
  
TEACHING AND LEARNING METHODS:  
  
Scheduled activities Independent study Placement Total hours  
Hours Detail Hours Detail Hours Detail   
36 lectures 64 Self study 84  
  
  
Total 100  
  
  
  
ASSESSMENT METHODS  
  
(Please ensure that the sequence numbering of the assessments is in the correct chronological order for the module, as this may affect funding.)  
  
  
  
  
Required For KIS return to HESA  
Seq. Element % of module assessment weighting Summary Pass Mark LO Written exam ? central timetable  
(% of the element) Written exam ? local timetable  
(% of the element) Coursework  
(% of the element) Practical  
(% of the element)  
% Type % Type % Type % Type  
001 TCT 50 40\* K1 100 TCT   
002 TCT 50 40\* K2  
K3 S1 S2 100 TCT   
  
\* only populate if there is an approved programme specific regulation OR if the assessment is pass/fail   
  
(If the Pass Mark differs from the university regulations there must be a related programme specific regulation approved.)  
  
  
Assessment 001: TCT 1 assesses the student?s numeracy and learning outcome K1  
  
Assessment 002: TCT2 assesses the student?s algebra and learning outcomes K2, K3, S1 and S2  
  
  
INDICATIVE READING LIST ? (NB: New modules must have an extended reading list)  
  
Curwin J. & Slater R. Numeracy Skills for Business Chapman & Hall, 1994  
Croft A. & Davison R. Foundation Maths Longman, 1995  
  
SUPPORT MATERIAL:  
  
The University of Sunderland learning development centre (LDS) has a range of math skills support material and the student has access to one-to-one maths tuition.   
  
Additional support through the universities study skills provision is also available to students.  
  
  
PROGRAMMES USING THIS MODULE AS CORE/OPTION:   
a) Bsc (hons) applied biomedical sciences (core)  
b) Bsc (hons) biomedical sciences (core)  
c) Bsc (hons) biomedical studies (core)  
d) BSc (Hons) Sport and Exe rcise Development (core)  
e) BSc (Hons) Sport and Exercise science (core)  
f) BSc (Hons) Sport studies (core)  
g) Bsc (hons) sports coaching (core)  
h) Bsc (hons) psychology (core)  
i) Bsc (hons) psychology with counselling (core)  
j) Bsc (hons) sport and exercise psychology (core)  
  
  
Is the programme delivered On Campus or Off campus (please delete, as appropriate):   
  
Off campus   
  
College(s): Sunderland College, Shiney Row Centre  
  
Work based learning: No  
  
Professional Accreditation: No  
  
Module Leader   
Massoud Hajsadr, Sunderland College,   
  
Lead Deliverer   
Massoud Hajsadr, Sunderland College,   
  
  
JACs Code G100

**Assessments**

EXAM FINAL: Exam (TCT2) (50%)

EXAM: Exam (TCT1) (50%)

**Availability**

1D: Semester 1 2013/4 City of Sunderland College

1D: Semester 1 2014/5 City of Sunderland College

A: Semester 1 2013/4 Sunderland

A: Semester 1 2014/5 Sunderland