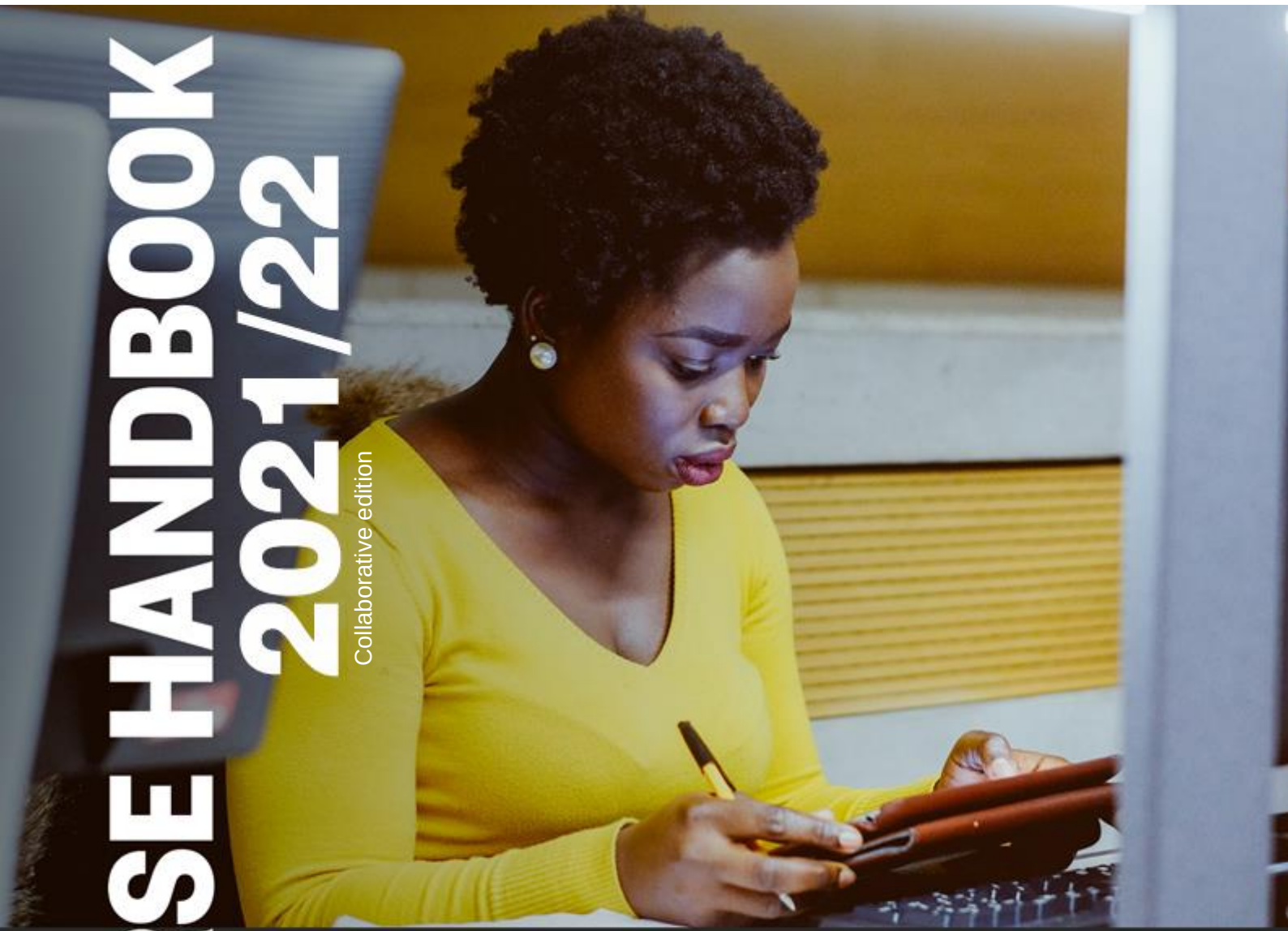
BSc (Hons) COMPUTER ENGINEERING AND SOFTWARE SYSTEMS

AIN SHAMS UNIVERSITY – FACULTY OF ENGINEERING



COURSE HANDBOOK 2021/22

Collaborative edition

NAF

University of East London

WELCOME AND INTRODUCTION

INTRODUCTION / WELCOME FROM THE PRINCIPAL

This handbook is intended for all students taking the BSc (Hons) Computer Engineering and Software Systems dual award from Ain Shams University and the University of East London. You will find it a useful source of information at the start of your course, but you should also keep it for reference purposes throughout your time here. It is, however, not intended to provide all you need to know, so you should also read the Ain Shams University Handbook.

Ain Shams University – Faculty of Engineering is aiming to be one of the best colleges known for their leadership regionally and internationally in engineering education and scientific research through interdisciplinary and unique academic courses that meet the needs of the community and contribute to sustainable development. It aims for preparation of distinguished graduates capable of keeping pace with global technological in various disciplines that meet the needs of local and regional markets and can conduct scientific research. This is applied through the creation of appropriate conditions for faculty members and their assistants and students, and through providing educational courses in advanced undergraduate studies, as well as establishing advisory centres and research labs which include sophisticated contribute to community service and to meet its needs.

Credit Hours Engineering Courses at the Faculty of Engineering - Ain Shams University (ASU-CHEP) is one of the outstanding models for engineering education in Arab Republic of Egypt, as it seeks to provide high-quality of engineering education based on interdisciplinary courses and the application of international standards of credit hours systems followed in the most prestigious universities in the world. Learning environment at ASU-CHEP focused on the graduation engineers equipped with skills, knowledge, and the ability to life-long learning.

Students enrolled onto dual award BSc (Hons) Computer Engineering and Software Systems course means that, as well as being a student of Ain Shams University, you are also a student of the Department of Engineering and Computing in the University of East London (one of the leading modern Universities in the UK for Engineering and Computing) and both institutions work together to ensure the quality and standards of the course on which you are registered.

We trust that you will enjoy studying with us and we warmly welcome you to the course.

Sincerely,
Prof. Dr. Omar Mohamed Elhusseiny
(Dean of Faculty of Engineering - Ain Shams University)

INTRODUCTION TO THE COURSE

❖ Course duration and modes of study

The dual award BSc (Hons) Computer Engineering and Software Systems course is a 4-year full-time course. The course awards dual awards of Bachelor of Science Degree from both Ain Shams University and the University of East London.

The minimum allowed study duration is eight main semesters. The maximum allowed study duration is 10 main semesters (5 years).

❖ Course aims and objectives

The BSc (Hons) Computer Engineering and Software Systems (CESS) course focuses extensively on software engineering with a strong emphasis on computer engineering. The CESS course opens a whole world of career opportunities to its graduates in software product lines, mobile and pervasive computing, cloud computing, embedded systems, multimedia, data analytics, and much more. The CESS program will meet the increasing demand for this specialization to meet the market needs at the national, regional, and international levels.

❖ Course Intended learning outcomes (ILO's)

The graduates of the Computer Engineering and Software Systems course should be able to:

- Apply systematic, disciplined, quantifiable approaches to the cost-effective development, operation and maintenance of software systems to the satisfaction of their beneficiaries.
- Build software solutions using different technologies, architectures, and life-cycle approaches in the context of different organizational structures, with demonstrated programming expertise.
- Foster the development, adoption, and sustained use of standards of excellence for computer and software engineering practices.
- Have a solid understanding of software development life cycles.
- Utilize the methodologies of hardware, software integration, and networking.
- Have hands-on experience of software analysis, modelling, design, and quality assurance of software systems.
- Evaluate software/hardware/networks engineering projects.
- Write secure computer programs on professional levels achieving acceptable quality measures in software development.
- Apply software engineering methodologies in the different phases of the software engineering life cycle.
- Apply the concepts of cloud computing, high-performance computing, mobile computing, and pervasive computing concepts in the appropriate environments.
- Analyse big-data systems.

- Utilize big-data analytics in cloud computing environments to solve real-world problems.
- Use different security measures and forensics tools in computing and networking systems.
- Communicate effectively and think critically about a wide range of issues arising in the context of working constructively on software and computer engineering projects.

❖ Course Structure & Content

The course structure can be seen in the following table

Module Code	Module Name	Component of Assessment	Percentage Weighting	Assessment Method
		2018 Bylaws		
Computer Engineering and Software Systems UEL Foundation (Level 3) - ASU Year 1				
CESS3001 20 Credits	Mathematics for Computing and Engineering	**PHM 111** Probability and Statistics	40%	Portfolio: Continuous Assessment of each single ASU course, including: For PHM111 Probability and Statistics: • Mathematical problem-solving task (10 problems) equivalent to 16% of the total module grade • Final exam (2 hours) equivalent to 24% of the total module grade. For PHM113 Differential Equations and Partial Differential Equations: • Mathematical problem-solving task (15 problems) equivalent to 24% of the total module grade • Final exam (3 hours) equivalent to 36% of the total module grade.
		PHM 113 Differential Equations and Partial Differential Equations	60%	
CESS3002 20 Credits	Analog and Digital Circuits	**EPM 118** Electrical and Electronic Circuits	60%	Portfolio: Continuous Assessment of each single ASU course, including: For EPM 118 Electrical and Electronic Circuits: • Problem-solving task (15 problems) equivalent to 24% of the total module grade • Final exam (3 hours) equivalent to 36% of the total module grade. For EPM 211 Properties of Electrical Materials: • Problem-solving task (10 problems) equivalent to 16% of the total module grade • Final exam (2 hours) equivalent to 24% of the total module grade.
		EPM 211 Properties of Electrical Materials	40%	
CESS3003 20 Credits	Computer Programming	**CSE 131** Computer Programming	50%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 131 Computer Programming: • Software project (report 1000 words) and equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.

		CSE 231 Advanced Computer Programming	50%	For CSE 231 Advanced Computer Programming: • Software project (report 1000 words) and equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.
CESS3004 20 Credits	Software Development 1	**CSE 334** Software Engineering	50%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE334 Software Engineering: • Software project (report 1000 words) and presentation (10 minutes) equivalent to 20% of the total module grade • Final exam (3 hours) equivalent to 30% of the total module grade. For PHM114 Numerical Analysis: • Mathematical problem-solving task (10 problems) equivalent to 20% of the total module grade • Final exam (3 hours) equivalent to 30% of the total module grade.
		PHM 114 Numerical Analysis	50%	
CESS3005 20 Credits	Computer Architecture	**CSE 111** Logic Design	40%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 111 Logic Design: • Assignments (1000 words) equivalent to 16% of the total module grade • Final exam (2 Hours) equivalent to 24% of the total module grade. For CSE 112 Computer Organization and Architecture: • Software project (report 1000 words) and presentation (10 minutes) equivalent to 24% of the total module grade • Final exam (3 Hours) equivalent to 36% of the total module grade.
		CSE 112 Computer Organization and Architecture	60%	
CESS3006 20 Credits	Mental Wealth and Professional Fitness: Report Writing and Communication	**ASU112** Report Writing and Communication Skills	100%	Portfolio: Continuous Assessment of the ASU course, including: For ASU112 Report Writing and Communication Skills: • Technical report (2000 words) and presentation (15 minutes) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.
Computer Engineering and Software Systems UEL Level 4 – ASU Year 2				
CESS4001 20 Credits	Data Structures and Algorithms	**CSE 331** Data Structures and Algorithms	50%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 331 Data Structures and Algorithms: • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. For CSE 332 Design and Analysis of Algorithms: • Software project (report 1000 words) and presentation (15 minutes) equivalent to 20% of the total module grade
		CSE 332 Design and Analysis of Algorithms	50%	

				• Final exam (3 Hours) equivalent to 30% of the total module grade.
CESS4002 20 Credits	Software Development 2	**CSE 232** Advanced Software Engineering	50%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 232 Advanced Software Engineering: • Software project (report 750 words) and presentation (15 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. For CSE 338 Software Testing, Validation and Verification: • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.
		CSE 338 Software Testing, Validation and Verification	50%	
CESS4003 20 Credits	Database Systems and Artificial Intelligence	**CSE 333** Database Systems	50%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 333 Database Systems: • Software project (report 1000 words) and presentation (15 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. For CSE 472 Artificial Intelligence: • Software project (report 1000 words) and presentation (15 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.
		CSE 472 Artificial Intelligence	50%	
CESS4004 20 Credits	Engineering Systems	**ECE 251** Signals and Systems Fundamentals	50%	Portfolio: Continuous Assessment of each single ASU course, including: For ECE 251 Signals and Systems Fundamentals: • Problem-solving task (10 problems) equivalent to 20% of the total module grade • Final exam (3 hours) equivalent to 30% of the total module grade. For CSE 312 Electronic Design Automation: • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.
		CSE 312 Electronic Design Automation	50%	
CESS4005 20 Credits	Operating Systems and Design of Compilers	**CSE 335** Operating Systems	50%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 335 Operating Systems: • Software project (report 750 words) and presentation (15 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. For CSE 439 Design of Compilers:
		CSE 439 Design of Compilers	50%	

				• Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30%of the total module grade.
CESS4006 20 Credits	Mental Wealth and Professional Fitness: Human Rights	**ASU 111** Human Rights	100%	Portfolio: Continuous Assessment of the ASU course, including: For ASU 111: Human Rights: • Technical report (2000 words) and presentation (15 minutes) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.
Computer Engineering and Software Systems UEL Level 5 – ASU Year 3				
CESS5001 20 Credits	Embedded Systems	**CSE 211** Introduction to Embedded Systems	50%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 211 Introduction to Embedded Systems: • Report (1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.
		CSE 411 Real-time and Embedded Systems Design	50%	For CSE 411 Real-time and Embedded Systems Design: • Report (1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.
CESS5002 20 Credits	Software Engineering 1	**CSE 233** Agile Software Engineering	100%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 233 Agile Software Engineering: • Software project (report 1000 words) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.
CESS5003 20 Credits	Computer Networks and Distributed Systems	**CSE 351** Computer Networks	50%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 351 Computer Networks: • Software project (report 1000 words) equivalent to 20% of the total module grade •Final exam (3 Hours) equivalent to 30% of the total module grade.
		CSE 354 Distributed Computing	50%	For CSE 354 Distributed Computing: • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.
CESS5004 20 Credits	Computer Vision	**CSE 483** Computer Vision	100%	Portfolio: Continuous Assessment of the ASU course, including: For CSE 483 Computer Vision: • Software project (report 1000 words) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.

CESS5005 20 Credits	Internet Programming	**CSE 341** Internet Programming	100%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 341 Internet Programming: • Software project (report 1000 words) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.
CESS5006 20 Credits	Mental Wealth and Professional Fitness: Engineering Economy and Investments	**EPM 119** Engineering Economy and Investments	100%	Portfolio: Continuous Assessment of the ASU course, including: For EPM 119 Engineering Economy and Investments: • Technical report (1500 words) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.
Computer Engineering and Software Systems (UEL) Level 6 – (ASU) Level 4				
CESS6001 20 Credits	High-Performance and Mobile Computing	**CSE 455** High-Performance Computing	50%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 455 High-Performance Computing: • Software project (report 750 words) and presentation (10 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. For CSE 431 Mobile Programming: • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.
		CSE 431 Mobile Computing	50%	
CESS6002 20 Credits	Software Engineering 2	**CSE 336** Software Design Patterns	50	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 336 Software Design Patterns: • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. For CSE 441 Software Project Management: • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.
		CSE 441 Software Project Management	50%	
CESS6003 20 Credits	Computer and Network Security	**CSE 451** Computer and Network Security	100%	Portfolio: Continuous Assessment of each single ASU course, including: For CSE 451 Computer and Network Security: • Software project (report 1000 words) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.
CESS6004 20 Credits	Computer & Systems Engineering Graduation Project (1)	**CSE 491** Computer & Systems Engineering Graduation Project	100%	Portfolio: Continuous Assessment of each single ASU course, including:

				For CSE 491 Computer & Systems Engineering Graduation Project (1): • Dissertation (20000 words) equivalent to 60% of the total module grade • Presentation (30 minutes) equivalent to 40% of the total module grade.
CESS6005 20 Credits	Computer & Systems Engineering Graduation Project (2)	**CSE 492** Computer & Systems Engineering Graduation Project (2)	100%	Portfolio: Continuous Assessment of each single ASU course, including: For Computer & Systems Engineering Graduation Project (2): • Dissertation (20000 words) equivalent to 60% of the total module grade • Presentation (30 minutes) equivalent to 40% of the total module grade.
CESS6006 20 Credits	Mental Wealth and Professional Fitness: Professional Ethics	**ASU 113** Professional Ethics and Legislations	100%	Portfolio: Continuous Assessment of the ASU course, including: For ASU 113 Professional Ethics and Legislations: • Technical report (2000 words) and presentation (15 minutes) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.

