



**October University for Modern Sciences and Arts
(MSA)**

**B.Sc. Honours
Computer Systems Engineering**

Student Handbook 2021/2022

**Validated by the University of Greenwich,
London UK**

Faculty of Engineering

Computer Systems Engineering

Programme Leader: Assoc. Prof. Dr. Samer I. Mohamed

Vision

“The Faculty is nationally accredited, and internationally validated, and its programmes are among the top according to global subject ranking criteria”.

الرؤية

"الكلية معتمدة قومياً ومعترف بها عالمياً وتحظى برامجها بترتيب متقدم فى التصنيف الدولى فى مجال الهندسة".

Mission

“The Faculty of Engineering of October University for Modern Sciences and Arts offers modern educational programmes in cooperation with a British partner, supports entrepreneurship and meets job market needs, prepares graduates who are qualified with creative thinking and with engineering, technical, intellectual, professional, and managerial skills, conducts applied scientific research, and participates in community service and environmental development”.

الرسالة

"تُقدِّم كلية الهندسة بجامعة أكتوبر للعلوم الحديثة والآداب برامج تعليمية حديثة، بالتعاون مع شريك بريطاني، تدعم ريادة الأعمال وتلبي احتياجات سوق العمل، وتُعد خريجين مؤهلين للتفكير الإبداعي ومزودين بمهارات هندسية وتقنية وذهنية ومهنية وإدارية؛ وتقوم بالبحث العلمي التطبيقي، وتساهم في خدمة المجتمع وتنمية البيئة".

القيم الجوهرية للكلية

Justice and Non-Discrimination

Quality and Excellence

Integrity and Honesty

Intellectual Freedom

Transparency

Creativity

Respect and Acceptance of Others

• العدالة وعدم التمييز

• الجودة و التميز

• النزاهة والأمانة

• الحرية الفكرية

• الشفافية

• الإبداع

• إحترام وقبول الآخر

الأهداف الاستراتيجية للكلية

الأهداف الفرعية	الأهداف الاستراتيجية
1/1 تطوير عمل وحدة ضمان الجودة.	1- إستيفاء متطلبات الإعتداف من الهيئات القومية/الدولية.
1/2 تأهيل الكوادر الأكاديمية والإدارية فى مجالات الجودة.	
1/3 عمل توعية ونشر لثقافة الجودة.	
1/4 التقدم للإعتداف القومى/الدولى.	
2/1 تنمية مهارات وقدرات كوادر الكلية فى مجالات التعليم والتدريس والتقييم.	2- تطوير الخدمات التعليمية للكلية.
2/2 تقديم تعليم إلكتروني يواكب التقنيات العالمية.	
2/3 تقديم دعم أكاديمي فعال للطلاب.	
2/4 إنشاء برامج تعليمية جديدة تواكب احتياجات سوق العمل.	
2/5 تطوير المعامل بأحدث الآلات والمعدات والأجهزة والبرمجيات.	
1/3 ربط البحث العلمي بالكلية باحتياجات الخطط بمستوياتها المختلفة.	3- عمل بحث علمي يلبي التطورات العالمية.
3/2 تطوير كفاءة أعضاء هيئة التدريس والهيئة المعاونة البحثية.	
3/3 نشر أبحاث وإقامة مؤتمرات وندوات وورش عمل علمية.	
3/4 عمل مشروعات بحثية ممولة محليا/دوليا.	
3/5 إنشاء برامج دراسات عليا.	
4/1 تحديد مجالات المشاركة المجتمعية لتلبي احتياجات المجتمع المختلفة.	4- تطوير المشاركة المجتمعية للكلية.
4/2 فتح مجال فى التعليم المستمر والتدريب للمجتمع الخارجى.	
4/3 إنشاء وحدات ذات طابع خاص .	
4/4 تحفيز مشاركة الخريجين والمجتمع الخارجى فى أنشطة الكلية.	
5/1 إعداد الكوادر الأكاديمية والإدارية للتعامل مع معطيات الظروف المحيطة.	5- تحقيق المرونة المؤسسية فى التعامل مع التحديات.
5/2 إعداد الطلاب للتعامل مع معطيات الظروف المحيطة.	
6/1 دعم الأنشطة المختلفة المقدمة للطلاب.	6- توفير حياة جامعية ثرية ومتنوعة.
6/2 نشر التجارب الناجحة من أبناء الكلية وخريجها.	

Contents

A. Purpose and status of your Student Handbook...	5
B. University and Programme Academic Calendar.....	6
C. Faculty of Engineering Dean's Welcome... ..	7
D. Introduction to MSA University	8
E. Introduction to the Faculty of Engineering	9
F. Introduction to the University of Greenwich.....	10
G. B.Sc. Honours Computer Systems Engineering Programme specification... ..	11
K. Faculty Regulations Computer Systems Engineering programmes.....	23
L. Subject/Programme Staff List and Contact Details... ..	25

A. Purpose and Status of your Student Handbook

The purpose of this handbook is to provide you with information about your programme of study and to direct you to other general information about studying for a University of Greenwich award.

This handbook must be read in conjunction with the University Catalogue and University Guide and Regulations (<http://www.gre.ac.uk/intranet/students.htm>).

The material in this handbook is as accurate as possible at the date of production.

