Module Specification

1. Factual information			
Module title	MT101: General Mathematics		
Module tutor	Ms. Amal EL Sayed	**Level**	1 (AOU) / 3 (OU)
Module type	Taught	**Credit value / points**	3 / 12
Mode of delivery	25% face-to-face and 75% self-learning		
Notional learning hours	Lectures, tutorials, and independent learning		

2. Rationale for the module and its links with other modules

General Mathematics provides students a college level academic experience that emphasizes the use of algebra and functions in problem solving and modelling. It also provides a foundation in quantitative literacy, supplies the algebra and other mathematics needed in partner and subsequent disciplines. This module is an introductory level course, in specific, reviews various areas of college mathematics such as linear equation, quadratic equations, rational expressions, analytic geometry, solving and graphing inequalities, imaginary numbers and sets. The course also introduces elementary functions such as linear, quadratic, polynomial, exponential, and logarithmic.

3. Aims of the module

The module aims to :

- Develop students' mastery of those algebraic techniques necessary for problem-solving and mathematical modelling.
- Strengthen students' algebraic and quantitative abilities useful in the study of other subsequent disciplines.
- Improve students' ability to communicate mathematical ideas clearly in oral and written forms.
- Involve students in a meaningful and positive, intellectually engaging, mathematical experience.
- Provide students' with tools to use technology for understanding and doing mathematics.
- Encourage students to take additional coursework in the mathematical sciences.

4. Pre-requisite modules or specified entry requirements

No previous knowledge is required.

5. Is the module compensatable?

NA.

6. Are there any PSRB requirements regarding the module?

No.

7. Intended learning outcomes

A. Knowledge and understanding	**Programme Learning Outcome(s) this maps against**	**Learning and teaching strategy**
At the end of the module, learners will be expected to: A.1. Solve linear, absolute value, quadratic, polynomials, radical, rational, exponential and logarithmic equations; and solve linear, polynomial, rational and absolute value inequalities. A.2. Recognize, define, and classify simple real-life applications . A.3. Realize simple geometric structure and sketch simple graphs. A.4. Be familiar with different algebraic structures and system types; and their standards. A.5. Grasp the mathematical technique for solving problems.	ITC: A1, A2, A4 CS: A1, A3, A4 N&S: A1, A2, A6 WD: A1, A2, A4 CwB: A1, A2, A4 Cys: A1, A2, A3 DS: A1, A2, A3 AI: A1, A2, A3	• Knowledge and understanding are acquired from a teaching textbook, reference textbooks, directed reading, multi -media packages computer mediated, web-based resources. • 25% face-to-face tutorial sessions. • TMA work. • Office hours. • Learning from the feedback on the continuous assessment components (TMA work + MTA). • Forums on the LMS

B. Cognitive skills	**Programme Learning Outcome(s) this maps against**	**Learning and teaching strategy**
At the end of the module learners will be expected to: **B1:** Investigate connections between roots, factors, graphs and symbolic representations of polynomial functions, and to be able to create polynomial functions when given information about the function's roots and/or factors and/or graph. **B2:** Extract correct information from the standard forms for equations of lines, circles, parabolas, exponential and logarithmic. **B3:** B.3. State symbolical functions whose graphs are given and that are related through translations and/or reflections.	ITC: B1, B4 CS: B1, B2, B3 N&S: B1, B2, B5 WD: B1, B2 CwB: B1, B2, B4 CyS: B2, B3 DS: B1, B3, B4 AI: B1, B2, B4	• 25% face-to-face tutorial sessions. • TMA work. • Course learning booklets and e-learning support material • Office hours. • Case studies. • Learning from the feedback on the continuous assessment components (TMA work + MTA). • Forums on the LMS.

C. Practical and professional skills	Programme Learning Outcome(s) this maps against	Learning and teaching strategy
At the end of the module, learners will be expected to: **C1:** Explain mathematical ideas from the study units in writing, using appropriate terminology, notation and style. **C2:** Develop skills in learning independently – manage study time, learn actively, reflect on progress and plan further learning. **C3:** Use General Mathematics to investigate more ITC applications; effectively present and objectively evaluate them. **C4:** . Utilize General Mathematics tools and technology to solve some simple problems related to ITC.	ITC: C1, C2, C3 CS: C1, C3 N&S: C1, C2 WD: C2, C3 CwB: C1, C2 CyS: C1, C4 DS: C1, C3, C4 AI: C1, C3	• 25% face-to-face tutorial sessions. TMA work. Course learning booklets and e-learning support material. Case studies. . Office hours. . Learning from the feedback on the continuous assessment components (TMA work + MTA). Forums on the LMS.