BSc Computer Engineering and Software Systems Course Structure

Modules are allocated credits, with each year consisting of 120 credits. Over the four years this will give a total of 480 credits.

The credits for a module indicate the time a student will need to spend on a module (either in classes or in self-study), with 10 student hours for each unit of credit. So a 30 credit module will map onto 300 student hours for example. 30 credit modules are delivered over two semesters, whereas 15 credit modules are delivered over one semester. The final Graduation Project is a 45 credits module that is delivered over two semesters.

All modules are core, which means that they must all be passed in order to gain the final BSc (Hons) Award.

KEY STAFF, CONTACT DETAILS AND STAFF ROLES

The Key Staff and Contact Details are correct at point of publication. You will be notified of any changes.

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Circumstances in which student can access UEL directly

You will find that for most issues that arise during your studies academic and administrative staff at your location of study will be able to help, and further details are provided in this handbook. If, however you have concerns that lie outside the remit of these staff, you can contact the UEL link person, in the first instance, who will be able to re-direct your enquiry as appropriate.

The UEL Academic Link Tutor is appointed to manage the relationship between the Course Leader at ASU- FoE and UEL.

Please contact your local Student Support/Administrative Office if you have any queries, in the first instance. If you have been advised by your local office to contact UEL then please send an e-mail to the UEL Academic Link Tutor at A.A.Edoh@uel.ac.uk

Link to the Student Handbook page for When to Contact UEL Directly:
https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/When-to-Contact-UEL-Directly.aspx

COURSE OPERATION AND STUDENT REGISTRATION

- **Course Delivery**

At levels 3 and 4 there will be a reliance on traditional methods of delivery consisting of a lecture module with tutorial support. In addition, other methods of delivery, such as Computer Underpinned Learning or research-based tasks, may be used; these styles are more student-centred and put more responsibility onto the students to achieve the intended learning outcomes.

Certain modules at levels 3 and 4 lend themselves to group working and assessment or operate in a mode where written examinations are inappropriate. The course team is very experienced in group assessment via its successful workshop modules.

At levels 5 and 6, whilst certain modules are delivered by traditional methods, there is more reliance on student-centred learning. Several modules take the opportunity to introduce students to research methods and encourage investigation of current published work.

You will be allocated to a tutorial group for each module of study. You are required to attend the group for which you are registered and you may not attend an alternative group informally.

- **Assessment Regulations**

The Module Handbooks each give detailed breakdowns of the weightings and volume of assignments. For a formal description of the assessment process, you should refer to the Academic Framework Module Regulations at:

www.uel.ac.uk/academicframework/.

Assessment Boards
Assessment Boards control and consider all assessments undertaken by students. The Board comprises a Chair, all those substantially involved as tutors and/or examiners and the external examiner(s). For more detailed information about the terms of reference of Assessment Boards within the Academic Framework Modular Regulations, please see details at ***www.uel.ac.uk/academicframework/***

Examinations and other assessments undergo a rigorous quality assurance process as follows:

- Module lecturers write the questions and produce solutions with marking schemes.
- Another lecturer checks the assessment questions, solutions and marking scheme.
- Copies of the assessment questions, solutions and marking scheme are sent, via the University of East London, to one of the External Examiners for checking and approval.
- Following the examinations, student answers are marked by the module lecturers.
- A sample of students' marked work is reviewed for accuracy by another lecturer.
- Marked samples of student submissions are sent to the University of East London for review.
- External Examiners visit the University of East London and check the students' work and the lecturers' marking.
- The results are considered at assessment boards at the University of East London.

❖ Course Organisation

The organisation and administration of the course will be carried out by a team consisting of the ASU Course Leader, UEL Academic Link person and Administrators. With the exception of the UEL Academic Link person, it is these people who are responsible for day-to-day running of the course.

The two groups of people you are most likely to meet regularly are:

The **Course Leader** is responsible for ensuring that:

- a variety of assessment tasks and types are employed and mapped across the course
- learning outcomes, and associated assessment tasks and criteria are monitored to ensure they:
    - Meet the published aims of the course
    - Are in keeping with qualifications descriptors and subject benchmark statements
    - Reflect increasing levels of demand, complexity and depth of study.

The **Module Leaders** are responsible for ensuring that all assessment tasks are:

- Appropriately designed to offer formative and summative opportunities
- Mapped to learning outcomes and enable students to demonstrate achievement of these.

- Devised at the same time, together with reassessment tasks (coursework, examinations etc)
- Efficient in terms of student and staff time
- Accompanied by a set of assessment criteria, task guidelines, submission dates and information regarding return of work, clearly published to students
- Clearly worded and presented, within designated timeframes
- Followed by appropriate feedback, within designated timeframes.

External Examiners

External Examiners are responsible for providing an independent check that proper standards are being maintained and are allocated to modules. They review each piece of assessment before it is available to students, will review samples of work each semester, and view student feedback and results.

❖ **Study Timings and Registration**

The academic year comprises two semesters:

- ***First main semester (Fall):*** Begins early September and lasts for 15 weeks.
- ***Second main semester (Spring):*** Begins early February and lasts for 15 weeks.

There is also an optional **summer semester** before the academic year, which begins late June and lasts for 7 weeks.

- New students' enrolment in the courses starts two weeks before the starting of the Fall semester, after fulfilling all the courses requirements and paying the enrolment fees, as recommended by the Programs Administration Council and set by the Council of the Faculty of Engineering.
- Registration for any semester takes place within two weeks before the starting day of the semester. Registration is not final until the full tuition fees of the semester are paid.
- Registration in the Summer semester is optional.
- The student must register 60 credits per semester. Registration is not final until the student pays the educational service fees for the semester.
- The student may register in the Summer semester in a maximum of two modules, unless it results in graduating the student conditional the approval of the academic advisor.
- The course academic regulations are available at https://eng.asu.edu.eg/education/undergraduates/bylaws
- The Local Attendance and Engagement policy is available at Link will be updated later

- UEL University's academic regulations are available at: *https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations*

It is essential that you log in to UEL direct and enrol with UEL using the UEL student number that you have been given prior to attending any lectures.

Once you have gained admission to the course you must login to the UEL direct page using your student username which will be your UEL ID number and password and complete the on-line enrolment. ASU – FoE will assist and ensure that you complete your online enrolment task promptly. UEL Direct is available at https://www.uel.ac.uk/students (click on 'new students')

For general enquiries concerning enrolment, you must contact your local Student Support/Administrative Office for guidance in the first instance and then if you are advised to contact UEL, please send an e-mail to the UEL Academic and Employer Partnerships Office at apo@uel.ac.uk.

EQUALITY AND DIVERSITY

ASU Equality and Diversity Strategy

- ASU commits to ensuring equality and diversity in its campus. Equality is ensured for everyone regardless any grounds of discrimination such as gender, age, colour, disability and religion.

- The university supports a safe environment for both working and studying. The university environment must be free of bullying, harassment, and any form of discrimination. Any act of the aforementioned will not be tolerated, and any complaints will be taken seriously. Anyone who feels being subjected to these acts is encouraged to raise complaints.

- All academic staff members, students and employees are supposed to treat each other with mutual respect and fairness. Everyone should respect the presence of individual differences, diversity in culture, personal opinions and beliefs.

- Equal opportunities and access to facilities are allowed for all staff and students. Each staff member or student is given full support to develop their skills and talents. Selection for employment, promotion, training, or any other benefits will be based on aptitude and ability.

Link to the UEL Equality and Diversity Strategy**:** https://www.uel.ac.uk/-/media/main/images/about/temp_governance_prototype/polices-and-regulations/students/equality-and-diversity-policy-090615.ashx?la=en&hash=A1327CCC49248602E7683F626D9606B64550B646

COURSE MANAGEMENT

- The course pays special attention to the learning management system that helps students and staff members to intercommunicate effectively in terms of course material, assignment, term-work marks … etc.

- The course's learning management system is setup to have a webpage for each course studied during the semester. The student can access his courses from the main course web page.

- All electronic services provided to the students requires the use of university e-mail, hence, it is created automatically for the course's student when he is first enrolled to the course, and he retains this e-mail until he graduates.

- The Student Information System (SIS) is the place where students can access all their academic records. It can be reached on the main course web page, which also provides brief information about the mission and vision of the course, and the important dates related to student academic activities.

- Every student is assigned an Academic Advisor who is one of the faculty members and may continue with the student for the whole study duration. The Academic Advisor should follow-up with the student, assist him in selecting courses each semester, and request to place the student under probation for one semester.

- For each hour (lectures or tutorials) the instructor should have an office hour. It could be twice a week for 1.5 hours each. Office hours will be determined in the first class and will be posted on the instructor's office door.

- Students will be given a student handbook at the start of their course of study.

- Course Committees provide a formal structure for student participation and feedback on their course of study. Course committees provide a forum in which students can express their views about the management of the course, and the content, delivery and assessment of modules, in order to identify appropriate actions to be taken. Terms of reference are provided in Appendix D.

Students Involvement

There are different facilities that ensure students involvement that include:

❖ **Students' Affairs Administration**

The students' affairs administration is chaired by the Vice-Dean for education and students' affairs and is in the main building. This administration has representatives at the courses' administration offices (Ground Floor of the New Educational Building). The secretariat of each course (at the courses secretariat office – Ground Floor of the New Educational Building) also collaborates with the previous representatives in accomplishing the following tasks:

- Archiving of the students' files.
- Issuing the students' identity cards.
- Electronic recording of the students' course registration, add/drop, and withdraw.
- Processing the students' course evaluation at the end of each semester.

- Issuing the students' records at the end of each semester.
- Issuing the students' graduation certificates.
- Processing the students' appeals and requests.

❖ **Students' Union**

The students' union is also under the general supervision of the Vice-Dean for education and students' affairs. As part of the Faculty of Engineering, the courses' students are members in the union and have similar rights and benefits as the mainstream students, including entering the union's yearly elections.

❖ **Financial Affairs Administration**

The courses' financial affairs administration, located at the Ground Floor of the New Educational building, is responsible for issuing the payment orders for the students' tuition fees at the beginning of each semester. The administration is also responsible for collecting the copies of the students' payment receipts, which should be presented by the students after making their payment at the Faculty treasury. Courses' students who fail to present copies of the payment to the courses' financial administration risk having no payment records at the courses.

❖ **Library**

The Faculty library provides a service specially designed to fulfil the requirements of all academic courses. It is open for all Faculty members for reference use and borrowing. The main library has a shelf space for over 40,700 books on all subjects forming part of the faculty curriculum. It has 353 technical periodicals (the faculty receives 23 periodicals yearly in a regular basis). Additionally, it has more than 3,340 Ph.D. and M.Sc. theses resulted from all Faculty departments' activities. The students' library has multiple copies of textbooks, amounting to over 13,000, available for short-term borrowing to students. According to the Engineering Faculties libraries development project, annexed to the Ministry of Higher Education, the library is interconnected through the Internet with all the libraries of engineering faculties nationwide. VTLS library software system has been installed which contains all the modules to provide library services to the faculty community.

❖ **ASU -FoE Information Systems**

ASU - FoE have a solid understanding of the importance of information systems in each aspect in the CHEP academic environment. Hence, a comprehensive web portal has been created for CHEP that has all information and services needed for the student, parents, and staff members. Learning Management System (LMS) is one of the available services at the ASU - FoE portal for all students mainly to have their course materials posted regularly on it with a dedicated protected access to the courses he enrolled in them. More importantly, a comprehensive Student Information System (SIS) is another service that is available on the portal to all parties involved in the system. The student can use SIS to access his academic records, do course registration, request to open courses that are not offered, or even request advising appointment with his academic advisor.

MORE INFORMATION

The Committee's terms of reference is provided at:
https://uelac.sharepoint.com/LearningandTeaching/Pages/students-area.aspx

ATTENDANCE AND ENGAGEMENT

Teaching Policy

- **Language:** English language should be used for lecturing, discussions, exams, and all verbal and electronic communications. Use of Arabic language is strictly forbidden even in one-to-one conversation between the instructor and the students.

- **Course Syllabus**: Each course syllabus should contain: course objectives, textbook, outline, material, assessments, grading policy and outcome. Outline should contain sections covered every week with reference to chapters/sections in the textbook. The instructor should give the course syllabus to the students in the first class. The syllabus serves as a contract between the instructor and the students.

- **Textbook**: The instructor is free to select/recommend a textbook but it should be international and available. The textbook information should be provided to the administration office or the unit head before the first class of the course.

- **Attendance**: Attendance is taken in lecture and tutorial classes. Students should not be allowed to enter the class after 5 minutes from the scheduled time. No eating, drinking, or mobile use in the class. If the student wants to leave the class for any reason, he will not be allowed to come back to the class. The student's attendance should not be less than 75% during the course. Otherwise, the student should not be allowed to attend the final exam.

- **Assignment**: One major assignment is given. Its wait and nature varies from module to module. However, the nature of the assignment is specified in the module specs. The assignment is collected at the end of the tutorial period of the next week. Submission of assignment is according to the submission matrix published at the start of each semester. The graded assignment should be returned and discussed with the class.

- **Exam**: The final exam weight is variable and specified in the module specs. It should be a comprehensive exam covering all material. The student fails the course if he gets less than 30% of the final exam total grade. Instructors may select to have all exams open-book or closed-book.

KEY DATES

- Link to ASU-FoE academic calendar
https://eng.asu.edu.eg/download?sid=wSMu%2BZdmLu39tptbD%2F%2B%2FQHW3iju6CpFt%2FnfsOofLVkM%3D

- Link to UEL's academic calendar
  https://www.uel.ac.uk/student-life/key-dates

MODULE SPECIFICATIONS

Module specifications define each module of study on the course. They will include **learning outcomes** and the **aims** for each module. These documents form part of the 'definitive' documentation for the course. It is important to note that reading lists and indicative content are likely to change.

Module Title: Mathematics for Computing and Engineering	**Module Code: CESS3001** **Level: 3** **Credit:** 20 **ECTS credit: 10**	**Module Leader**
Pre-requisite: None	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module **Bylaw 2018**	
Course	**Weight**
PHM 111 Probability and Statistics	40%
PHM 113 Differential Equations and Partial Differential Equations	60%

Main Aim(s) of the Module:

- To provide students with an understanding of foundational mathematics material required for computer science and engineering.
- To prepare students for the more advanced mathematics they will encounter on their degree.

Main Topics of Study:

- Basic Concepts of Probability.
- Rules of Probability: Conditional Probability and Bayes' Theorem.
- Discrete and continuous random variables and their distributions
- Organization data, Frequency Distributions, Cumulative frequency distribution and graphs
- Measures of central tendency and measures of dispersion.
- Coefficient of variation and coefficient of skewness.
- Introduction to classification of differential equations, first order equations
- Higher order differential equations: homogenous
- Cauchy-Euler equations
- Laplace transform
- Fourier series
- Partial differential equations

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Identify the basic statistical concepts related to data collection, organization, representation and measures for data description and summarization. (COI)
2. Describe the fundamental probability concepts, including random variables and distributions. (COI)
3. Explain the difference between ordinary and partial differential equations in addition to identifying their different types and classifications. (COI)

Thinking skills

4. Utilize mathematical and statistical methods to solve problems (COI)
5. Interpret and analyse data. (COI)

Subject-based practical skills

6. Use the knowledge of statistics and addition rules for probability to solve practical engineering problems. (COI)
7. Use mathematical models for solving differential equations and partial differential equations. (COI)

Skills for life and work (general skills)

8. Develop skills related to teamwork, effective communication, creative thinking, aproblem solving in different fields. (PI, SEI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

"Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work."