Your comments on any improvements to this handbook are welcome - please put them in writing (with name of handbook) to the programme leader **Prof. Dr. Samer I. Mohamed**

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B. University and Programme Academic Calendar

Fall 2021 Academic Calendar -Academic Year 2021 / 2022

Graduation Ceremony Class 2019/2020	Pls refer to MSA Official Facebook for dates
Graduation Ceremony Class 2020/2021	Pls refer to MSA Official Facebook for dates
Fall 2021 Semester	
Commencement of online Registration for Continuing Students & Approval of Online Schedules: Note: Each faculty will determine and publish its respective dates for registration on MSA official platforms. Students should kindly contact their faculties for exact dates	Sun 19 Sept 2021 – Thurs 30 Sept 2021
Newcomers Only: Orientation & Course Registration (Proceedings of the orientation day will be sent to students via email & MSA official platforms)	Sat 2 Oct – Wed 6 Oct 2021*
October 6th Armed Forces Victory	* Wed 6 Oct 2021 *Subject to transfer to Thursday 7 th Oct 2021 as per Governmental Official Announcement
First Day of Classes for <u>All students</u>	Sat 9 Oct 2021
Last Day of Classes for all students Fall 2021	Thurs 13 Jan 2022
New student Activity Week (Details to be sent via emails to students)	Sat 9 Oct 2021 - Thurs 14 Oct 2021
El Mawled El Nabawi	Tues 19 Oct* Subject to transfer to Thursday 21 Oct as per Governmental Official Announcement
Deadline to ADD, DROP, WITHDRAW Courses	Student should refer to their respective faculty for ADD, DROP, WITHDRAW Courses Deadline
BOS Board of Study Meeting (Manag, CS & Engineering) Board of Study Meeting (Pharmacy, Bio) Board of Study Meeting (Lang, Mcom & Arts)	Tues 9 Nov 2021 Wed 10 Nov 2021 Thurs 11 Nov 2021
MID Term Exams	Sat 20 Nov – Thurs 2 Dec 2021 Subject to amendment via MSA Examination Unit
Classes Resume	Students should refer to MSA Examination Unit & Respective Faculty for class resume date
Student Online Course & Instructors Evaluation	Dec 2021 – final exams
Registration date for UK Student Summer Abroad Programme (Academic, Cultural & Entertainment Programme)	Programme to be confirmed subject to Covid 19 unforeseen updates.
Commencement of Payment of Fees for Spring 2020	December 2021
Fall Senior Graduation Photo Week To be confirmed subject to further notice	Pls refer to MSA Official Facebook for dates

Western Christmas	Saturday 25th Dec 2021
New Year Commencement	Saturday 1st Jan 2022
Eastern Christmas	Fri 7th & Sat 8th Jan 2022
Final Day of classes for Fall 2021	Thurs 13 Jan 2022
Final Exams Duration Fall 2021	First day of exams: Sat 15 Jan 2022* Last day of exams: Thurs 10 Feb 2022* *Subject to amendment via Governmental Notice & MSA Examination Unit
Baptism Day	Wed 19th Jan 2022
National Day	Monday 25th Jan 2022* *Subject to transfer to Thursday 27 Jan as per Governmental official notice
Moderation & Fall University Assessment Boards	Exam Boards UoG: Mon 21 Feb 2022 UoB Exam Board: TBC

Spring 2022 & Summer 2022

SPRING 2022 SEMESTER	
Schedule Registration starts (Students should refer to his/her respective faculty for details)	Tues 22 Feb 2022 – Fri 25 Feb 2022
First Day of Classes Spring 2022	Sat 26 Feb 2022
Last Day for Classes Spring 2022	Thurs 9 June 2022
Start of Additional 5% fine	Mon 7 March 2022
Start of Additional 10% fine	Mon 14 March 2022
Deadline to Add, Drop, Withdraw courses	Refer to respective faculty for dates and approval
BOS Board of Study Meeting (Pharmacy, Bio) Board of Study Meeting (Manag, CS & Engineering) Board of Study Meeting (Lang, Arts & Design, Mcom)	Tues 29 March 2022 Wed 30 March 2022 Thurs 31 March 2022
Start of Ramadan	Sat 2 April 2022* Subject to amendment via governmental authorities
Mid Term Exams	Sat 9 April 2022 - Thurs 21 April 2022
Student Online Course & Instructors Evaluation	Mid April 2022 – final exams
Palm Sunday	Sun 17th April 2022
Holy Thursday	Thurs 21th April 2022
Sham El Nasseem & Eastern Day	Sun 24th & Mon 25th April 2022* *Subject to amendment as per Governmental Official Announcement

Sinai Liberation Day	Mon 25th April 2022* *Subject to amendment as per Governmental Official Announcement
Eid EL Fetr*	Sun 1 May – Wed 4 May 2022* *Subject to amendment via governmental official announcement
Labor Day	Thurs 5th May 2022
Last date of classes Spring 2022	Thurs 9 June 2022
Spring 2021 Final Exams Start Date - End Date	Sat 11 June 2022 - Thurs 7 July 2022 As per Ministry
Eid El Adha	Fri 8 July 2022- Tues 12 July 2022* *Subject to amendment as per Governmental Official Announcement
June 2013 Revolution	Thurs 30 June 2022
Spring 2022 University Assessment Boards	UoG: Thur 21 July 2022 -UoB: (TBC)
July Revolution Day	Sat 23 July 2022* *Subject to amendment to as per Governmental Official Announcement
SUMMER SEMESTER 2022	
First day of classes Summer 2022	Sun 24 July 2022
Last day of classes Summer 2022	Wed 31 Aug 2022
Hejri Islamic new year	Sat 30 July 2022 Subject to amendment via governmental authorities
Summer 2022 Exams Start date - Summer 2022 Exams End date	Thurs 1 Sept – Wed 7 Sept 2022
Summer 2022 Exam Boards	UoG: Thurs 15 Sept 2022 UoB: TBC
Registration returning	Thursday 15 Sept 2022
Orientation new comer	Sat 17 Sept 2022- Thurs 22 Sept 2022
Fall 2022 (Tentative Date)	Sat 24 Sep 2022

C. Faculty of Engineering Dean's Welcome

Welcome to the Faculty of Engineering at MSA University.