D Key transferable skills	Programme Learning Outcome(s) this maps against	Learning and teaching strategy
At the end of the module, learners will be expected to: **D1:** Have an awareness of the implications of General Mathematics in other ITC subjects. **D2:** Identify information, reasoning and creative processes gained from the course to achieve the goals of ITC program. **D3:** Present course objectives and outcomes effectively to a group of which they are a member.	ITC: D1, D2, D3, D4, D5 CS: D2, D3, D4, D5 N&S: D2, D3, D4 WD: D2, D3, D4 CwB: D2, D4, D5 CyS: D1, D3, D4 DS: D1, D2, D3, D4, D5 AI: D1, D2, D4	25% face-to-face tutorial sessions. TMA work. Course learning booklets and e-learning support material. Case studies. Office hours. Learning from the feedback on the continuous assessment components(TMA work +MTA) Forums on LMS.

8. Indicative content.
• Real numbers and their properties • Linear equations and inequalities in one variable • Linear equations in two variables and their graphs • Exponents and polynomials

8. Indicative content.

- Factoring
- Rational Expressions
- System of linear equations
- Radicals and rational exponents
- Quadratic equations and inequalities
- Functions and their graphs
- Exponential and logarithmic functions
- Complex numbers

9. Assessment strategy, assessment methods, their relative weightings and mapping to module learning outcomes

Assessment Strategy:

Weighting of the assessment components is as follow:

- TMA: 20%
- MTA: 30%
- Final Exam: 50%

To pass this module the following conditions should take place:

- Continuous assessment (TMA + MTA): at least 30%
- Final Exam: at least 40%
- In total at least 50% of the overall mark (TMA + MTA + Final).

Assessment Task	Weighting	Week submitted	Grading (Pass / Fail / %)	Module Learning Outcome(s) the assessment task maps to
MTA	30%		Min 15 / 50 (30%)	A1, A2, A3, B1,B2, C1, C2, D2
TMA	20%			A1, A2, B1, B2, C2, D1
Final Exam	50%		Min 20 / 50 (40%)	A1, A2, A3, A4, B1,B2, B3, C2, C4, D1, D4

10. Teaching staff associated with the module

Name and contact details
Ms. Amal EL Sayed, asayed@aou.edu.kw

11. Key reading list				
Author	Year	Title	Publisher	Location
M. Dogopoloski	2012	Elementary & intermediate Algebra, 4/E	McGraw Hill	USA
R.N Aufmann & J.S. Lockwood	2012	Beginning Algebra with applications, 8/E	Brooks/Cole	Australia
E. Haeussler, R. Paul, R. Wood & S. Khouyibaba	2012	Introductory Mathematical Analysis, 1/E	Pearson	England
J. Goldstein, D.C. Lay & D.I. Schneider	2011	Calculus & Its Applications, 5/E	Prentice Hall	USA
M.L. Lial, N. R. Greenwell & N.P. Ritchey	2012	Finite Mathematics, 10/E	Pearson	England
Bittinger, Ellenbogen & Surgent	2012	Calculus and Its Applications, 10/E	Pearson	England
D. Hughes-Hallett, A.M.	2014	Applied calculus, 5/E	Wiley	USA

12. Other indicative text (e.g. websites)
• http://middleeast.pearson.com/haeussler • http://arabou.edu.kw/ • Gilbert Strang, Highlights of calculus, MIT Video Lectures, http://ocw.mit.edu/resources/res-18-005-highlights-of-calculus-spring-2010/ • Trigonometry for Calculus 56 Video Lectures (http://learnerstv.com/Free-Maths-video-lecture- courses.htm) Introductory Calculus 24 Video Lectures (http://learnerstv.com/Free-Maths-video-lecture-courses.htm) • Fundamentals of Calculus 32 Video Lectures (http://learnerstv.com/Free-Maths-video-lecture-courses.htm) • Pre-calculus 33 Video Lectures (http://learnerstv.com/Free-Maths-video-lecture-courses.htm) • Single Variable Calculus 35 Video Lectures (http://learnerstv.com/Free-Maths-video-lecture-courses.htm) • Differential and Integral Calculus 17 Video Lectures (http://learnerstv.com/Free-Maths-video-lecture-courses.htm) • Highlights of Calculus 5 Video Lectures (http://learnerstv.com/Free-Maths-video-lecture-courses.htm) • Calculus Second Semester Integration 143 Video Lectures (http://learnerstv.com/Free-Maths-video-lecture-courses.htm) • Vector Calculus 143 Video Lectures (http://learnerstv.com/Free-Maths-video-lecture-courses.htm) • Homework Help for Single Variable Calculus 86 (http://learnerstv.com/Free-Maths-video-lecture-courses.htm)

13. List of amendments since last (re)validation		
Area amended	Details	Date Central Quality informed
Validation 2021		