Assessment methods which enable students to demonstrate the learning outcomes for the module; please define as necessary:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio: Continuous Assessment of each single ASU course, including: **For PHM111 Probability and Statistics:** • Mathematical problem-solving task (10 problems) equivalent to 16% of the total module grade • Final exam (2 hours) equivalent to 24% of the total module grade. **For PHM113 Differential Equations and Partial Differential Equations:** • Mathematical problem-solving task (15 problems) equivalent to 24% of the total module grade • Final exam (3 hours) equivalent to 36% of the total module grade.	100%	All

Reading and resources for the module:

Core

- WACKERLY, D. D., MENDENHALL, W., & SCHEAFFER, R. L. (2008). *Mathematical statistics with applications*. 7th Ed., Thomson Brooks/Cole, Belmont, CA.
- ZILL, D. G., & ZILL, D. G. (2001). *A first course in differential equations with modelling applications*. Brooks/Cole Thomson Learning, Pacific Grove, CA.

Recommended

- ZILL, D.G. AND CULLEN, M.R. (2001) Differential Equations with Boundary-Value Problems. 5th Ed., Brooks/Cole, California.
- KREYSZIG, E.; KREYSZIG, H. & NORMINTON, E. J. (2011), *Advanced Engineering Mathematics*, Wiley, Hoboken, NJ.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials 125 hours
2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 75 hours
Total hours (1 and 2):	200 hours

Module Title: Analog and Digital Circuits	**Module Code: CESS3002** **Level:** 3 **Credit:** 20 **ECTS credit: 10**	**Module Leader**

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None

Locations of delivery: Ain Shams University Campus

ASU Courses that pack the UEL Module
Bylaw 2018

Course	Weight
EPM 118 Electrical and Electronic Circuits	60%
EPM 211 Properties of Electrical Materials	40%

Main Aim(s) of the Module:

- To provide the fundamental skills necessary to analyse and design electrical and electronic circuits
- To distinguish between different classes of materials and outline the origin of their mechanical, electrical, thermal, optical and magnetic properties.

Main Topics of Study:

- Electrical Circuits
- Network theorems
- Alternating current circuits
- Diodes and Zener models
- Diode Applications
- Operational Amplifiers
- Op-amp applications
- Classification of materials
- Atomic structure and bonding in solids
- Metallic' Structure, types and applications
- Types and application of Metals
- Ceramics' structure, types, and applications
- Structure of Polymers, types, and applications
- Imperfection in Metals and Ceramics
- Mechanical properties

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Illustrate the techniques and theorems for solving DC and AC electric circuits. (COI)
2. Identify the governing laws of semiconductor devices and the main applications of diodes and operational amplifiers. (COI)
3. Distinguish between different classes of materials (metals, ceramics, polymers), associate terms with the appropriate types of structures. (COI)

Thinking skills

4. Apply different techniques and theorems for solving DC and AC electric circuits. (COI)
5. Outline the origin of mechanical, electrical, thermal, optical and magnetic properties and explain how they are related to their structure. (COI)

Subject-based practical skills

6. Apply basic laws and theorems on electrical and electronic circuits in the lab. (COI)
7. Categorize practically different materials and their conductivities. (COI)

Skills for life and work (general skills)

8. Work and communicate effectively in a team. (SEI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio: Continuous Assessment of each single ASU course, including: **For EPM 118 Electrical and Electronic Circuits:** • Problem-solving task (15 problems) equivalent to 24% of the total module grade • Final exam (3 hours) equivalent to 36% of the total module grade. **EPM 211 Properties of Electrical Materials:** • Problem-solving task (10 problems) equivalent to 16% of the total module grade • Final exam (2 hours) equivalent to 24% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Alexander, C.K. and Sadiku, M.N.O. (2017). *Fundamentals of electric circuits*. New York, Ny: Mcgraw-Hill Education.
- Boylestad, R.L. and Nashelsky, L. (2013). *Electronic devices and circuit theory*. 11th Ed., Pearson Prentice Hall, Upper Saddle River, N.J.
- Hummel, R.E. (2006). *Understanding Materials Science: History, Properties, Applications.* 2nd Ed., Springer, New York.

Recommended

- Mehta, V.K. and Rohit Mehta, (2005). *Principles of electronics.* 7th Ed., S. Chand & Co Ltd, New Delhi.
- Sedra, A. S. and Smith, K. C., (2019). *Microelectronic Circuits.* 8th Ed., Oxford University Press, New York.
- Hayt, W.H. and Buck, J.A. (2012). *Engineering electromagnetics*. 8th Ed., Mcgraw-Hill, New York.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials/ Practical 125 hours
2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 75 hours
Total hours (1 and 2):	200 hours

Module Title: Computer Programming	**Module Code: CESS3003** **Level: 3** **Credit:** 20 **ECTS credit: 10**	**Module Leader**

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: Ain Shams University Campus	

ASU Courses that pack the UEL Module
Bylaw 2018

Course	**Weight**
CSE 131 Computer Programming	50%
CSE 231 Advanced Computer Programming	50%

Main Aim(s) of the Module:

- To demonstrate the understanding of object-oriented programming and its underlying concepts.

Main Topics of Study:

- Programming Languages and controls
- Object-oriented Concepts and Design
- Data access and control management.
- GUI and Data representation

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Understand various programming concepts and different data structures. (COI)
2. Get the knowledge for designing programs using classes and interfaces. (COI, IC, DP)
3. Get the knowledge for GUI programs potentially using graphics. (COI, IC)
4. Understand exception handling, streams programming, multithreading, and networking. (COI, IC)

Thinking skills

5. Derive different solution alternatives for the engineering problems. (COI, DP, IC)

Subject-based practical skills

6. Design and write object-oriented programs to solve engineering problems. (COI, DP, IC)
7. Use object-oriented constructs in program implementations. (COI, DP)

Skills for life and work (general skills)

8. Develop skills related to teamwork, effective communication, creative thinking, and problem solving. (SEI, PI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 131 Computer Programming:** • Software project (report 1000 words) and equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. **For CSE 231 Advanced Computer Programming:** • Software project (report 1000 words) and equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Malik, D.S. (2018). *C++ programming: from problem analysis to program design*. 8th Ed., Cengage Learning, Boston.
- Reges, S. and Stepp, M. (2020). *Building Java programs: a back-to-basics approach*. 5th Ed., Pearson, London, United Kingdom.

Recommended

- Horstmann, C.S. (2019). *Core Java*. 11th Ed., Pearson, Boston.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials/ Practical 140 hours

2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 60 hours
Total hours (1 and 2):	200 hours

Module Title: Software Development 1	**Module Code: CESS3004** **Level: 3** **Credit:** 20 **ECTS credit: 10**	**Module Leader**
Pre-requisite: None	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module **Bylaw 2018**	
Course	**Weight**
CSE 334 Software Engineering	50%
PHM 114 Numerical Analysis	50%

Main Aim(s) of the Module:

- To provide the fundamental skills of Information systems modelling and design using various Software Engineering techniques.

Main Topics of Study:

- Software Development Life Cycle.
- UML.
- Data Flow Diagrams.
- System Analysis and Design Methodologies
- Case Tools
- Project Management
- Numerical solution of Non-linear Equations.
- Curve Fitting.
- Numerical Integration.
- Numerical Methods for Solving Differential and Partial Differential Equations.

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Describe various A/D methodologies, methods and tools used for the modelling, design and development of information systems. (COI, DP, IC)
2. Define numerical integration and differentiation methods, interpolation and curve fitting techniques. (COI)

Thinking skills

3. Analyze and compare different methods used in system modeling. (COI, DP, IC)
4. Solve linear system of equations using Gauss Elimination, Jacobi and Gauss Seidel method. (COI)
5. Solve differential and partial differential equations numerically by using different methods. (COI)

Subject-based practical skills

6. Use a variety of diagram types from a CASE tool as part of the overall design process. (COI, DP, IC)
7. Apply numerical integration and numerical solution of differential equations to solve practical engineering problems. (COI)

Skills for life and work (general skills)

8. Develop skills related to teamwork, effective communication, creative thinking, and problem solving. (SEI, PI, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE334 Software Engineering:** • Software project (report 1000 words) and presentation (10 minutes) equivalent to 20% of the total module grade • Final exam (3 hours) equivalent to 30% of the total module grade. **For PHM114 Numerical Analysis:** • Mathematical problem-solving task (10 problems) equivalent to 20% of the total module grade • Final exam (3 hours) equivalent to 30% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Sommerville, I. (2016). *Software engineering*. 10th Ed., Pearson Education, Harlow.
- Chapra, S.C. and Canale, R.P. (2015). *Numerical methods for engineers*. 7th Ed., Mcgraw-Hill Education, New York.

Recommended

- Pressman, R.S. and Maxim, B.R. (2015). *Software engineering: a practitioner's approach*. 8th edition, Mcgraw-Hill Education, New York.
- Schach, S.R. (2011). *Object-oriented and classical software engineering*. 8th Ed., Mcgraw-Hill, New York.
- Kreyszig, E.; Kreyszig, H. & Norminton, E. J. (2011), *Advanced Engineering Mathematics*, Wiley, Hoboken, NJ.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials 125 hours
2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 75 hours
Total hours (1 and 2):	200 hours

Module Title: Computer Architecture	**Module Code: CESS3005** **Level: 3** **Credit:** 20 **ECTS credit: 10**	**Module Leader**

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None

Locations of delivery: Ain Shams University Campus

ASU Courses that pack the UEL Module
Bylaw 2018

Course	**Weight**
CSE 111 Logic Design	40%
CSE 112 Computer Organization and Architecture	60%

Main Aim(s) of the Module:

- To provide the fundamental skills necessary to describe the structure and behaviour of digital computers at several levels of abstraction.
- To identify a pipeline datapath for a computer and identify pipelining hazards, interrupts and ways to deal with them.
- To demonstrate the power of computers in applications of electronics.

Main Topics of Study:

- Logic Gates
- Combinational Logic Design
- Combinational Logic Circuits
- Arithmetic Functions for Circuit Design
- Sequential Circuits
- Register Transfers
- The MIPS instruction set and assembly programming
- MIPS single-cycle implementation
- MIPS pipelined implementation
- Pipelining hazards
- Exceptions and interrupts
- Superscalar architectures
- Caching
- Virtual Memory

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)

- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Explain the concept of combinational and sequential logic circuits. (COI)
2. Illustrate how a data-path with or without pipelining is designed. (COI)
3. Infer the effect of the memory hierarchy on performance. (COI)

Thinking skills

4. Simplify logic circuits using Boolean algebra and Karnaugh maps. (COI)
5. Analyse and design combinational and sequential logic circuits. (COI)
6. Write MIPS assembly programs and translate C programs to assembly as well as assembly programs to machine code. (COI, DP, IC)

Subject-based practical skills

7. Design the digital computer components and processor's data path. (COI, DP, IC)

Skills for life and work (general skills)

8. Work and communicate effectively in team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals. (SEI, PI, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 111 Logic Design:** • Assignments (1000 words) equivalent to 16% of the total module grade • Final exam (2 Hours) equivalent to 24% of the total module grade. **For CSE 112 Computer Organization and Architecture:** • Software project (report 1000 words) and presentation (10 minutes) equivalent to 24% of the total module grade • Final exam (3 Hours) equivalent to 36% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Mano, M. M. (2017) *Digital Design.* 6th Ed.*,* Pearson Education.

- Patterson, D. A. and Hennessy, J. L. (2016) *Computer Organization and Design: The Hardware/Software Interface*, 5th Ed., Elsevier.

Recommended

- Brown, S. and Vranesic, Z. (2005) *Fundamentals of Digital Logic with VHDL Design*, 2nd Ed., McGraw Hill.
- Katz, R. H. and Borriello, G. (2005) *Contemporary Logic Design*, 2nd Ed., Prentice Hall.
- Baer, J-L. (2010) *Microprocessor Architecture: From simple pipelines to chip multiprocessors*, Cambridge University Press, Cambridge.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials/Practical 125 hours
2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 75 hours
Total hours (1 and 2):	200 hours

Module Title: Mental Wealth and Professional Fitness: Report Writing and Communication	**Module Code: CESS3006** **Level:** 4 **Credit:** 20 **ECTS credit:** 10	**Module Leader**
Pre-requisite: None	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: ASU Campus		

ASU Courses that pack the UEL Module

Bylaw 2018

Course	**Course**
ASU112 Report Writing and Communication Skills	100%

Main Aim(s) of the Module:

- Gather information and data.
- Choose suitable visual aids.
- Use computer and construct tables, graphs and different visual Aids.
- Prepare, write and revise a report.
- Write a good paragraph.

Main Topics of Study:

- Introduction to Technical Writing
- Guidelines for writing noise free documents
- Formal report components, types of engineering reports
- Writing Common Engineering Reports: content and appearance
- Visual Aids
- Communication types, nonverbal communication
- Business Communication Medias
- How to evaluate written material and oral presentations
- Infographics in reports and presentations, types of graphs

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Identify the technical report contents and the different types of engineering documents.(COI, IC)
2. Recognize the guidelines for writing noise free documents and presentations. (COI, IC)

Thinking skills

3. Prepare, organize, outline and edit a report. (COI, IC)
4. Apply useful guidelines to the writing process. (COI, IC)

Subject-based practical skills

5. Write an engineering report and a report cover letter. (COI, IC, EE)
6. Construct tables and graphics (infographics). (COI, IC)

Skills for life and work (general skills)

7. Work and communicate effectively in team. (SEI, CC, CI)
8. Manage time, tasks, and resources efficiently. (PI, IC, EE)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module inthe form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of the ASU course, including: **For ASU112 Report Writing and Communication Skills:** • Technical report (2000 words) and presentation (15 minutes) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Beer, D., and McMurrey, D. (2009) *A Guide to Writing as an Engineer*, 3rd Ed., John Wiley &Sons, Hoboken, N.J.

Recommended

- Joan Van Emden and Becker, L.M. (2018). *Writing for engineers*. 4th Ed., Palgrave, London.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials 140 hours

2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 60 hours
Total hours (1 and 2):	200 hours

Module Title: Data Structures and Algorithms	**Module Code:** CESS4001 **Level: 4** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: Computer Programming	**Pre-cursor:** None	
Co-requisite: None	**Excluded combinations:** None	
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module **Bylaw 2018**	
Course	**Weight**
CSE 331 Data Structures and Algorithms	50%
CSE 332 Design and Analysis of Algorithms	50%

Main aim(s) of the module:

By the end of this module, the student will be able to:

- To demonstrate the understanding of various algorithms, data structures and data modelling techniques.
- Differentiate between structured and object-oriented paradigms.