Programs in the Faculty are connected by a common focus of providing exceptional education in fields that directly support the Faculty of Engineering mission of enriching the quality of life for our students and the community connecting learning to life.

In carrying out this purpose, the Faculty of Engineering is committed to: providing high-quality programs of study, instruction and practice; understanding, promoting, and respecting diversity; supporting students, faculty, staff, and program development; insuring that resources support appropriate classroom and lab experiments; promoting internal and external partnerships; and ensuring students and staff to be engaged in activities that promote effective teaching, assessment, advisement, and professional and community service.

We are dedicated to providing you with the skills, creativity, and resolve to be effective in your future. The education you receive here will provide you with amazing opportunities – in your ability to work in your chosen profession, but more importantly in the way you view the world.

I hope you are able to take full advantage of these life-changing opportunities, and the challenges that accompany them. I wish you much continued success in your academic studies.

Sincerely yours,

Nahed Sobhi

Prof. Dr. Nahed Sobhi Abdel Nour
Dean, Faculty of Engineering

D. Introduction to MSA University

October University for Modern Sciences and Arts (MSA) has been established under Republican Decree No. 244 for 1996 to introduce state-of-the-art technologies and concepts in all disciplines. MSA is proud that its different programmes were fully accredited before the graduation of its first class in Spring 2000.

MSA is, by all means, the outcome of 4 decades of experience in the field of education on the local and international levels. Dar El Tarbiah was the first Language School founded by Egyptians in 1956. The institution has maintained an excellent reputation, based on the high quality of teaching and facilities that has been recognized both locally and internationally in GCE, IGCSE, GCSE, as well as Egyptian Thanaweya Amma and American Diploma. Our students' excellent performance in the British System has encouraged us to expand the British Section in our school to include both IGCSE & GCSE, simultaneously. Our success in teaching all AL and AS subjects for almost 12 years, with outstanding results in the IGCSE, encouraged us to complete the undergraduate programmes.

The English Language is the medium of instruction at MSA University. The current academic work of the university is divided into nine faculties, namely: Faculty of Management Sciences, Faculty of Engineering, Faculty of Computer Sciences, Faculty of Mass Communication, Faculty of Arts and Design, Faculty of Biotechnology, Faculty of Dentistry, Faculty of Pharmacy, and Faculty of Languages.. We are keen on providing our students with all the up-to-date tools needed to cope with the Information and Communication Technology Era. That is why we are dedicated to the pursuit of excellence in curricula, facilities, staff and students. That is the main reason why our modern and progressive policy has been internationally acknowledged by universities in the UK and USA, as we have several cooperation agreements with prominent universities there. MSA programmes are designed and implemented according to the most up-to-date international standards. All course outlines highlight the role of new and emerging technologies in meeting challenges posed by the Information and Communication Technology Era.

MSA aims to provide its students with an exceptional learning experience that will enable them to compete in the global highly competitive job market. The vast experience of Dar El Tarbiah Institution and MSA University in the field of education made its Top Management keen on adopting the British Education System due to its unique characteristics that provide students with the necessary up-to-date tools and skills in a flexible environment, while at the same time ensuring that students are highly committed and competitive.

Institution Website: www.msa.eun.eg

E. Introduction to the Faculty of Engineering

The faculty of Engineering at MSA offers four programmes: B.Sc. (Hons) Architectural Engineering, B.Sc. (Hons) Electrical Communication & Electronic Systems Engineering, B.Sc. (Hons) Computer Systems Engineering, and B.Sc. (Hons) Industrial Systems Engineering. The Faculty of Engineering emphasizes creative and professional aspects of Engineering and Technology; students do not only learn theories, they also mix theory with practice. By the time they graduate, they would have been trained and qualified; and thus ready to work in the field as professionals.

The Faculty of Engineering offers an Computer Systems Engineering (CSE) which is concerned with the theory, design, implementation, and applications, both actual and potential, of various computer systems based on computer architecture and software engineering phenomena and properties.

CSE programme has been developed so that it would follow reputable international standards. It meets with the criteria established by The Committee for Engineering Education Sector set up by The Supreme Council of Egyptian Universities, and fulfils local industrial and service sectors.

CSE B.Sc. (Hons) in Computer Systems Engineering is awarded upon the successful completion of an approved curriculum comprised of 168 credit hours, normally effected and completed in five academic years (10 semesters).

CSE students are introduced to a broad spectrum of Computer Systems Engineering topics augmented by modern engineering experimentation, methodology, and practice.

CSE graduates should be capable of adapting to the ever-evolving engineering tools and procedures in the practice of all aspects of life long Computer engineering profession. Graduates should be able to tackle unstructured engineering problems as a teamwork, think critically, function perfectly, and communicate effectively.

F. Introduction to The University of Greenwich

The programmes

The programme is validated by The University of Greenwich. This means that students, successfully completing all parts of the programme, will receive a dual award: the B.Sc. (Hons) from the University of Greenwich, and the B.Sc. (Hons) from October University for Modern Sciences and Arts (MSA); and may, if they wish to, attend the appropriate Greenwich graduation ceremony. Students will enrol as students of October University for Modern Sciences and Arts (MSA), and will be registered with the University of Greenwich.

If a student does not complete the full programme, he/she will be given a transcript recording any individual elements of the programme successfully completed.