Main topics of study:

- Data Structures and Algorithms
- Design and Analysis of Algorithms
- Search algorithms
- Sort algorithms
- Algorithm optimisation
- Recursion

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Explain data structures, algorithms and computer systems. (COI)
2. Describe the methods used in algorithm complexity or performance in addition to the fundamental algorithms used in sorting and searching of data structures. (COI, DP, IC)

Thinking skills

3. Analyse and compare algorithms complexity using asymptotic analysis, and distinguish between the worst-, average-, and best-case analysis of algorithms. (COI, DP, IC)
4. Analyse and categorize the performance of sorting algorithms and the design strategies that the algorithms embody. (COI)
5. Distinguish the different types of algorithm paradigms and evaluate when an algorithmic design situation calls for it. (COI, DP, IC)

Subject-based practical skills

6. Solve different engineering problems with alternative solutions using different algorithms. (COI, DP, IC, EE)
7. Program in the major computer programming paradigms. (COI, DP, IC, EE)

Skills for life and work (general skills)

8. Solve complex problems using a variety of methodologies. (COI, DP, EE, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 331 Data Structures and Algorithms:** • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. **For CSE 332 Design and Analysis of Algorithms:** • Software project (report 1000 words) and presentation (15 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Weiss, M. A. (2013) *Data Structure and Algorithm Analysis in C++.* 4th Ed., Pearson.
- Levitin, V. (2012) *Introduction to the Design and Analysis of Algorithms.* 3rd Ed., Addison-Wesley.

Recommended

- Kleinberg, J. and Tardos, E. (2005) *Algorithm Design.* Pearson/Addison-Wesley, Boston.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials/ Practical 125 hours
2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 75 hours
Total hours (1 and 2):	200 Hours

Module Title: Software Development 2	**Module Code:** CESS4002 **Level: 4** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: Software Development 1	**Pre-cursor:** None	
Co-requisite: None	**Excluded combinations:** None	
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module **Bylaw 2018**	
Course	**Weight**
CSE 232 Advanced Software Engineering	50%
CSE 338 Software Testing, Validation and Verification	50%

Main aim(s) of the module:

By the end of this module, the student will be able to:

- Design, implement and test software systems based on object-oriented architecture.
- Develop and analyse a variety of software algorithms.

Main topics of study:

- Classes and Objects
- Inheritance
- Interfaces and Abstract Classes
- Software Engineering Concepts
- Design Models
- User interface design
- Software cost estimation techniques
- Software Testing, Validation and Verification
- White-box and black-box testing
- Testing frameworks such as JUnit
- CASE tools

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Describe a range of software engineering methodologies. (COI, DP, IC)
2. Illustrate the different testing levels methodologies. (COI, DP, IC)

Thinking skills

3. Use a variety of diagram types from a CASE tool as part of the overall design process. (COI, DP, IC)
4. Solve different engineering problems with alternative solutions for testing and validation. (COI, DP, IC)

Subject-based practical skills

5. Use computer testing aided design tools like Junit. (COI, DP, IC)
6. Plan tests and accomplish maximum bug-discovery in software applications. (COI, DP, IC, EE)

Skills for life and work (general skills)

7. Work and communicate effectively in a team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals. (SEI, PI, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 232 Advanced Software Engineering:** • Software project (report 750 words) and presentation (15 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All

For CSE 338 Software Testing, Validation and Verification: • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.		

Reading and resources for the module:

Core

- Sommerville, I. (2016). *Software engineering*. 10th Ed., Pearson Education, Harlow.
- Spillner, A., Tilo Linz and Schaefer, H. (2014). *Software Testing Foundations. 4th* Ed., Rocky Nook, Santa Barbara, Ca

Recommended

- Pressman, R.S. and Maxim, B.R. (2015). *Software engineering: a practitioner's approach*. 8th edition, Mcgraw-Hill Education, New York.
- Schach, S.R. (2011). *Object-oriented and classical software engineering*. 8th Ed., Mcgraw-Hill, New York.
- Kaner, C., Bach, J. and Pettichord, B. (2007) *Lessons Learned in Software Testing.* Wiley.
- Black, R. (2019) *Foundations of Software Testing ISTQB Certification*, 4th Ed., Cengage Learning.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials/ Practical 125 hours
2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 75 hours
Total hours (1 and 2):	200 Hours

Module Title: Database Systems and Artificial Intelligence	**Module Code: CESS4003** **Level: 4** **Credit:** 20 **ECTS credit: 10**	**Module Leader**

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None

Locations of delivery: Ain Shams University Campus

ASU Courses that pack the UEL Module
Bylaw 2018

Course	**Weight**
CSE 333 Database Systems	50%
CSE 472 Artificial Intelligence	50%

Main Aim(s) of the Module:

- To provide an understanding of methods of data organisation and retrieval.
- To provide students with concepts for understanding information systems and skills for modelling data and functions.
- To develop students' knowledge of the fundamental principles of Database Management Systems.
- To provide students with the skills to design, implement and manage databases.
- Create intelligent solutions to concrete computational problems.
- Understand different searching techniques to real-world problems.
- Understand the role of game playing strategies in artificial intelligence.
- Use intelligent techniques in expert systems and intelligent agents
  Explain basic knowledge representation, problem solving, and learning methods used in artificial intelligence.

Main Topics of Study:

- Architecture for a database system.
- Relational model: Domain, relations, and relational integrity.
- SQL.
- The relational database language standard
- Database design theory and methodology
- Entity/Relationship model (ERM) and enhanced Entity/Relationship model (EERM).
- Normalization for relational database.
- Introduction to Artificial Intelligence
- Problem Solving: Informed & Optimal Search
- Adversarial Search
- Evolutionary Computing
- Propositional Logic
- First-Order Logic
- Knowledge Representation
- Machine Learning
- Artificial Neural Networks

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Explain the principles, techniques to create and manipulate data, and different design techniques of database systems as well as the concepts of ER diagrams. (COI, IC)
2. Outline and classify various search techniques (optimal, non-optimal, uninformed, informed). (COI)

Thinking skills

3. Analyse and compare different methods used in designing data and derive different solution alternatives for the engineering problems that are solved by database systems. (COI, IC, DP, EE)
4. Design intelligent computer-based systems. (COI, DP, IC, EE)

Subject-based practical skills

5. Use SQL language to process data. (COI, DP, IC)
6. Use SWI-Prolog interpreter to build and query a knowledge base and develop simple AI applications. (COI, IC)
7. Implement some search and game playing algorithms. (COI, DP, IC)

Skills for life and work (general skills)

8. Work and communicate effectively in a team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals. (SEI, PI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**

Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 333 Database Systems:** • Software project (report 1000 words) and presentation (15 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. **For CSE 472 Artificial Intelligence:** • Software project (report 1000 words) and presentation (15 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All

Reading and resources for the module:

- Russell , S. J. and Norvig, P. (2020). *Artificial intelligence : a modern approach*. 4th Ed., Pearson, Boston.
- Ramez Elmasri and Navathe, S.B. (2017). *Fundamentals of database systems*. 7th Ed., Pearson, Hoboken, New Jersey

- **Recommended**
- Silberschatz, A., Korth, H.F. and S Sudarshan (2020). *Database system concepts*. 7th Ed., Mcgraw-Hill Education, New York.
- Patrick Henry Winston (1993). *Artificial intelligence*. 3rd Ed., Addison-Wesley.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials/Practical 125 hours
2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 75 hours
Total hours (1 and 2):	200 hours

Module Title: Engineering Systems	**Module Code: CESS4004** **Level:** 4 **Credit:** 20 **ECTS credit: 10**	**Module Leader**
Pre-requisite: None	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module **Bylaw 2018**	
Course	**Weight**
ECE 251 Signals and Systems Fundamentals	50%
CSE 312 Electronic Design Automation	50%

Main Aim(s) of the Module:

- To design application specific digital integrated circuits
- To look at the building blocks of digital communication systems

Main Topics of Study:

- Sequential Design
- CAD Systems
- VHDL
- Routing
- Simulations
- Functional Verification
- Analysis of control systems using a variety of techniques
- Stability in control systems
- Design a PID controller using synthesis methods
- Signal Classifications
- Modulation Principals
- Fourier Transform
- Z- Transform
- MATLAB

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)

- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Describe basic integrated circuit subsystems and process flows. (COI)
2. Understand basic hardware description language HDL (VHDL/Verilog). (COI)
3. Explain time periodic signals properties and their analysis using Fourier series. (COI)

Thinking skills

4. Compile a synthesizable HDL code. (COI, IC)
5. Express band width requirements based on signal analysis. (COI)

Subject-based practical skills

6. Build a simple chip from specifications down to layout using CAD tools. (COI, DP, IC, EE)
7. Practice Matlab as a simulation tool. (COI, IC, DP)

Skills for life and work (general skills)

8. Work and communicate effectively in team. (SEI, PI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of each single ASU course, including: **For ECE 251 Signals and Systems Fundamentals:** • Problem-solving task (10 problems) equivalent to 20% of the total module grade • Final exam (3 hours) equivalent to 30% of the total module grade. **For CSE 312 Electronic Design Automation:** • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Ziemer, R.E., Tranter, W.H. and D Ronald Fannin (2014). *Signals and systems: continuous and discrete*. 4th Ed., Pearson Education Limited, Edinburgh Gate, Harlow.
- Pedroni, V.A. (2020). *Circuit design with VHDL*. The MIT Press, Cambridge, Massachusetts.

Recommended

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<tr><td colspan="2">

- Lavagno, L., Markov, I.L., Martin, G. and Scheffer, L. (2018). *Electronic design automation for IC implementation, circuit design, and process technology*. CRC Press, Boca Raton.
- Oppenheim, A.V., Willsky, A.S. and Syed Hamid Nawab (2014). *Signals & systems*. Pearson Education Limited, Edinburgh Gate, Harlow.

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<tr><td>Indicative Teaching and Learning Time
(10 hrs per credit):</td><td>Activity</td></tr>
<tr><td>1.Student/Tutor interaction, some of which may be online:</td><td>Lectures/ Tutorials/ Practical

140 hours</td></tr>
<tr><td>2.Student Learning Time:</td><td>Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.

60 hours</td></tr>
<tr><td>Total hours (1 and 2):</td><td>200 hours</td></tr>
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Module Title: Operating Systems and Design of Compilers	**Module Code: CESS4005** **Level: 4** **Credit:** 20 **ECTS credit: 10**	**Module Leader**

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: Ain Shams University Campus	

ASU Courses that pack the UEL Module
Bylaw 2018

Course	**Weight**
CSE 335 Operating Systems	50%
CSE 439 Design of Compilers	50%

Main Aim(s) of the Module:

- Understand basic operating systems concepts, process management, memory management, file management and deadlocks.
- Analyse, compare and implement different algorithms used in an Operating System.
- Compare different Operating Systems such as windows, UNIX, LINUX.
- Share ideas and work in a team effectively and independently.
- Understand the theory behind different components of a compiler, the programming techniques usedto put the theory in practice, and the interfaces used to modularize the compiler.
- Understand the concepts of parsing and semantic analysis and their importance in compiler design.
- Understand and develop first three stages of a simple compiler using the C programming language.

Main Topics of Study:

- Computer-system structures
- Operating- system structures
- Process management, Processes
- CPU Scheduling
- Process Synchronization
- Deadlocks
- Memory management
- Virtual memory
- Lexical Analysis
- Context free grammar
- Recursive descent parser
- Top-down parser
- Bottom-up parser
- Semantic Analysis

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Describe the function and design of Operating System components: Process management, Memory Management, File System and deadlocks. (COI)
2. Explain the several phases of the compiler and define a regular expression that generates a target language and apply parsing techniques for a source language. (COI)

Thinking skills

3. Compare the common algorithms used for both pre-emptive and non-pre-emptive scheduling of tasks in operating systems and the types of processor scheduling. (COI)
4. Summarize the principles of virtual memory and the various approaches to solve the problem of mutual exclusion in an operating system. (COI, DP)
5. Analyse written programs syntactically and semantically and create a grammar for a tiny language. (COI)

Subject-based practical skills

6. Implement some algorithms used in Operating Systems. (COI, DP, IC)
7. Write compiler stages using C++ Programs. (COI)

Skills for life and work (general skills)

8. Work and communicate effectively in a team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals. (SEI, PI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 335 Operating Systems:** • Software project (report 750 words) and presentation (15 minutes) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All

For CSE 439 Design of Compilers: • Software project (report 1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.		

Reading and resources for the module:

Core

- Silberschatz, A., Galvin, P.B. and Gagne, G. (2012). *Operating system concepts*. 9th Ed., Wiley, Hoboken, N.J
- Louden, K.C. (2009). *Compiler construction: principles and practice*. Course Technology Cengage Learning, Boston.

Recommended

- Tanenbaum, A.S. and Bos, H.J. (2015). *Modern Operating Systems, 4th Ed.,* Pearson Higher Education.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials/ Practical 75 hours
2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 125 hours
Total hours (1 and 2):	200 hours

Module Title: Mental Wealth and Professional Fitness: Human Rights	**Module Code: CESS4006** **Level 4** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module **Bylaw2018**	
Course	**Weight**
ASU 111 Human Rights	100%

Main Aims of the module

The aim of this course is to provide students with:

- Aware of national, regional and international contemporary issues, to have an intellectual and enlightened personality and to interact effectively in the community through different communication skills.
- The course provides the students by information about the conceptual foundation of human rights, the development of human rights framework and multidisciplinary character of the field as an area of study. It also focuses on details of the Universal Declaration of Human Rights, the international covenant oneconomic, social, cultural rights and all related agreements. It also touches the state of human rights in Egyptand overall the world

Main topics of study:

- A general introduction to international human rights.
- An introduction to basic notions of public ethics.
- The history of Human Rights.
- International instruments.
- Categories of rights.
- Human Rights violations.
- Protection.
- Responsibility thereof.
- Rights of women.
- Rights of the child.
- Rights of indigenous people.
- Armed conflicts and terrorism.
- The environment, transitional justice.
- Sexual minorities.

Learning Outcomes for the Module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge Skills

1. Recognize the links, contests and conflicts between (largely, but not exclusively, economic) globalization andhuman rights as well as public policy implications, particularly as they relate to Egypt in the Middle East. (COI, CC, CI)
2. List the ways of promoting and protecting human rights. (COI, CC, CI)
3. Illustrate power relationships and roles of diverse actors, including civil society. (COI, CC, CI)
4. Recognize public policy implications, particularly as they relate to Egypt in the Middle East as well as globalcontexts. (COI, CC)

Thinking Skills

5. Analyse situations effectively and design pathways for arguments. (COI, CI)

Subject---based practical skills

6. Write research paper based on theme agreed with the instructor. (COI)

Skills for life and work (general skills)

7. Carry debates effectively with people about globalization and ways of promoting and protecting humanrights. (SEI, PI, CI, CC)
8. Communicate effectively with others and discuss topics based on the readings. (SEI, PI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

The teaching and learning strategy offers a supportive, creative and critical environment for guided individual and group work. Lectures, tutorials, Lab work, and Independent study using learning materials are used as learning tools. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of the ASU course, including: **For ASU 111: Human Rights:** • Technical report (2000 words) and presentation (15 minutes) equivalent to 40%of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Goodhart, M.E. (2016). *Human rights: politics and practice*. Oxford University Press, New York, Ny
- Florian amereller LL.M., Kilian bälz LL.M. and Sven Klaiber (2010), *A guide to business law in Egypt*

Recommended

- Forsythe, D.P. (2018). *Human rights in international relations*. Cambridge University Press, Cambridge.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction:	- Lecture and tutorial - Group assignment (presentation) - Participation in class 125 hours
2. Student learning time:	unsupervised studio work/ research/ group work/ readings and reflections,etc… 75 hours
Total hours (1 and 2):	200 hours

Module Title: Embedded System	**Module Code: CESS5001** **Level 5** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module

Bylaw2018

Course		**Weight**
CSE 211	Introduction to Embedded Systems	50%
CSE 411	Real-time and Embedded Systems Design	50%

Summary of module for applicants:

- To provide understanding of Microprocessors, microcontrollers, Memory, Controllers and I/O operations.
- To demonstrate the understanding of Embedded systems, it's architecture and design methodologies, its development and building process.
- To program and debug in embedded C for a typical microcontroller while using industrial IDE.
- To demonstrate the understanding of real-time operating systems functionalities and design requirements

Main topics of study:

The module will investigate the different aspects of:

- Programming, debugging, and simulating assembly language programs.
- Interrupts and serial I/O and Memory Expansion.
- Real-time system analysis. Real-time operating systems.
- Developing embedded software, Memory maps and boot kernels, firmware, and ROM-residentsystem code.
- Communicating, linking, interfacing, and processing techniques for embedded systems.Programming models.
- Main challenges in the design, implementation, and validation of embedded systems.

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Describe the architecture of embedded systems and differentiate between embedded functional and non-functional requirements. E.g., ROM, RAM, Time, Power, … etc. (COI, IC)
2. Define and use different modes of Timers in embedded small applications. (COI)

Thinking skills

3. Write and debug startup files and build assembly language on an industrial scale microcontrollerarchitecture. (COI, DP, IC)
4. Manage embedded resources by different methods. E.g., semaphores, critical sections, … etc. (COI, DP, IC)

Subject-based practical skills

5. Manage peripherals operations using polling and interrupts and program in C applications for different peripherals. E.g., GPIOs, ADC, I2C, and UART applications using registers level and Driver Libraries. (COI, DP, IC)
6. Follow MISRA rules and resolve its warnings in developing embedded applications. (COI, DP)
7. Develop RTOS embedded multitasking applications and communicate between tasks using queues. (COI, DP,IC)

Skills for life and work (general skills)

8. Develop the skills which are related to teamwork, creative thinking, problem solvinger in different fields. (PI, SEI, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures/tutorials/practical sessions/videos. Feedback will be provided throughout the module in the form of bothformative and summative work.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**

Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 211 Introduction to Embedded Systems:** • Report (1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All
For CSE 411 Real-time and Embedded Systems Design: • Report (1000 words) equivalent to 20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade.		

Reading and resources for the module:

Core

- Muhammad Ali Sarmad Naimi, Sepehr Naimi, Janice Mazidi (2016) *ARM Assembly Language_ Programmingand Architecture.* 2nd Ed., MicroDigitalEd.
- Valvano, J. W. (2012). *Embedded Systems: Introduction to Arm® Cortex™-M Microcontrollers.* 5th Ed.,Independent Publishing Platform.
- Barry, R. (2010). *Using the FreeRTOS Real Time Kernel - A Practical Guide - Cortex-M3 Edition*. Freertos.
- TivaWare™ Peripheral Driver Library; User Guide

Recommended

- Bai, Y. (2016) *Practical Microcontroller Engineering with ARM Technology.* John Wiley & Sons.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction:	Lectures/ Tutorials/ Practical 140 hours
2. Student learning time:	Background reading, preparation for examination, write-up time for laboratoryexercises and coursework 60 hours
Total hours (1 and 2):	200 hours

Module Title: Software Engineering 1	**Module Code: CESS5002** **Level 5** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module		
	Bylaw2018	
Course		**Weight**
CSE 233	Agile Software Engineering	100%

Summary of module for applicants:

- Recognize the different types of development
- Perform practical development and project management activities

Main topics of study:

The module will investigate the different aspects of:

- Principles of Agile
- Agile reports, Agile planning, time management of Agile projects
- SCRUM
- SPRINTS
- BURNDOWN charts
- Transition to an Agile software development environment
- Application of Agile principles in non-software projects

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship –

Code = (EE)At the end of this module,

students will be able to:

Knowledge

1. Identify the different development processes and the differences between them. (COI)
2. Classify the software projects into suitable classes. (COI, EE, IC)
3. Describe the different stages of agile and XP development. (COI, EE, IC)

Thinking skills

4. Formulate the data representation needed in Agile projects. (COI, EE, IC)
5. Experiment and test changing the requirements of needed agile software. (COI, IC, EE)

6. Subject-based practical skills
7. Design applications through agile/scrum development. (COI, DP, EE, IC)

Skills for life and work (general skills)

8. Work and communicate effectively in a team by effective collaboration and task management, working in aconstrained stressful environment, and leading and motivating individuals. (SEI, PI, IC, EE, CI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures/tutorials/practical sessions/videos. Feedback will be provided throughout the module in the form of bothformative and summative work.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 233 Agile Software Engineering:** • Software project (report 1000 words) equivalent to 40% of the total modulegrade • Final exam (3 Hours) equivalent to 60% of the total module grade.	100%	All

Reading and resources for the module:
These must be up to date and presented in correct Harvard format unless a Professional Body specifically requiresa different format

Core

- Hazzan, O. & Dubinsky, Y. (2008) *Agile Software Engineering*. Springer.

Recommended

- Guckenheimer, S. and Neno Loje (2012). *Agile software engineering with Visual Studio : from concept tocontinuous feedback*. Addison-Wesley, Upper Saddle River, Nj.
- Shore, J. and Warden, S. (2008). *The art of agile development*. O'reilly, Beijing.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction:	Lectures/ Tutorials/ Practical 125 hours
2. Student learning time:	Background reading, preparation for examination, write-up time for laboratoryexercises and coursework 75 hours
Total hours (1 and 2):	200 hours

Module Title: Computer Networks and Distributed Systems	**Module Code: CESS5003** **Level 5** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module

Bylaw2018

Course		**Weight**
CSE 351	Computer Networks	50%
CSE 354	Distributed Computing	50%

Summary of module for applicants:

- To apply a top-down approach to present the different network layers starting from the application layerand ending with the physical layer
- To build a distributed system and to understand the different methodologies and technologies used indistributed computing

Main topics of study:

The module will investigate the different aspects of:

- Network performance, rate and switching
- Protocols Architecture: ISO/OSI, TCP/IP
- Multi-access channels, Ethernet, and Switching
- Routing in intra and Internet
- Network Operational Security
- Client Server Architecture and P2P
- Socket Programming
- Message-oriented middleware systems
- Distributed processes
- Distributed file systems
- Fault tolerance
- Web services
- Introduction to Cloud and Grid Computing

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Outline the basic concepts of the ISO/OSI reference model and the TCP/IP protocol stack. (COI)
2. Explain the use of socket programming in networking applications. (COI)
3. Describe the different models of distributed computing and recognize the differences between computationaland communication overheads. (COI)

Thinking skills

4. Evaluate network performance as well as availability and security of distributed computing resources. (COI,DP, IC)
5. Design a distributed computing model to solve a complex problem. (COI, DP, IC, EE)

Subject-based practical skills

6. Design and implement a distributed computing model. (COI, DP, IC)
7. Configure a working environment for distributed computing. (COI, DP, IC)

Skills for life and work (general skills)

8. Work and communicate effectively in a team. (SEI, PI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures/tutorials/practical sessions/videos. Feedback will be provided throughout the module in the form of bothformative and summative work.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 351 Computer Networks:** • Software project (report 1000 words) equivalent to 20% of the total modulegrade • Final exam (3 Hours) equivalent to 30% of the total module grade. **For CSE 354 Distributed Computing:** • Software project (report 1000 words) equivalent to 20% of the total modulegrade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All

Reading and resources for the module:
These must be up to date and presented in correct Harvard format unless a Professional Body specifically requiresa different format

Core

- Kurose, J.F. and Ross, K.W. (2017). *Computer Networking : A Top-Down Approach*. 7th Ed., Pearson, Boston
- Coulouris, G.F. (2012). *Distributed systems : concepts and design*. 5th Ed., Addison-Wesley, Boston.

Recommended

- Tanenbaum, A.S. and Wetherall, D. (2010). *Computer Networks, 5th Ed.,* Prentice Hall.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction:	Lectures/ Tutorials/ Practical 140 hours
2. Student learning time:	Background reading, preparation for examination, write-up time for laboratoryexercises and coursework 60 hours
Total hours (1 and 2):	200 hours

Module Title: Computer Vision	**Module Code: CESS5004** **Level 5** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module **Bylaw2018**	
Course	**Weight**
CSE 483 Computer Vision	100%

Summary of module for applicants:

- Demonstrate knowledge and understanding of the concepts of image processing and computer vision.
- Learn different solution designs and methods of image processing and computer vision problems.
- Apply methods from related fields (linear algebra, signal processing, mathematics and statistics) in the computer vision process.
- Apply the knowledge and practice for designing and implementing real applications.

Main topics of study:

The module will investigate the different aspects of:

- Image Formation
- Pixels and Histogram
- Spatial Filtering
- Segmentation
- Morphology
- Frequency Domain
- Feature Detection
- Feature Description
- Matching and Fitting
- Multiple Views
- Machine Learning
- Object Recognition

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Demonstrate the basic definitions and aspects of computer vision concepts, primary steps, and advancedmethods. (COI)
2. Demonstrate the foundations of digital signal processing in image transformation, enhancement, restoration, segmentation, feature extraction, and classification, and define the needed concepts fromrelated sciences. (COI)
3. Define and be aware of the central role of computer vision in solving problems in several real-lifeenvironments and applications. (COI, CC)

Thinking skills

4. Design, analyze, and verify methods and algorithms for image acquisition, enhancement, restoration,segmentation, description, and classification. (COI, DP, IC)
5. Solve related mathematical and statistical problems based on the acquired knowledge. (COI)

Subject-based practical skills

6. Design efficient data structures and algorithms/solutions for different computer vision and image analysisproblems that are optimized with respect to available resources. (COI, DP, IC)
7. Apply theoretical concepts and practical techniques from related fields (mathematics, statistics, signal processing …) to produce the required solution. (COI)

Skills for life and work (general skills)

8. Work effectively as an individual and in teams, either as a leader or a member, and communicate ideas andsolutions effectively by oral, written and visual means. (SEI, IP, IC, CI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures/tutorials/practical sessions/videos. Feedback will be provided throughout the module in the form of bothformative and summative work.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of the ASU course, including: **For CSE 483 Computer Vision :** • Software project (report 1000 words) equivalent to 40% of the total modulegrade • Final exam (3 Hours) equivalent to 60% of the total module grade.	100%	All

Reading and resources for the module:

Core

- SZELISKI, R. (2010). *Computer Vision Algorithms and Applications.* Springer.
- Richard Szeliski, "Computer Vision Algorithms and Applications", Springer, 2010.

Recommended

- GONZALEZ and WOODS (2017) *Digital Image Processing.* 4th Ed*.,* Pearson.
- FORSYTH and PONCE (2011) *Computer Vision a Modern Approach.* 2nd Ed., Pearson.
- SCOTT KRIG, (2016) *Computer Vision Metrics*. Springer.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials/ Practical 140 hours
2. Student learning time:	Essential and background reading, tutorial preparation, assignment planning andpreparation, examination revision. 60 hours
Total hours (1 and 2):	200 hours

Module Title: Internet Programming	**Module Code: CESS5005** **Level 5** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module **Bylaw2018**	
Course	**Weight**
CSE 341 Internet Programming	100%

Summary of module for applicants:

- Design and develop a Web page using HTML and CSS
- Understand asynchronous client/server communication.
- Understand the creation of PHP applications

Main topics of study:

The module will investigate the different aspects of:

- HTML
- CSS
- Javascript
- DOM
- JQuery
- AJAX
- PHP

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Identify the structure of a web page and its basic elements. (COI)
2. Classify the server-side and client-side communication. (COI)
3. Recognize document tree structure. (COI)

Thinking skills

4. Style web pages using CSS and deal with all web page elements using DOM. (COI, DP, IC)

Subject-based practical skills

5. Learn client-side scripts using Javascript and JQuery as well as server-side script using PHP. (COI, DP, IC)
6. Establish asynchronous client-server communication using AJAX. (COI, DP, IC)

Skills for life and work (general skills)

7. Apply knowledge to create different purpose websites. (COI, DP, IC)
8. Write client/server-side script to handle various user inputs as well as dynamic pages. (COI, DP, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures/tutorials/practical sessions/videos. Feedback will be provided throughout the module in the form of bothformative and summative work.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 341 Internet Programming:** • Software project (report 1000 words) equivalent to 40% of the total modulegrade • Final exam (3 Hours) equivalent to 60% of the total module grade.	100%	All

Reading and resources for the module:

Core

- SCOBEY, P. and LINGRAS, P. (2016) *Web Programming and Internet Technologies: An E-Commerce Approach.2nd* Ed., Jones & Bartlett Learning.

Recommended

- DEAN ,J. (2018) *Web Programming with HTML5, CSS, and JavaScript.* Jones & Bartlett Learning.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction:	Lectures/ Tutorials/ Practical 140 hours
2. Student learning time:	Background reading, preparation for examination, write-up time for laboratoryexercises and coursework 60 hours
Total hours (1 and 2):	200 hours

Module Title: Mental Wealth and Professional Fitness: Engineering Economy and Investments	**Module Code: CESS5006** **Level:** 5 **Credit:** 20 **ECTS credit:** 10	**Module Leader**

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

ASU Courses that pack the UEL Module

Bylaw 2018

Course	**Percentage**
EPM 119 Engineering Economy and Investments	100%

Main Aim(s) of the Module:

- To outline principles of engineering economy.
- To recognize cost estimation and cost terminology.
- To derive and calculate the money time relationships.
- To evaluate and compare alternatives for different useful lifetimes.

Main Topics of Study:

- Principles of engineering economy, Time value of money, Interest rate, Single payment
- Present value and future value, Cash flow diagram
- Uniform series, Interest rate during different periods
- Arithmetic gradient series
- Geometric series
- Economic comparison of alternatives, Present value analysis
- Least common multiple method-Midterm exam
- Annual cost analysis, Capitalized cost analysis
- Payback period
- Internal rate of return method,
- Incremental Investment analysis
- Bonds
- Breakeven analysis
- Depreciation methods
- Economical Applications in Electrical Engineering.

Learning Outcomes for the Module

Digital Proficiency – Code = (DP)
Industry Connections – Code = (IC)
Social & Emotional Intelligence – Code = (SEI)
Physical Intelligence – Code = (PI)
Cultural Intelligence – Code = (CI)
Community Connections & UEL Give Back – Code = (CC)
Cognitive Intelligence – Code = (COI)
Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Recognize the basic elements of economic tools. (COI, IC, CC)
2. Describe the basics of problem solving of time value of money in case of different series. (COI)

Thinking skills

3. Apply mathematics, science and engineering principles. (COI, IC)
4. Apply a systematic process to making economic decisions. (COI, IC)

Subject-based practical skills

5. Ability to design a system, component, or process to meet desired needs. (COI, EE, IC)
6. Communicate the results of the modeling process to management and other non-specialist users of engineering analyses. (SEI, PI, IC, EE)

Skills for life and work (general skills)

7. Work and communicate effectively in team. (SEI, PI)
8. Present technical reports about basics of engineering economy and different analysis and solving techniques. (COI, CC, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio: Continuous Assessment of the ASU course, including: **For EPM 119 Engineering Economy and Investments:** • Technical report (1500 words) equivalent to 40% of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Leland Blank, L., Tarquin, A. J. (2018) *Engineering economy*. NY McGraw-Hill Education, New York

Recommended

- Sullivan, W.G., Wicks, E.M. and C Patrick Koelling (2019). *Engineering economy*. Pearson Higher Education, Hoboken, Nj.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online:	Lectures/ Tutorials 125 hours
2.Student Learning Time:	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision. 75 hours
Total hours (1 and 2):	200 hours

Module Title: High-Performance and Mobile Computing	**Module Code: CESS6001** **Level 6** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module

Bylaw2018

Course		**Weight**
CSE 455	High-Performance Computing	50%
CSE 431	Mobile Programming	50%

Summary of module for applicants:

- To demonstrate the understanding of Mobile computing and mobile communication infrastructure.
- To design and develop mobile application using various methodologies.
- To demonstrate the understanding of parallelising techniques in Scientific Computing.
- To evaluate the mobile application design and implementation
- To Design and implement parallel programs using high-level programming.
- To develop and execute parallel programs on high performance computing.
- To evaluate the mobile application design and implementation from both the empirical and theoretical points of view

Main topics of study:

The module will investigate the different aspects of:

- Mobile computing.
- Mobile communication technologies and infrastructure.
- Mobile computing architecture.
- Networking and Protocols
- Mobile application development lifecycle.
- Mobile application development SDKs.
- Cloud computing.
- Location based services.
- Mobile Databases.
- High-performance computing.
- Parallelising and Parallel Programming
- GPUs
- Designing GPU based systems.