The programme is supervised by the programme leader Prof. Dr. Samer Ibrahim Mohamed, Campus Building C, Address 26 July Mehwar Road, Intersection with Wahat Road, 6th October City; Telephone 33365037; Fax 37603811.

The University regulations

MSA acts in accordance with its procedures, discussed in the University Assessment Board, in the case of student dishonesty or a student appeal.

Further Documents held by MSA

The Faculty should, also, hold reference copies of the following documents for consultation by the students and staff:

- The University of Greenwich Charter for Students on Collaborative Programmes.
- The Memorandum of Co-operation for the Programme. This is the formal agreement between the University of Greenwich and MSA University on the delivery of the Programme.
- Quality Assurance Agency for Higher Education Code for England and Wales: Code of Practice: Collaborative Provision.

I.B.Sc. Honours Computer Systems Engineering Programme specification

1. Awarding Institution		2. Teaching Institution		3. Faculty/Department		
University of Greenwich		October University for Modern Sciences and Arts (MSA)		Engineering	Computer Systems Engineering	
4. Final Award		5. Programme Title and approved end o r sements:		6. Qualification Level as defined by the UK Framework for Higher Education Qualifications (Please refer to D5 Guidance notes)		
B.Sc. (Hons) Computer Systems Engineering (MSA)		Electrical Communication and Electronic Systems Engineering		4	5	6
				---	---	√
7. Accredited by:		8. UCAS Code:				
Supreme Council for Egyptian Universities		None				
9. Maximum/ Minimum Period(s) of Registration						
F/T Minimum 5 years –Maximum 10 years N.B. Minimum period can be 4.5 years equivalent to 9 regular semesters with condition of 168 credits completed.		P/T N/A		SW N/A	D/L N/A	
10. Programme Code				11. Last Revision date for Programme Specification		
BSc (Hons.) P11228				2014/2015.....		
12. External Reference Points, e.g. subject benchmark statements and professional body requirements						
The following reference points were used in designing the program: <ul style="list-style-type: none"> • Supreme Council for Egyptian Universities (SCEU) Regulations. • Criteria established by the Committee for Engineering Education set up by SCEU. • QAA guidelines for program specifications. • MSA University Council. • Faculty of Engineering Quality Assurance Audit Unit. 						
13. Entry Requirements						
<ul style="list-style-type: none"> • Accruing the Entry score set by Supreme Council for Egyptian Universities. • Passing MSA English placement entry Exam. • Submitting authenticated original certificate and documentation. 						
14. Educational Aims of the Programme and Potential Career Destinations of Graduates [Maximum 150 words]:						
<p>The Computer Systems Engineering (CSE) program is a discipline that embodies the science and technology of design, construction, implementation, and maintenance of software and hardware components of modern computing systems and computer-controlled equipment. Computer systems engineering has traditionally been viewed as a combination of both computer sciences (CS) and electrical engineering (EE). Computer systems engineering is a field that experiences effects from rapid technological development in different real life applications.</p> <p>The program aims for the computer systems engineering graduate to be:</p> <ul style="list-style-type: none"> • Trained to be proficient in the design and implementation of computer systems, both hardware and software. • Design digital control circuitry and program it to function correctly. • Knowledgeable in related mathematics, physics sciences, electrical, electronics, communications, computer hardware and software, networking and other engineering concepts and systems. • Expert through practicing the discipline concepts in solving problems of real applications. <p>This level of expertise should be permanently upraised by engaging in life-long learning processes.</p> <ul style="list-style-type: none"> • Provide support for multinational and local institutions. 						

15. Summary of Skills Development for Students within the Programme [Maximum 150 words]:

The student of the CSE Program will be able to develop basic skills in digital systems, microprocessors, microcontrollers, programming and interfacing techniques. Upon graduation, the student will be able to work creatively and flexibly in a variety of media from design, operation or maintenance of computers and digital systems. Furthermore, the programme provides the opportunity to improve the capacity for independent work while maintaining and developing the student's ability to work in groups.

The CSE program develops the following skills for its graduates:

- The intellectual and practical skills necessary for the student in Computer Systems Engineering area.
- The ability to support for multinational and local institutions.
- The capability to work in private and governmental firms and agencies, where it is required to design, manufacture, operate, develop or maintain computer systems or computer-controlled systems.

16. The programme provides opportunities for students to achieve the following outcomes:

Knowledge and Understanding :

After completion of the programme, the student will be able to demonstrate knowledge and understanding of:

- A1. Concepts and theories of engineering mathematics, engineering physics, engineering mechanics, and Engineering Drawing.
- A2. Basics of programming and software development
- A3. Characteristics of engineering materials used in electronic circuits and components.
- A4. Measurement and instrumentation of electrical and electronic circuits.
- A5. Engineering principles in the fields of logic design, circuit analysis, machine and assembly languages, computer organization and architectures, memory hierarchy, advanced computer architectures, embedded systems, signal processing, operating systems, real- time systems and reliability analysis.
- A6. Quality assessment of computer systems.
- A7. Related research and current advances in the field of computer software and hardware.
- A8. Technologies of data, image and graphics representation and organization on computer storage media.
- A9. Modern trends in information technology and its fundamental role in business enterprises.
- A10. Technical language and research writing.
- A11. Methodologies of solving engineering problems, data collection and interpretation
- A12. Codes of practice and standards, health and safety requirements, Topics related to humanitarian interests, and environmental issues.
- A13. Business and management principles relevant to engineering, professional ethics and impacts of Engineering solutions on society and environment.
- A14. Information theory, Coding and decoding techniques.
- A15. Concepts of artificial intelligence and expert systems.
- A16. Engineering systems description, analysis and control.
- A17. Advanced and new trends of Computer systems and networks.
- A18. Advanced and contemporary engineering topics.