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Identify the development challenges in mobile applications and platforms, describe the design process andselect the suitable communication channel in mobile environment. (COI, IC, DP)
2. Describe different levels of abstraction in HPC modeling and of different parallel programming models. (COI,DP, IC)

Thinking skills

3. Analyse and compare the advantages and disadvantages of the different mobile computing technologies.(COI, DP)
4. Evaluate the resource allocation and utilisation in the different mobile environments. (COI, DP, IC)
5. Analyse and assess the performance of HPC programs. (COI, DP, IC)

Subject-based practical skills

6. Design and develop a mobile application and parallel programs to solve practical problems. (COI, DP, IC, EE)
7. Evaluate the suitability of different HPC solutions to standard problems. (COI, DP, IC)

Skills for life and work (general skills)

8. Develop skills related to teamwork, effective communication, creative thinking and problem solving. (SEI,PI, IC, CI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures/tutorials/practical sessions/videos. Feedback will be provided throughout the module in the form of bothformative and summative work.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 455 High-Performance Computing:** • Software project (report 750 words) and presentation (10 minutes) equivalent to20% of the total module grade • Final exam (3 Hours) equivalent to 30% of the total module grade. **For CSE 431 Mobile Programming:** • Software project (report 1000 words) equivalent to 20% of the total modulegrade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Kirk, D. and Wen-Mei Hwu (2017). *Programming massively parallel processors : a hands-on approach*. 3rd Ed.,Morgan Kaufmann Elsevier, Burlington, Massachusetts.
- Talukdar, A. K. (2010). *Mobile Computing*. 2nd Ed., McGraw-Hill, New Delhi.

Recommended

- Pacheco, P. (2011). *An Introduction to Parallel Programming*, Morgan Kaufmann, Boston.
- Quinn, M. J. (2008). *Parallel Programming in C with MPI and OpenMP.* McGraw Hill, Boston.
- Sanders, J. and Kandrot, E. (2011). *CUDA by example: an introduction to general-purpose GPU programming*.Addison-Wesley, Boston.
- Schiller, J. H. (2003). *Mobile Communications*. 2nd Ed., Pearson.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction:	Lectures/ Tutorials/ Practical 125 hours
2. Student learning time:	Background reading, preparation for examination, write-up time for laboratoryexercises and coursework 75 hours
Total hours (1 and 2):	200 hours

Module Title: Software Engineering 2	**Module Code: CESS6002** **Level 6** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module

Bylaw2018

Course		**Weight**
CSE 336	Software Design Patterns	50%
CSE 441	Software Project Management	50%

Summary of module for applicants:

- Use the language of patterns to find and to record solutions to recurring problems of system architecture
- Analyze and compare different techniques for design patterns.
- Identify Software Maintenance and Evolution
- Understand the specific features of Software project management

Main topics of study:

The module will investigate the different aspects of:

- Software patterns
- Software maintenance and evolution
- Reverse engineering
- Software refactoring
- Project management
- Risk management and Risk analysis
- Human resource management
- Time management

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Describe the processes of software design patterns, software planning, monitoring and control. (COI)
2. Describe the different aspects of project management methodologies and software projects life cycles. (COI,EE, IC)

Thinking skills

3. Analyze and compare different methods used in software design patterns. (COI)
4. Design and implement change and maintenance operations on existing software. (COI, DP, IC)
5. Evaluate different approaches of software project management. (COI, DP, EE, IC)

Subject-based practical skills

6. Develop practical projects using complete analysis, design and implementation. (COI, DP, EE, IC)
7. Design a full plan for a software project. (COI, DP, EE, IC)

Skills for life and work (general skills)

8. Work and communicate effectively in team by effective collaboration and task management, working in aconstrained stressful environment, and leading and motivating individuals. (SEI, PI, CI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures/tutorials/practical sessions/videos. Feedback will be provided throughout the module in the form of bothformative and summative work.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 336 Software Design Patterns:** • Software project (report 1000 words) equivalent to 20% of the total modulegrade • Final exam (3 Hours) equivalent to 30% of the total module grade. **For CSE 441 Software Project Management:** • Software project (report 1000 words) equivalent to 20% of the total modulegrade • Final exam (3 Hours) equivalent to 30% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Shalloway, A. and Trott, J. (2004). *Design patterns explained: a new perspective on object-oriented design*.

2nd Ed., Addison-Wesley.

- Wooldridge, M. (1998). *Software Project Management.*

Recommended

- Gamns, E. and Helm, R. (2000) *Design Patterns: Elements of Reusable Object-Oriented Software.* Pearson.
- Sommerville, I. (2016). *Software engineering*. 10th Ed., Pearson Education, Harlow.
- Wysocki, R.K. (2019). *EFFECTIVE PROJECT MANAGEMENT: traditional, agile, extreme.* Wiley.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction:	Lectures/ Tutorials/ Practical 125 hours
2. Student learning time:	Background reading, preparation for examination, write-up time for laboratoryexercises and coursework 75 hours
Total hours (1 and 2):	200 hours

Module Title: Computer and Network Security	**Module Code: CESS6003** **Level 6** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module		
	Bylaw2018	
Course		**Weight**
CSE 451	Computer and Network Security	100%

Summary of module for applicants:

- Demonstrate the concepts of cryptology.
- Understand the concepts of advanced algorithm design.
- Discriminate between Symmetric and Public key ciphers.
- Understand better computer security.

Main topics of study:

The module will investigate the different aspects of:

- Classical Encryption Techniques
- Block Cipher and DES
- Finite Fields
- AES
- Number Theory
- Public Key Cryptography
- Key Management
- Message Authentication and Hashing
- Digital Signature
- Operational Security
- Firewalls and IDS

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Explain Cryptography and Cryptanalysis and list different Encryption Algorithms. (COI)
2. Describe Block ciphers and stream ciphers. (COI)
3. Outline Hashing and Digital signature. (COI)

Thinking skills

4. Analyze different problems that may arise during data communication and the impact of different securitybreaches on computer security. (COI, DP, IC)
5. Select suitable ciphers for different applications. (COI, DP)

Subject-based practical skills

6. Implement different ciphers and cryptanalysis techniques. (COI, DP)
7. Implement Firewalls and IDS ACL rules. (COI, DP)

Skills for life and work (general skills)

8. Work and communicate effectively in team by effective collaboration and task management, working in aconstrained stressful environment, and leading and motivating individuals. (SEI, PI, CI, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures/tutorials/practical sessions/videos. Feedback will be provided throughout the module in the form of bothformative and summative work.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 451 Computer and Network Security:** • Software project (report 1000 words) equivalent to 40% of the total modulegrade • Final exam (3 Hours) equivalent to 60% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Stallings, W. (2017) *Cryptography and network security: principles and practice.*7th Ed., Pearson.

Recommended

- Preneel, B., Paar C., and Pelzl, J. (2014) *Understanding Cryptography*. Springer.

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction:	Lectures/ Tutorials/ Practical 125 hours
2. Student learning time:	Background reading, preparation for examination, write-up time for laboratoryexercises and coursework 75 hours
Total hours (1 and 2):	200 hours

Module Title: Computer & Systems Engineering GraduationProject (1)	**Module Code: CESS6004** **Level 6** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module	**Bylaw2018**	
Course		**Weight**
CSE 491 (1)	Computer & Systems Engineering Graduation Project	100%

Summary of module for applicants:

To enable students to undertake a sizeable piece of academic work in an area of their own interest relevant to, anddemonstrating technical skills acquired in, their programme of study.

The project requires appropriate research, analysis, design, implementation, quality assurance, evaluation andproject management.

Main topics of study:

The module will investigate the different aspects of:

- Project Overview and Understanding
- Identification of a suitable project topic
- Research methods
- Project Design
- Project Implementation
- Project testing, validation, and verification
- Project Documentation and Presentation

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Explain the problem statement, domain, motivation and state of the art of the graduation project. (COI, EE)
2. Illustrate the different project design methodology. (COI, DP, IC)

Thinking skills

3. Follow sound design methodology throughout the project. (COI, EE, IC)
4. Master the tools needed for the project design and implementation. (COI, EE, IC)

Subject-based practical skills

5. Design and build systems to solve some computer engineering problems. (COI, DP, IC, EE)
6. Test and verify the implemented system. (COI, DP, IC)

Skills for life and work (general skills)

7. Refer to relevant literature search for information. (COI)
8. Develop technical writing, presentation, problem solving and creative thinking skills. (SEI, PI, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures will be used to provide an overview of the project, its requirements and organisation and an introduction toresearch methods, literature surveys and referencing. In addition, every student will be allocated a supervisor at an early stage within the module. The supervisor will support the student for the duration of the project. Feedback, in
the form of formative assessment, will be provided by supervisors on a regular basis.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of each single ASU course, including: **For CSE 491 Computer & Systems Engineering Graduation Project (1):** • Dissertation (20000 words) equivalent to 60% of the total module grade • Presentation (30 minutes) equivalent to 40% of the total module grade.	100%	All

Reading and resources for the module:

Core

- Depends on Project.

Recommended

- Meredith, Mantel, Shafer (2016). *Project Management: A Managerial Approach.* 9th Ed., Wiley
- Beer, D.F. and Mcmurrey, D.A. (2019). *A guide to writing as an engineer*. John Wiley & Sons, Hoboken, Nj.
- Leong, E.C., Lee, C. and Keng, K. (2016). *Guide to research projects for engineering students: planning,writing and presenting*. Taylor & Francis, CRC Press.

Indicative learning and teaching time (10 hrs per credit):	**Activity**	
1. Student/tutor interaction:	- Lecturing and group discussion - Group assignments of research, including oral presentations. - Individual (formative and summative) assessment tasks	
	Total hours	**75 hours**
2. Student learning time:	Unsupervised studio work/ research/ group work/ readings and reflections, etc…	
	Total hours	**125 hours**
Total hours (1 and 2):	**200 hours**	

Module Title: Computer & Systems Engineering GraduationProject (2)	**Module Code: CESS6005** **Level 6** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

ASU Courses that pack the UEL Module	**Bylaw2018**	
Course		**Weight**
CSE 492 (2)	Computer & Systems Engineering Graduation Project	100%

Summary of module for applicants:

To enable students to undertake a sizeable piece of academic work in an area of their own interest relevant to, anddemonstrating technical skills acquired in, their programme of study.

The project requires appropriate research, analysis, design, implementation, quality assurance, evaluation andproject management.

Main topics of study:

The module will investigate the different aspects of:

- Project Overview and Understanding
- Identification of a suitable project topic
- Research methods
- Project Design
- Project Implementation
- Project testing, validation, and verification
- Project Documentation and Presentation

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge

1. Explain the problem statement, domain, motivation and state of the art of the graduation project. (COI,EE)
2. Illustrate the different project design methodology. (COI, DP, IC)

Thinking skills

3. Follow sound design methodology throughout the project. (COI, EE, IC)
4. Master the tools needed for the project design and implementation. (COI, EE, IC)

Subject-based practical skills

5. Design and build systems to solve some computer engineering problems. (COI, DP, IC, EE)
6. Test and verify the implemented system. (COI, DP, IC)

Skills for life and work (general skills)

7. Refer to relevant literature search for information. (COI)
8. Develop technical writing, presentation, problem solving and creative thinking skills. (SEI, PI, IC)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Lectures will be used to provide an overview of the project, its requirements and organisation and an introduction toresearch methods, literature surveys and referencing. In addition, every student will be allocated a supervisor at an early stage within the module. The supervisor will support the student for the duration of the project. Feedback, in the form of formative assessment, will be provided by supervisors on a regular basis.

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of each single ASU course, including: **For Computer & Systems Engineering Graduation Project (2):** • Dissertation (20000 words) equivalent to 60% of the total module grade • Presentation (30 minutes) equivalent to 40% of the total module grade.	100%	All

<table>
<tr><td colspan="3">Reading and resources for the module:

Core
- Depends on Project.</td></tr>
<tr><td colspan="3">Recommended
- Meredith, Mantel, Shafer (2016). Project Management: A Managerial Approach. 9th Ed., Wiley
- Beer, D.F. and Mcmurrey, D.A. (2019). A guide to writing as an engineer. John Wiley & Sons, Hoboken, Nj.
- Leong, E.C., Lee, C. and Keng, K. (2016). Guide to research projects for engineering students: planning,writing and presenting. Taylor & Francis, CRC Press.</td></tr>
<tr><td>Indicative learning and teaching time
(10 hrs per credit):</td><td colspan="2">Activity</td></tr>
<tr><td rowspan="2">1. Student/tutor interaction:</td><td>- Lecturing and group discussion
- Group assignments of research, including oral presentations.
- Individual (formative and summative) assessment tasks</td><td></td></tr>
<tr><td>Total hours</td><td>75 hours</td></tr>
<tr><td rowspan="2">2. Student learning time:</td><td colspan="2">Unsupervised studio work/ research/ group work/ readings and reflections, etc…</td></tr>
<tr><td>Total hours</td><td>125 hours</td></tr>
<tr><td>Total hours (1 and 2):</td><td colspan="2">200 hours</td></tr>
</table>

Module Title: Mental Wealth and Professional Fitness:Professional Ethics	**Module Code: CESS6006** **Level 6** **Credit: 20** **ECTS credit: 10**	**Module Leader**
Pre-requisite: None		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		
ASU Courses that pack the UEL Module **Bylaw2018**		
Course		**Weight**
ASU 113 Professional Ethics and Legislations		100%

Summary of module for applicants:

Professional Life module to further develop students' competencies to form the basis of their future careers. The module aims at developing and applying theory and critical thinking to contemporary issues and practices the national mega projects in different disciplines. It also shed the light on the importance of multidisciplinary thinking,project management basics related to national projects. The module will further develop the students' self- awareness, interpersonal and negotiation skills through teamwork and mentoring.

Main topics of study:

- The novelty in a given market or industry
- Professional innovation management
- History of Engineering
- The positive effect of technology on society
- Literary and non-literary texts
- Values are created in speech and writing

Learning Outcomes for the module

- Digital Proficiency – Code = (DP)
- Industry Connections – Code = (IC)
- Social & Emotional Intelligence – Code = (SEI)
- Physical Intelligence – Code = (PI)
- Cultural Intelligence – Code = (CI)
- Community Connections & UEL Give Back – Code = (CC)
- Cognitive Intelligence – Code = (COI)
- Enterprise and Entrepreneurship – Code = (EE)

At the end of this module, students will be able to:

Knowledge and Thinking skills

1. Identify the Engineering Profession and Effective Studying. (COI, IC)
2. Define Engineering Ethics and Health and Safety Issues for Engineering Projects. (COI, IC, CC)
3. Apply critical thinking in engineering problems. (DP, IC, PI, SEI)

Subject---based practical skills

4. Demonstrate their ability to carry out significant parts of the innovation and enterprise processeswithin their discipline. (IC, EE, SEI)

Skills for life and work (general skills)

5. Prepare technical effective studying reports. (COI, IC)
6. Reflect on learning and skills development. (IC, CI, SEI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:For on campus students:

Seminars and group supervision, supplemented by full group teaching in research methodology, presentation, datacollection methods, literature searching, etc.

Students are encouraged to develop transferable skills, particularly in information retrieval and analysis, timeplanning and scheduling, and report presentation and production

Assessment methods which enable students to demonstrate the learningoutcomes for the module: For on Campus Students	**Weighting:**	**Learning Outcomes demonstrated:**
Portfolio: Continuous Assessment of the ASU course, including: **For ASU 113 Professional Ethics and Legislations:** • Technical report (2000 words) and presentation (15 minutes) equivalent to 40%of the total module grade • Final exam (3 Hours) equivalent to 60% of the total module grade.	100%	All

Reading and resources for the module: **Core** • Whitbeck, C. (2011). *Ethics in Engineering Practice and Research*. Cambridge University Press **Recommended** • Ridley, M. (2020), *How Innovation Works: And Why It Flourishes in Freedom*, HarperAudio.	
Indicative learning and teachingtime (10 hrs per credit):	**Activity**
1. Student/tutor interaction: *(Direct in campus/online ContactHours)*	- Lecture and tutorial - Individual research assignment (presentation) - Group research assignment (presentation) - Participation in class 125 hours
2. Student learning time: *(Self-learning & At homeworkload)*	unsupervised studio work/ research/ group work/ readings and reflections, etc… 75 hours
Total hours (1 and 2):	200 hours

AWARD CERTIFICATES

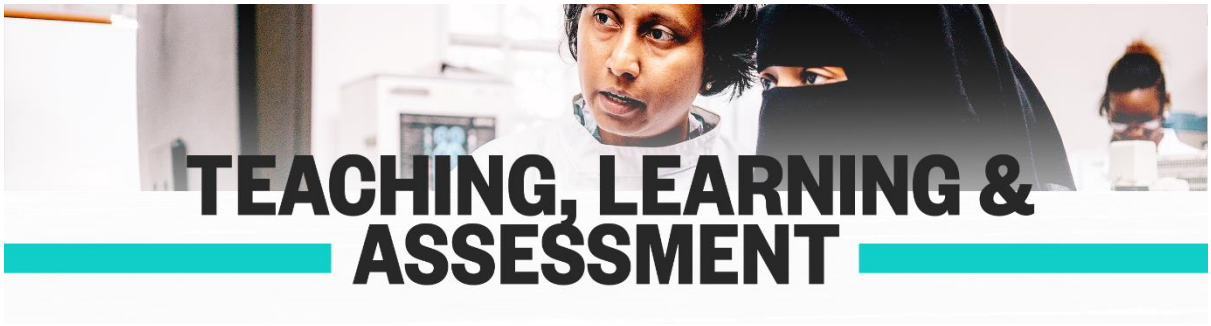
Issuing transcripts of results to students, and award certificates to successful students on programmers.

The student who achieves an accumulative GPA of 3.6 or higher after any semester and did not fail any course throughout his course of study is included in the Dean's List and receives partial exemption from charges on the next semester. This exemption is dependent on the student's GPA as recommended by the Course Administration Council in this regard and after approval of the Council of the Faculty of Engineering.

Students who complete 480 credits, graduate with an Honours Degree, which is documented in their graduation certificate. The faculty sets a system for encouraging distinguished students through reducing their tuition fees in accordance with their academic performance. At the beginning of each semester, the distinguished students' list is announced together with the associated tuition fees reductions.
Students who manage to fulfil all graduation requirement are awarded a dual B.Sc. degree from ASU – FoE and UEL in Computer Engineering and Software Systems

MORE INFORMATION

Link to the University's **academic regulations**:
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations



❖ Details of local teaching and learning approaches

- The course is a credit system leading to the Bachelor of Science Degree (Honours) after completing 480 credits. Student evaluation is based not only on final exam, but also on midterm exams, quizzes, assignments, course projects, presentations, papers, essays, in/out of class participation and many other innovative activities.
- Course instructors in the course are carefully selected from the distinct full-time world-class faculty members of the Faculty of Engineering at Ain Shams University.
- With the majority of modules being delivered over the whole year there is excellent scope for formative Assessment to stretch and extend the students. Thus, a key feature of the courses is the emphasis on formative feedback and guidance to enable students to develop full understanding of the topics of study, prior to assessment taking place.
- Assessment for these courses takes the form of examinations, course works, presentations and time constrained assessments.
- Each module syllabus should contain course objectives, textbook, outline, material, assessments, grading policy and outcome. Outline should contain sections covered every week with reference to chapters/sections in the textbook. The instructor should give the module syllabus to the students ~~in~~ at the first class. The syllabus serves as a contract between the instructor and the students.

❖ Degree Classification

Where a student is eligible for an Honours degree by passing a valid combination of modules to comprise an award and has gained a minimum of 240 UEL credits at level 5 or level 6 on the current enrolment for the course, including a minimum of 120 UEL credits at level 6, the award classification is determined by calculating:

The arithmetic mean of the best 90 credits at level 6	x	0.8	+	The arithmetic mean of the next best 90 credits at levels 5 and/or 6	x	0.2

and applying the mark obtained as a percentage, with all decimals points rounded up to the nearest whole number, to the following classification

70% - 100%	First Class Honours
60% - 69%	Second Class Honours, First Division
50% - 59%	Second Class Honours, Second Division
40% - 49%	Third Class Honours
0% - 39%	Not passed

For full details of the University degree classification refer to:
http://www.uel.ac.uk/wwwmedia/internal/qa/committees/documents/Academic-Framework---Assessment-Regulations---with-changes-approved-for-Transition-Group.doc

Grades equivalency

The points of each credit hour are computed as follows:

Ain Shams University			University of East London
Percentage of total mark at ASU	**Grade**	**Points for GPA**	**Percentage equivalent at UEL**
97% and higher	A+	4.0	95% and higher
93% to less than 97%	A	4.0	82% to less than 95%
89% to less than 93%	A-	3.7	70% to less than 82%
84% to less than 89%	B+	3.3	66% to less than 70%
80% to less than 84%	B	3.0	63% to less than 66%
76% to less than 80%	B-	2.7	60% to less than 63%
73% to less than 76%	C+	2.3	56% to less than 60%
70% to less than 73%	C	2.0	53% to less than 56%
67% to less than 70%	C-	1.7	50% to less than 53%
64% to less than 67%	D+	1.3	45% to less than 50%
60% to less than 64%	D	1.0	40% to less than 45%
Less than 60%	F	0.0	Less than 40%

❖ **References to student policies**

ASU-FoE available at:
Link will be updated later

UEL available at:
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies

Also detailed in Appendix B which provides full information on referencing and the avoidance of plagiarism.

The electronic version of "Cite Them Right: the essential referencing guide" 9th edition, can be accessed whilst on or off campus, via UEL Direct. The book can only be read online and no part of it can be printed nor downloaded.

Refer to Appendix E containing information on Academic Misconduct and Plagiarism.
Assessment and Feedback Policy available at:
Link will be updated later

Assessment and feedback are fundamental parts of your learning experience. The UEL Assessment and Feedback Policy seeks to:

- actively promote student success and academic achievement;

- provide clear, accurate, accessible information and guidelines to all staff and students on assessment and feedback;
- maximise the potential for consistency and fairness in assessment;
- locate assessment and feedback as an integral part of learning and teaching processes.

Every component of assessment that contributes to an award, at all levels, is subject to internal and External Examiner moderation. This ensures the maintenance of standards both internally and in comparison, with similar courses delivered at other higher education institutions. The UEL Assessment and Feedback Policy outlines the process for the various stages of the marking process and is available at https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Assessment-and-Feedback-Policy

The UEL Skills Curriculum has been designed to ensure that you are taught, have the opportunity to practice, and are assessed in three skillsets: Learning Skills, Professional Skills and Research Skills. These Skills are developed within your course of study. Further information is available at:
https://www.uel.ac.uk/discover/governance/policies-regulations-corporate-documents/student-policies/skills-curriculum

The UEL Skills Portal has been designed to act as a single gateway to a whole range of skills support that will help you progress through your studies. From tips on academic writing, using IT, to guidance on time management and exam revision - all of the resources in the UEL Skills Portal have been designed to support your learning and achievement, refer to
https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Skillzone.aspx

❖ Assessment Criteria

A student's performance will be marked and graded according to pre-specified and clear assessment criteria. These will normally be presented in one document combining marking and grading criteria. Further details can be found in section 2.3 of the Assessment and Feedback Policy and can be found at: www.uel.ac.uk/qa/policies/assessmentpolicy/

As your degree progresses, you will be assessed in a number of different ways. In addition to examinations, you will have a range of coursework assessments such as reports or presentations, for which you will be given clear guidance by the module leader including how you will be assessed for that piece of work.

The section below gives you a general guideline of what we are looking for at different levels of the course.

Level 3

- You can present basic information.
- You can follow guidelines to use that information to solve simple problems.

Work of a better standard usually reflects an approach where

- You have produced some work without guidance.
- Your work is presented clearly.

Level 4

- You can present factual information.
- With some help, you can analyse and evaluate the information presented and draw some conclusions.
- You can follow guidelines in creating solutions to straightforward problems.

Work of a better standard usually reflects an approach where

- You have required little guidance in producing your work.
- You have shown initiative where appropriate.
- You meet your obligations to others
- You have fully appreciated the complexity of a task and managed your time and resources accordingly.
- Your work is presented with care and forethought.

Level 5

- Your work displays a detailed knowledge of the topic. You are aware of other contexts that can be applied to this knowledge.
- With some guidance you can analyse data and situations in a range of different contexts.
- You can take information gathered or the ideas of others and re-format it to your own purpose.
- You can select appropriate evaluation techniques. You can use these to evaluate your own findings.

Work of a better standard usually reflects an approach where

- You have required minimal assistance if any assistance.
- You have been particularly creative in devising and implementing you chosen solution
- You have identified the key elements of problems and chosen the appropriate strategies to resolve them.
- You have communicated your work in a clear and concise manner.

Level 6

- Your work displays a comprehensive and detailed knowledge of the topic with areas of specialisation showing depth of understanding.
- You are aware of current developments.
- Without guidance you can analyse data and situations in a range of different contexts.
- You can develop creative and innovative solutions with little guidance.
- You can review evidence critically and use your findings to support conclusions and recommendations.

Work of a better standard usually reflects an approach where

- You have not required any assistance
- You have proved you can manage your own learning and make full use of a wide range of resources.
- You have been confident in your ability to solve problems.
- You have communicated your work in a thoroughly professional and coherent manner.

Link to the Student Handbook page on Assessment and Feedback: https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/Assessment-and-Feedback.aspx

Link to Student Policies: https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies

REFERENCING

As a student you will be taught how to write correctly referenced essays. UEL's standard **Harvard referencing** system is from *Cite Them Right*. Cite Them Right is the standard Harvard referencing style at UEL for all Schools, however professional body requirements will take precedence for instance the School of Psychology which uses the APA system. This book will teach you all you need to know about Harvard referencing, plagiarism and collusion. The electronic version of "Cite Them Right: *the essential referencing guide"* 9th edition, can be accessed whilst on or off campus, via UEL Direct. The book can only be read online and no part of it can be printed nor downloaded.

Harvard referencing
https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Harvard-Referencing-.aspx

Academic Integrity
https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Academic-integrity.aspx

MORE INFORMATION

Link to the Student Handbook page on *Cite Them Right*:
https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/Cite-Them-Right.aspx

> For the purposes of university regulations, **academic misconduct** is defined as any type of **cheating** in an assessment for the purposes of achieving personal gain.

For the purposes of university's regulations, academic misconduct is defined as any type of cheating in an assessment for the purposes of achieving personal gain. Examples of such misconduct are given below: the list is **not** exhaustive and the use of any form of unfair or dishonest practice in assessment can be considered potential misconduct.

Coursework Submitted for Assessment

For coursework submissions, academic misconduct means:

(a) The presentation of another person's work as one's own with or without obtaining permission to use it.

(b) The inclusion within one's own work of material (written, visual or oral), originally produced by another person, without suitable acknowledgment.

(c) The submission, as if it were one's own work, of anything which has been offered to you for your use, but which is actually not your own work.

(d) The inclusion within one's work of concepts paraphrased from elsewhere without citing your source.

(e) The inclusion in submitted work of sections of text, whether from electronic or hard copy sources, without appropriate acknowledgement of the source.

(f) The submission of work that the student, as the author, has previously submitted, without suitable acknowledgement of the source of their previous work; this should not normally be more than a short quotation as the same work cannot be submitted for different assignments.

(g) Including or quoting the work of other students in one's work, with the exception of published work, or outputs held in the library as a learning resource, which should be cited and acknowledged appropriately.

(h) Being party to any arrangement whereby the work of one candidate is represented as that of another.

(i) The submission, as your own work, of any work that has been purchased, or otherwise obtained from others, whether this is from other students, online services, “cheat sites”, or other agents or sources that sell or provide assignments.

(j) Practices such as ‘cutting and pasting’ segments of text into your work, without citing the source of each.

(k) For work not intended to be submitted as a collaborative assignment: producing work with one or more other students, using study practices that mean the submitted work is nearly identical, overall or in part, to that of other students.

(l) Offering an inducement to staff and/or other persons connected with assessment.

Examinations

For examinations, academic misconduct means:

(a) Importation into an examination room of materials or devices other than those which are specifically permitted under the regulations applying to the examination in question.

(b) Reference to such materials (whether written or electronically recorded) during the period of the examination, whether or not such reference is made within the examination room.

(c) Refusing, when asked, to surrender any materials requested by an invigilator.

(d) The application of an electronic device, unless this has been expressly permitted for that examination.

(e) Copying the work of another candidate.

(f) Disruptive behaviour during examination or assessment.

(g) Obtaining or seeking to obtain access to unseen examination questions prior to the examination.

(h) Failure to observe the instructions of a person invigilating an examination, or seeking to intimidate such a person.

(i) Offering an inducement to invigilators and/or staff and/or other persons connected with assessment.

Where academic misconduct is suspected, the matter will be dealt with under the *Procedure to be followed in the event of a suspected case of academic misconduct, Part 8, paragraph 4 (or, for postgraduate research students, Appendix I)* of the Manual of General Regulations (available for view at https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations).

If it is determined that academic misconduct has taken place, a range of penalties may be prescribed which includes expulsion from the programme.

PLAGIARISM - A GUIDANCE NOTE FOR STUDENTS

1. Definition of Plagiarism

Our University defines plagiarism and other academic misconduct in Part 8 of the UEL Manual of General Regulations (to which all students are referred upon joining UEL), which is reprinted in "The Essential Guide to the University of East London". In this document, the following example of an assessment offence is given:

The submission of material (written, visual or oral), originally produced by another person or persons or oneself, without due acknowledgement*, so that the work could be assumed to be the student's own. For the purposes of these Regulations, this includes incorporation of significant extracts or elements taken from the work of (an)other(s) or oneself, without acknowledgement or reference*, and the submission of work produced in collaboration for an assignment based on the assessment of individual work. (Such misconduct is typically described as plagiarism and collusion.)

The following note is attached:
*(Note: To avoid potential misunderstanding, any phrase that is not the student's own or is submitted by the student for a different assessment should normally be in quotation marks or highlighted in some other way. It should also be noted that the incorporation of *significant* elements of (an) other(s) work or of one's own work submitted for a different assessment, even with acknowledgement or reference, is unacceptable academic practice and will normally result in failure of that item or stage of assessment.)

2. Plagiarism in Greater Detail

Work that students submit for assessment will inevitably build upon ideas that they have read about or have learnt about in lectures. That is perfectly acceptable, provided that sources are appropriately acknowledged. It should be noted, however, that the wholesale reproduction of the ideas and words of others, however well referenced, is likely to lead to failure at assessment (see section 6 below)

The submission of work that borrows ideas, words, diagrams, or anything else from another source (or sources), without appropriate acknowledgement, constitutes plagiarism. Plagiarism is not limited to unattributed cutting-and-pasting; it includes the reproduction, without acknowledgement, of someone else's work, taken from a published (or unpublished) article, a book, a website, a friend's (or anybody else's) assignment, or any other source.

When an assignment or report uses information from other sources, the student must carefully acknowledge exactly what, where and how s/he has used them. If someone else's words are used, they must be within quotation marks and a reference must follow the quotation. (See section 6 for further guidance on referencing.)