17. The programme provides opportunities for students to develop the following skills:

Intellectual Skills:

After completion of the programme, the student will be able to:

After completion of the programme, the student will be able to:

- B1. Select the appropriate mathematical tools, computing methods, design techniques for modeling and analyzing computer systems;
- B2. Select, synthesize, and apply suitable IT tools to computer engineering problems.
- B3. Proposing various computer-based solutions to business system problems.
- B4. Analyse the performance of digital systems
- B5. Capability of integrating computer objects running on different system configurations.
- B6. Innovating solutions based on non-traditional thinking and the use of latest technologies
- B7. Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.

- B8. Investigate and troubleshoot the failure of digital systems at various levels.
- B9. Evaluate engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environment.
- B10. Incorporate economic, societal, environmental dimensions and risk management in design.
- B11. Create systematic and methodical approaches when dealing with new and advancing technology.
- B12. Develop analytical models for engineering problems and expert systems.
- B13. Develop innovative solutions for the practical industrial problems.

Professional and Practical Skills:

After completion of the programme, the student will be able to:

- C1. Integrate software and hardware modules from different vendors to design new products and/or services.
- C2. Create and/or re-design a process, component or system, and carry out specialized computer systems designs.
- C3. Use computational facilities and techniques, measuring instruments, workshops and laboratory equipment to design experiments, collect, analyse and interpret results.
- C4. Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs.
- C5. Apply safe systems at work and observe the appropriate steps to manage risks.
- C6. Apply appropriate mathematical methods or IT tools.
- C7. Use relevant laboratory equipment and analyse the results correctly.
- C8. Identify appropriate specifications for required devices.
- C9. Apply computer programming for the design and diagnostics of digital systems.
- C10. Design and operate computer-based systems specifically designed for business applications.
- C11. Use appropriate specialized computer software, computational tools and design packages throughout the phases of the life cycle of system development;
- C12. Write computer programs on professional levels achieving acceptable quality measures in software development.
- C13. Utilize the appropriate tools to measure digital system performance.

General and Transferable Skills:

After completion of the program, the student will be able to:

- D1. Collaborate effectively within multidisciplinary team.
- D2. Work in stressful environment and within constraints and apply risk analysis.
- D3. Communicate effectively.
- D4. Demonstrate efficient IT capabilities.
- D5. Lead and motivate individuals
- D6. Effectively manage tasks, time, and resources
- D7. Search for information and engage in life-long self-learning discipline.
- D8. Acquire entrepreneurial skills.
- D9. Refer to relevant literatures.
- D10. Acquire basic project management skills
- D11. Demonstrate basic organizational and project management skills.
- D12. Prepare and present technical reports.

Graduate Attributes:

The graduates of the Computer Systems Engineering programme should be able to:

- a. Apply knowledge of computing, mathematics, physics and logical skills appropriate to the computer engineering discipline.
- b. Analyze a problem, and identify and define the computing requirements appropriate to its solution.
- c. Design, implement and evaluate a 'computer-based system, process, component, or program to meet desired needs.
- d. Use general computer and software tools professionally.
- e. Analyze operations, realize requirements and constraints of projects and, consequently, achieve an appropriate cost effective design.
- f. Perform troubleshooting in computer systems.
- g. Exhibit competency in English as a second language as suitable for the discipline.

- h. Demonstrate inductive reasoning abilities, figuring general rules and conclusions about seemingly unrelated events.
- i. Analyze the local and global impact of computing on individuals, organizations and society.
- j. Use current advanced techniques, skills, and tools necessary for computing practices.

Greenwich Graduate Attributes

Your programme of study will be developing the Greenwich Graduate Attributes. This will be reflected in its learning outcomes and will be embedded in its specific discipline areas.

The University of Greenwich has always aimed to provide an environment that allows students to maximize their potential. In meeting the challenges of today's tough and changing world our consultation with staff and students resulted in defining distinctive characteristics for the Greenwich Graduate. These explicit behaviors, values, skills and dispositions that we expect our students to develop will best prepare them for their future careers and help us to reshape student learning and assessment activities.

A flourishing scholarly community, with an ethos of sustainability and a global outlook, full of confident, distinctive students, always learning, always developing.

Scholarship and autonomy

The University of Greenwich is committed to developing graduates who:

- Have an informed understanding of their discipline or professional practice, and the ability to question its principles, practices and boundaries.
- Think independently, analytically and creatively, and engage imaginatively with new areas of investigation.
- Appreciate disciplines and forms of professional practice beyond their own, and draw connections between them.
- Are intellectually curious, responsive to challenges, and demonstrate initiative and resilience.

Creativity and enterprise

The University of Greenwich is committed to giving its graduates the confidence to:

- Recognize and create opportunities, and respond effectively to unfamiliar or unprecedented situations or problems.
- Generate new ideas and develop creative solutions or syntheses.
- Communicate clearly and effectively, in a range of forms, taking account of different audiences.
- Make use of familiar and emerging information and communication technologies.
- Seize and shape the opportunities open to them on leaving university.

Cross-cultural and international awareness

The University of Greenwich is committed to producing graduates who:

- Engage effectively in groups whose members are from diverse backgrounds.
- Appreciate the importance of behaving sustainably.
- Move fluently between different cultural, social and political contexts.
- Value the ability to communicate in more than one language.

MSA Mapping of Greenwich Graduate Attributes for CSE Programme:

The University of Greenwich initiative for graduates (Greenwich Graduate Attributes) seeks to recognize that while disciplinary knowledge is important, graduates will leave with skills and values which will equip them for life outside the university. At MSA, the same objective has been in place although not similarly categorized. Much of what lies at the heart of the initiative is present in the MSA Graduate Attributes, as will be discussed below.

The initiative recognizes three core elements: *Scholarship and autonomy*, *Creativity and enterprise*, and *Cross-cultural and International awareness* which are seen as the elements which reflect most the University of Greenwich.

Scholarship and autonomy:

MAT 351 Mathematical Analysis and Numerical Methods.

CSE352 Microprocessor.

ECE353 Electronic Systems Analysis I.

CSE 354 Algorithms and Data Structure.

ECE 355 Data Communication

ECE 356 Electronic Measurement Instruments .

Term : Spring

MAT 361 Probability and Statistics.
CSE 362 Digital Systems Interfacing.
ECE363 Electronic Systems Analysis II.
CSE 364 Operating Systems.
ECE 365 Linear Systems.
CSE366 Computer Networks.

CSE 451 Concepts of Programming Languages.
CSE 452 Software Engineering.
CSE 453x CSE Elective I.
CSE 454 Systems analysis and Design.
ECE 455 Automatic Control Systems.
CSE 456 Computer Architecture.

Term : Spring

CSE 461 Computer Security.
CSE 462a Fundamental of Database.
CSE 463x CSE Elective II.
CSE 464a Artificial Intelligence.
ECE 465 Information Theory and Coding.
ECE 466 Digital Signal Processing.
ECE 551 Electrical Energy Conversion.
ECE 552 Mobile Communication Systems.
CSE 553x CSE Elective III.
CSE 554 Graduation Project (Part I).

Term : Spring

ECE 561 VLSI.

MSA department of CSE Systems Engineering graduates have an informed understanding of their discipline prior to graduation through years 2, 3, 4 and 5 courses, namely:

CSE352 Microprocessor, CSE 354 Algorithms and Data Structure, CSE 362 Digital Systems Interfacing, CSE 364 Operating Systems, CSE 451 Concepts of Programming Languages, CSE 452 Software Engineering, CSE 454 Systems analysis and Design, CSE 456 Computer Architecture, CSE 461 Computer Security, CSE 462a Fundamental of Database and CSE 464a Artificial Intelligence which prepare students to life after university. The former introduces them to the various career paths they might tread as graduates of Computer Systems Engineering, the professional body to which they will become members (Egyptian Syndicate of Engineers). The key issues of CSE Engineering, the intelligent systems, automation and key concepts of inter-disciplinary Engineering (items of the knowledge and Understanding) Intended Learning Outcomes, and items of the Intellectual Skills that students will be able to demonstrate). They will be able to interact critically with the institutional structures within which SCE Engineering practice takes place (items of Graduate Attributes, previously mentioned). Through the latter along with the Design courses they become familiar with the technical engineering knowledge and concepts necessary for the chosen profession (items of the knowledge and Understanding Intended Learning Outcomes, and items of the Professional and Practical Skills).

They come to appreciate disciplines and forms of professional practice through the choice between elective courses in years 4 and 5. The Special Topics in Computers (ECE 5634), Advanced Topics in Computers (CSE 5636), and Advanced Artificial Intelligence (CSE 5635) which introduce them to the related disciplines which they will be dealing with in the field when they graduate. Lastly, and through the previous courses, students in Computer Systems Engineering could specialize in any of those related disciplines upon graduation which opens up career paths for MSA graduates.

Creativity and enterprise:

MSA department of Computers Systems Engineering graduates learn to be creative through the Digital Logic Design courses (ECE 254, ECE264), Microprocessor(CSE352), Digital Systems Interfacing(CSE362) and Computer Architecture (CSE456) in years 2, 3 and 4 of the programme, and through the Graduation Projects (CSE 554 and CSE564) during the 5th year of the program. They are mentally challenged to come up with unique and original conceptions. Through this rigorous process they are taught to be innovative and resourceful. Additionally, they are drilled to be able to defend their design decisions through presentations. They develop confidence with graphic and verbal communication and presentation skills. Accordingly, they can communicate clearly and effectively both graphically using a variety of media and verbally to different audiences (items of the Graduate Attribute), and (items of the Transferable

skills).

Through the Engineering Drawing course (GSE 154), Engineering Computer Programming I and II Courses (COM 253), the Mathematical Analysis and Numerical Methods course (MAT 351), and the Probability and Statistics Course (MAT 361), they are equipped with the tools necessary to explore and experiment with new software and emerging information and communication technologies (items of Practical Skills and Graduate Attributes).

Cross-cultural and International Awareness:

MSA department of Computer Systems Engineering students of level 4 can opt for the joint summer elective with the University of Greenwich whereby they work jointly with their British counterparts. Moreover, the student body at MSA is diverse with Egyptian and Non-Egyptian students especially from other Arab Countries. Most MSA students are multi-lingual and can converse in English and Arabic, those from French schools could speak the three languages. This could enhance their chances of employability in multi-national establishments worldwide (*Graduate Attribute* items).

18. Teaching, Learning and Assessment Methods related to the programme learning outcomes and skills sets

1- Knowledge and Understanding :

Teaching/Learning methods:

- Attainment of items 1, 2, 3, 4 and 5 through lectures and tutorials in years 1, 2 and 3.
- Attainment of item 6 to 18 through lectures, tutorials, labs sessions, practical projects and through field trips in years.

Assessment:

- Assessment of all items through assignments with various levels of complexity, class exams, unseen mid-term and final exams, discussions of research papers, case-studies, presentation and mini-projects both individual and team or group work.

2- Intellectual Skills

Teaching/Learning:

- Attainment of all items through assignments, and mini projects and graduation projects..

Assessment:

- Assessment of all items through class exams, unseen mid-term and final exams, oral presentations and discussion of mini and graduations projects (Power point or Poster presentations).

3- Practical Skills:

Teaching/learning:

- Attainment of items 1 to 7 through case studies, mini-projects, and graduation project and that in years 2, 3 and 4 (both individual and team or group work).
- Attainment of items 8 to 13 through computer labs, and graduation project and that in years 3, 4 and 5 and summer training.

Assessment:

- Assessment of items 1 to 7 is through reports, oral presentations and discussions (power point or poster presentations).
Assessment of items 8 to 13 is through computer lab exams, and oral (power point or poster) presentations and summer training.

4- Transferable Skills:

Teaching/learning:

- Attainment of items 1 to 4 through lectures, mini-projects, research work, graduation projects, and summer training, and that in years 1 to 5.
- Attainment of items 5 to 12 through graduation project and training especially in year 5.

Assessment:

- Assessment of all items through class exams, unseen mid-term and final exams, oral presentations and discussion of mini and graduations projects (Power point or Poster presentations).

19. Programme Structure: Levels, Courses¹ and Credits

Awards and Credits

¹Please indicate clearly whether a course runs in Term 1, Term 2 or across the academic year

Level4	<p>Compulsory Courses Term : Fall MAT 351 Mathematical Analysis and Numerical Methods. CSE352 Microprocessor. ECE353 Electronic Systems Analysis I. CSE 354 Algorithms and Data Structure. ECE 355 Data Communication ECE 356 Electronic Measurement Instruments .</p> <p>Term : Spring MAT 361 Probability and Statistics. CSE 362 Digital Systems Interfacing. ECE363 Electronic Systems Analysis II. CSE 364 Operating Systems. ECE 365 Linear Systems. CSE366 Computer Networks.</p> <p>Optional Courses: ----- Courses required for named endorsements (if applicable N/A))</p>	<p>Certificate of Higher Education (Cert. HE)</p> <p>NA</p>
Level5	<p>Compulsory Courses: Term : Fall CSE 451 Concepts of Programming Languages. CSE 452 Software Engineering. CSE 453x CSE Elective I. CSE 454 Systems analysis and Design. ECE 455 Automatic Control Systems. CSE 456 Computer Architecture.</p> <p>Term : Spring CSE 461 Computer Security. CSE 462a Fundamental of Database. CSE 463x CSE Elective II. CSE 464a Artificial Intelligence. ECE 465 Information Theory and Coding. ECE 466 Digital Signal Processing.</p> <p>Optional Courses: Electives I and II Optional courses required for named endorsements (if applicable)</p>	<p>Diploma of Higher Education (Dip. HE)</p> <p>NA</p>
Level6	<p>Compulsory Courses Term : Fall ECE 551 Electrical Energy Conversion. ECE 552 Mobile Communication Systems. CSE 553x CSE Elective III. CSE 554 Graduation Project (Part I).</p> <p>Term : Spring ECE 561 VLSI. HUM 562 Ethics, Safety and Health. CSE 563x CSE Elective IV. CSE 564 Graduation Project (Part II).</p> <p>Optional Courses: Electives III and IV Optional courses required for named endorsements (if applicable)</p>	<p>Honours Degree: BSc. (Hons.) , Computer Systems Engineering 168 Credits.</p> <p>NA</p>

CSE Five-Year Plan:

56 Courses					168 Credits				
Fall Semester					Spring Semester				
Year 1	Code	Subject	Cr.	Prereq.	Year 1	Code	Subject	Cr.	Prereq.
	MAT151	Calculus I	3	None		MAT161	Calculus II	3	MAT151
	BSC152	Engineering Physics I	3	None		BSC162	Engineering Physics II	3	BSC152
	GSE153	Engineering Mechanics I	3	None		GSE163	Engineering Mechanics II	3	GSE153
	GSE154	Engineering Graphics	3	None		BSC164	Chemistry	3	None
	COM155	Intr. to Information Technology	3	None		GSE165	WorkShop Technology	3	None
ENG156	Academic English Writing	3	None	ENG166	Technical English Writing	3	ENG156		
Year 2	Code	Subject	Cr.	Prereq.	Year 2	Code	Subject	Cr.	Prereq.
	MAT251	Linear Algebra	3	MAT161		MAT261	Differential Equations	3	MAT161
	BSC252	Modern Physics	3	BSC162		ESE262	Physics of Electrical Materials	3	BSC252
	ESE253	Electric Circuit Analysis I	3	BSC162		ESE263	Electric Circuit Analysis II	3	ESE253
	ECE254	Digital Logic Design I	3	Co -Req ESE253		ECE264	Digital Logic Design II	3	ECE254
	COM255	Computer Programming I	3	COM155		COM265	Computer Programming II	3	COM255
ENG256	Research English Writing	3	ENG166	SOC266	Project Management Systems	3	ENG256		
Year 3	Code	Subject	Cr.	Prereq.	Year 3	Code	Subject	Cr.	Prereq.
	MAT351	Mathematical Analysis and Numerical Methods	3	MAT261		MAT361	Probability & Statistics	3	MAT351
	CSE352	Microprocessor Systems	3	ECE264 + COM265		CSE362	Digital System Interfacing	3	CSE352 + COM265
	ECE353	Electronic Circuits Analysis I	3	ESE263		ECE363	Electronic Circuits Analysis II	3	ECE 353
	CSE354	Algorithms & Data Structure	3	COM265		CSE364	Operating Systems	3	CSE354
	ECE355	Data Communication	3	MAT251		ECE365	Linear Systems	3	ESE263+ MAT351
ECE356	Electronic Measurement Instruments	3	ESE263	ECE366	Communication Networks	3	ECE355		
Year 4	Code	Subject	Cr.	Prereq.	Year 4	Code	Subject	Cr.	Prereq.
	CSE451	Object-Oriented Programming	3	CSE354		CSE461	Computer Security	3	ECE366 + CSE364
	CSE452	Software Engineering	3	CSE354		CSE462	Fundamentals of Database Design	3	CSE454
	CSE453x	CSE Elective I	3	As per elective		CSE463x	CSE Elective II	3	As per elective
	CSE454	System Analysis and Design	3	CSE354		CSE464	Artificial Intelligence	3	CSE454
	ECE455	Automatic Control Systems	3	ECE365		ECE465	Information Theory & Coding	3	ECE365
CSE456	Computer Architecture	3	CSE362	ECE466	Digital Signal Processing	3	ECE365		
Year 5	Code	Subject	Cr.	Prereq.	Year 5	Code	Subject	Cr.	Prereq.
	ESE551	Energy Conversion	3	ECE455		ECE561	VLSI	3	ECE264 + ECE363
	ECE552	Mobile Communication Systems	3	ECE464		GSE 562	Ethics, Safety and Health	3	5th year standing
	CSE553x	CSE Elective III	3	As per elective		CSE563x	CSE Elective IV	3	As per elective
CSE554	Graduation Project (Part I)	3	Min 138 Cr.	CSE564	Graduation Project (Part II)	3	CSE554		

Computer Systems Engineering Electives:

Students majoring in CSE shall choose 4 courses (12 credit hours) to support the graduation project which will be in one of the following two areas:

- Intelligent Systems
- Multimedia and Internet Computing

The courses are selected from the following two lists of modules:

Intelligent Systems	Multimedia and Internet Computing
CSE 4531: Industrial Electronics in Practice. CSE 4532: Advanced Operating Systems.	CSE 4533: Robot Dynamics and Control. CSE 4534: File Access and Management.
CSE 4631: Cryptography. CSE 4632: Human Computer Interaction.	CSE 4633: Theory of Computing. CSE 4634: Digital Image Processing.
CSE 5531: Web Design Concepts. CSE 5532: Advanced Database Systems.	CSE 5533: Speech Signal Processing. CSE 5534: Special Topics in Electronics. HUM5535: Entrepreneurship and Small Business Management
CSE 5631: Spread Spectrum Techniques. CSE 5632: Neutral Networks. CSE 5635: Advanced Artificial Intelligence	CSE 5633: Compiler Design. CSE 5634: Special Topics in Computer Engineering CSE 5636: Advanced Topics in Computer Engineering

K. Faculty Regulations: Computer Systems Engineering Programmes

- Engineering students who passed the English Placement Test, and registered ENG156 or above, must complete 56 courses (168 credit hours) with a Cum. GPA 2.0 as a minimum, in not less than four years and half-academic years.
- The 56 courses are distributed over the 5 academic years as follows:

level	Fall Semester		Spring Semester	
	Courses	Credits	Courses	Credits
1 st	6	18	6	18
2 nd	6	18	6	18
3 rd	6	18	6	18
4 th	6	18	6	18
5 th	4*	12	4*	12

*including the Graduation Project (Part I & II)

Graduation Project Regulations

- Registration of Graduation Project (Part I) requires the following:
 - A minimum Cum. GPA of 2.0.
 - A minimum credits of 138.
- Registration of Graduation Project (Part II) requires the following:
 - A minimum Cum. GPA of 2.0.

ENG 50 & 80 & 90 Student Regulations

- ENG50 students could register 3 courses, in addition to the intensive English course requirement.
- ENG80 students could register 4 courses, in addition to the intensive English course requirement.
- ENG90 students could register 5 courses, in addition to the intensive English course requirement.
- ENG50 & 80 & 90 students, who pass the intensive English requirements and more to register ENG156, will be treated as newcomers; and therefore, they can register 6 courses regardless of their GPA.

Faculty Regulations: Computer Systems Engineering Programme (cont.)

Students on Probation Regulations

- Student who gets a Cum. GPA less than 2.0, he/she becomes on probation and will not be allowed to register the following semester, unless he/she signs a warning and his/her parents will be notified officially.
- Student who reaches a probation level 6 or above, his/her parents will be notified officially, and will not be able to register the following semester unless his/her parents meet the Dean.
- Student, who continues to get a Cum. GPA less than 2.0 and reaches probation level 10, will be dismissed from the Faculty and will not be able to return.

Deprived Students Regulations

- Student is aware upon registration that he/she is not allowed being absent for any excuses (medical, travel, accident, or any other reasons) more than 25 % in any course. Otherwise, he/she will be deprived from the course, and be given an Automatic “F1”.

L. Subject/Programme Staff List and Contact Details

Computer Systems Engineering (CSE) Department Full-Time Staff Contacts

No	Name	Title	E-mail	Room
1	Samer Ibrahim Mohamed Aly	Associate Professor - Head of CSE Department	saibrahim@msa.edu.eg	E 212
2	Ahmed El-Sayed Ouda Ayoub	Lecturer	aelsayedo@msa.edu.eg	C 200
3	Manal Mustafa Ali Mustafa	Lecturer	mamustafa@msa.edu.eg	E 212

Full-Time Lecturer Assistant and Teaching Assistant Contacts

No	Name	Title	E-mail	Room
1	Mina Essam Saber	Teaching Assistant	-	D 126
2	Yomna Sameer Abd Rabbo Elkholy	Teaching Assistant	ysrabbo@msa.edu.eg	E 200