Where a concept or argument in another source is paraphrased (rather than directly quoted), quotations marks should not be used, but it will still be necessary to acknowledge the source. Remember, however, that the making of simple changes to the wording of a source, while retaining the broad structure, organisation, content and/or phraseology of the source, is unacceptable academic practice and will probably be regarded as plagiarism. (For helpful tips on how to avoid plagiarism, see "The Study Skills Handbook" by Dr Stella Cottrell, pages 122-125.)

3. Collusion

Collusion is the term used to describe any form of joint effort intended to deceive an assessor as to who was actually responsible for producing the material submitted for assessment. Clearly, students are encouraged to discuss assignments with their peers, but each student must always ensure that, where an individual assignment is specified, the report/essay submitted is entirely the student's own. Students should, therefore, never lend work (in hard or electronic copy) to friends. If that work is subsequently plagiarised by a "friend", an act of friendship might lead to a charge of collusion.

4. When to Reference

Our regulations do not distinguish between deliberate and accidental plagiarism, but you will not be accused of plagiarism, provided that you properly reference everything in your work that was said, written, drawn, or otherwise created by somebody else.

You need to provide a reference:

- when you are using or referring to somebody else's words or ideas from an article, book, newspaper, TV programme, film, web page, letter or any other medium;
- when you use information gained from an exchange of correspondence or emails with another person or through an interview or in conversation;
- when you copy the exact words or a unique phrase from somewhere;
- when you reprint any diagrams, illustrations, or photographs.

You do not need to reference:

- when you are writing of your own experience, your own observations, your own thoughts or insights or offering your own conclusions on a subject;

- when you are using what is judged to be common knowledge (common sense observations, shared information within your subject area, generally accepted facts etc.) As a test of this, material is probably common knowledge if

  - you find the same information undocumented in other sources;

  - it is information you expect your readers to be familiar with;

  - the information could be easily found in general reference sources.

5. How to Reference

Our University has agreed on a single version of the Harvard referencing system (the School of Psychology uses the American Psychological Association (APA) referencing style) and this (along with APA) can be found in Cite Them Right:

Pears, R. and Shields, G (2013) *Cite Them Right.* Newcastle: Pear Tree Press Cite Them Right is available on line and hard copies can be found in our libraries and bookshops

6. Plagiarism, or Unacceptable Academic Practice?

If work that you submit for assessment includes substantial and significant elements of other sources and all of those sources are appropriately acknowledged, you will not have plagiarised, but you will be culpable of unacceptable academic practice, because there will be too little of your "own voice" to allow your knowledge to be assessed. Work that you submit for assessment must:

- use your own words;
- provide a critical commentary on existing literature;
- aim for novelty and originality;
- demonstrate your understanding of the subject area by paraphrasing.

Work that does not meet those criteria will fail.

Please follow the link below to learn more.

Link to the Student Handbook page on Academic Misconduct and Plagiarism: https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/Academic-Misconduct-and-Plagiarism-Home.aspx

RESEARCH INTEGRITY

The University adheres to its responsibility to support and promote the highest standards of **rigour and integrity** and embed a culture of honesty, transparency and care and respect for all participants and subjects of research. The University is committed to ensuring that research is conducted with integrity and good research practices are upheld. Please follow the link below to learn more.

MORE INFORMATION

Link to the Student Handbook page on Research for On Campus courses:
https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/Research.aspx

Link to the Research Integrity and Ethics Document page:
https://uelac.sharepoint.com/ResearchInnovationandEnterprise/Pages/research-integrity-and-ethics-documents.aspx

PLACEMENT ARRANGEMENTS

Placements and volunteering provide opportunities for students to gain work experience, develop work-related skills, learn about professional sectors and how your studies can be directly applied in the work environment.

At ASU-FoE ICHEP, the students' are requested to participate in Practical Field Training (PFT) instead of placements. Each student who successfully completed sophomore level must practice in one or more engineering facilities/fields (inside or outside Egypt) for a total period not less than 12 weeks. This training period must be divided over three modules (4 weeks each) and should be carried out through three summer semesters. The student must practice at least 8 weeks in Off-Campus training and may practice the other 4 weeks in On-Campus training offered by the Faculty of Engineering.

Off-Campus Training: Practical field training and/or practical courses in one or more engineering facilities or construction fields relevant to the architecture profession.

On-Campus Training: Engineering applications and/or communication skills courses relevant to architecture profession.

By completing the practical field training, students will be able to:

- Cope with the lived experience of working environment.
- Identify software engineer job responsibilities.
- Develop technical, interpersonal, and intrapersonal skills.
- Deepen understanding of the fundamentals and theories of computer and software systems.

Cognitive Domain

1	Apply knowledge of mathematics, information technology, engineering practice integrally to solve computer engineering problems.
2	Professionally merge the engineering knowledge, understanding, and feedback to improve design, products and/or services.
3	Use appropriate techniques and algorithms to create and implement different computer engineering designs and software systems.
4	Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
5	Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

Psychomotor Domain

6	Experience and acquire skills via implementation of different computer system designs.
7	Produce and create design project briefs and documents.
8	Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs.

Affective Domain

9	Acquire and apply new technologies; and practice self- learning strategies.
10	Be acquainted with engineering ethics and standards.
11	Exchange knowledge and skills with other team members from various specialties.
12	Collaborate effectively within a multi-disciplinary team.
13	Work in stressful environment.
14	Work in and lead a heterogeneous team of professionals from different engineering specialties and assume responsibility for own and team performance.
15	Demonstrate efficient IT capabilities.
16	Effectively manage tasks, time, and resources.
17	Acquire leadership qualities, business administration and entrepreneurial skills.

- ***Local arrangements for academic and pastoral care for students***

Programme teams must ensure that Academic Advisor have the knowledge and skills to carry out the role. The role includes helping students to understand:

i. The academic and related skills required for successful study at CHEP.
ii. The need for self-direction and responsibility for own learning.
iii. Their learning needs beyond their current courses and immediate assessments.
iv. An opportunity to identify areas of weakness.
v. Where to find information, help and support.
vi. Clarification of aims and choices for progression, employment and further study [internship]

Academic Advising in ASU-FoE:

i. Must exist for every year.
ii. That it must form part of the student induction process especially for General Level Year Students.
iii. Must be used as a mechanism, to identify ‘at risk students’.
iv. Must occur at critical moments in each semester. [week 1 & 8]

Programme teams must carefully manage the Academic Advising system so that students understand its role and know how to access it.
Academic Advising needs to be carefully managed with its importance being emphasised:

i. During the induction period for each Level of the programme.
ii. In student handbook.
iii. By Academic Advisor
iv. By Course Instructors-via class announcements
v. Via email and SIS.

Unit Heads agree procedures and systems to manage Academic Advising. These will include:

i. Allocation of Academic Advisors for all Levels
ii. Ensuring student is informed
iii. Delivery of Academic Advising
iv. Identification of students at risk

- ***Local Personal Tutor support***

Programme teams must meet the minimum requirements for delivery of Academic Advising:

i. Meet in weeks 1 and 8 each semester

ii. Identify issues and agree strategies
iii. Keep a record of meetings [SIS+ student copy]
iv. Feedback issues and takes action as appropriate
v. Advertise Office Hours when one to one appointments can be made according to Advisor and student Schedule.

Advisor need to be clear about the focus of the meeting:

i. To check that student has settled into the Programme?
ii. To identify any concerns the student may have?
iii. To review student's progress [preferably quantitative]?
iv. To review and offer advice on student's performance in assessments/exams?
v. To address concerns about performance or attendance?
vi. To review progression or career plans [internship]?

Meeting -encouraging change:

i. Encouraging change -telling or helping?
ii. Giving constructive feedback
iii. Discussing options
iv. Agreeing actions –SMART targets
v. Producing a realistic plan of action
vi. Getting commitment
vii. What's going well?
viii. What could go better?

Follow-up from meetings –ensuring action:

i. What actions are required by the student or by the Academic Advisor?
ii. Does this involve liaison with
    a. Course Instructors?
    b. Unit Heads?
    c. Vice Director?

❖ ***Local Careers Advice***

Programme teams must ensure that staff acting as Academic Advisors are aware of relevant learner support services.
Academic Advising is only a part of Learner Support:

i. Employability Skills (through events)
ii. Students Activities
iii. The Library
iv. Disability issues
v. The Student Union

Employability and Career Development Centre (ECDC) is a Centre constructed through the collaboration between Ain Shams University and the American University, it has a permanent headquarter in Faculty of Engineering and another headquarter in Ain Shams University. It provides special training programmes for students in order to develop their capabilities in the professional and employment fields. The centre aims to guide the trainee to his excellence and weaknesses points, and how to raise points of excellence and overcome weaknesses.

❖ ***Local arrangements for supporting students with disabilities/dyslexia***

Faculty of Engineering provides support and equal opportunity for learning to its diverse community especially to those with disability. The faculty aimed to provide equal learning

environment to experience the same level of equality and meet the same level of academic potential. The objectives are:

i. Ensure the accessibility to all faculty facilities
ii. Ensure that admission requirements do not hinder anyone from enrolment by unnecessary barriers
iii. Encourage people with disability to courses admission by providing any possible support.
iv. Determine the needs of the disable and support staff to deal with their needs

This is through a student disability services unit. The student should fill in the form describing his/her conditions to request for disability services.
According to each case, the unit can provide:

i. Quiet areas for exams equipped with the required physical changes
ii. Providing staff members assisting for writing in exams
iii. Extra exam time
iv. Extended deadline for the assignments and attendance
v. Providing special seating place in class
vi. Providing large print hand-outs, verbal description for visual aids

- ***Local library and IT resources***

ASU - FoE central library serves students and researchers in various fields besides the Digital Library to provide an online service for users. There is (1) central library with (3) halls according to the following:

- The student library hall contains (16,461) books.
- The teaching staff hall contains (29,607) books.
- Digital Library Hall

The Digital Library serves to provide an online Service for users. It gives online access to the contents of the library, including books and theses. The digital library website: http://srv2.eulc.edu.eg/eulc_v5/libraries/start.aspx

Other learning resources are the Egyptian Bank of Knowledge (EBK) through the website: http://www.ekb.eg/ "Egyptian Knowledge Bank", is one of the largest national projects that is concerned with education in Egypt, it aims to provide huge and diversified sources for knowledge and culture for free. It comes after contracting with several international publishing houses to publish their contents in all scientific and cultural disciplines, to have the system for the new Egyptian Cultural Revolution completed. Generally, 25 global publishing house and specialised companies, the Egyptian Knowledge Bank managed to contract with to provide their contents & technologies. E-Mail Services involved a developed Cooperation of the University with Microsoft Corporation to Serve Undergraduate and Postgraduate Students offering new features for the official e-mail users.

- ***Other local resources relevant to supporting the programme***

The faculty offers students Training Support through **Global Training Technology Centre**. It aims to be a centre for innovation in technology and entrepreneurship, as to form a link between academic study and labour market. The centre offers training programmes to serve students and graduates at the same time, these training programmes aim to develop the creative sense of the trainees in order to integrate them into creative and innovative works that would serve the industrial field and the community. Depends on the overlap between the different disciplines in various fields and at various levels. The centre is nearly 1000 m² area, it works as the headquarters for the students to practice their activities in the future, and the college is preparing the headquarters of the centre to accommodate the necessary training activities.

Employability and Career Development Centre (ECDC) is a Centre constructed through the collaboration between Ain Shams University and the American University, it has a permanent headquarter in Faculty of Engineering and another headquarter in Ain Shams University. It provides special training programmes for students in order to develop their capabilities in the professional and employment fields. The centre aims to guide the trainee to his excellence and weaknesses points, and how to raise points of excellence and overcome weaknesses.

The number of computers available to students is about 600 modern machines. A suitable number of computers are available for faculty members in their respective laboratories and offices in different sections. The number of computers available to employees is 250 devices. Computer labs are running centrally for students. The method of using these labs has been adopted by setting a nominal fee of not less than two pounds per hour to use the central labs which are open to access the network, while the student does not bear any burdens to enter the laboratories associated with the ministry while the Income is suitable for the maintenance and modernization of computers in college. The databases and information systems of faculty staff members, their assistants, students, graduate students, expatriates, administrators and libraries have been developed and updated. The databases are continuously updated.

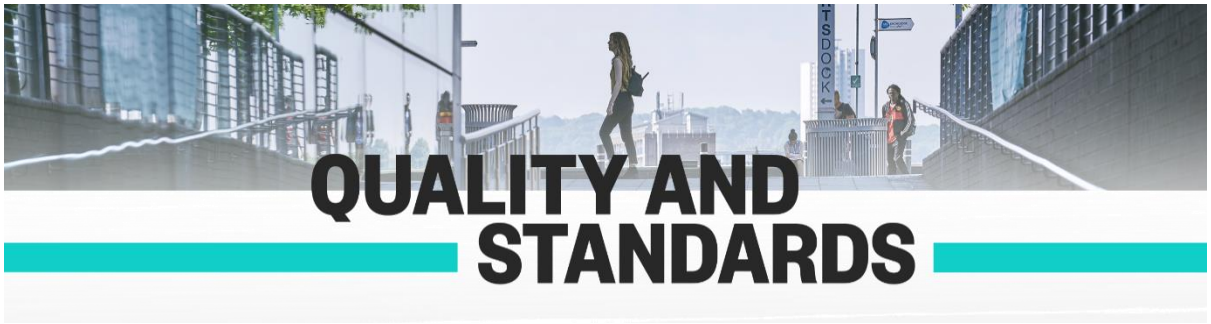
The Faculty of Engineering has a website through the main website of Ain Shams University. The website is: https://eng.asu.edu.eg/ . The website provides various services for students and faculty members by presenting the internal regulations of the bachelor's degree course as well as higher education. The site is being developed and data recorded within it are consistently updated. The contents of the various educational materials are displayed. The course schedules and exam results are announced at the end of the semester. The site is available in Arabic and English so that the user can choose the appropriate language. This site is regularly updated by site administrators and college administration. E-mail access is also available to the faculty members and the assistant staff and the students on the website of the College.

In order to update the educational services to the international standards, an online portal was developed in order to open the access to students and staff members to perform efficiently online. Students can view their courses, submit coursework and view their grades. Staff members can upload their lectures, view the online submissions and grade online. An information technology unit was set up for the electronic portal of the college to be the main focus of interaction between students and faculty.

The following table shows the available software packages and the number of license for each one:

Company	Product	License Numbers
Microsoft	Azure for student	by each student ID
	Window 10	by each student ID
	Visual Studio Enterprise 2017	by each student ID
	Visual studio for Mac	by each student ID
	SQL Server 2017 Developer	by each student ID
	SQL Server 2017 Enterprise	by each student ID
	Office 365 A1 for faculty	by each faculty ID
	Office 365 A1 for students	by each student ID
	Office 365 A1 Plus for faculty	by each faculty ID
	Office 365 A1 Plus for students	by each student ID
	Windows Server 2012 R2 Datacenter	
	Windows Server 2012 R2 Essentials	
	Windows Server 2012 R2 Standard	
Autodesk Education Community	Revit 2015	up to 1250 devices
Vmware	VRealize Suite 7 Enterprise	

	VRealize Suite 7 Standard	
	VMware vSphere 6.5 Enterprise	
	VMware vSphere 6.5 Standard	
	VMware Fusion 10	
	VMware vCenter Server 6 Standard	
	VMware Workstation 14	



You are enrolled on a course of study leading to the award of a degree of the University of East London (UEL). As such, you are regarded as a student of the University of East London as well as Ain Shams University and both institutions work together to ensure the quality and standards of the course on which you are registered.
The final responsibility for all quality assurance, validation and standards' matters rests with UEL.

Assuring the quality and standards of the award
Some of the means in which we ensure the quality and standards of the programme include:

➢ Approval of the programme and institution at which you are studying before the programme started, our University, through an approval process, checked that:

- there would be enough qualified staff to teach the programme;
- adequate resources would be in place;
- the overall aims and objectives were appropriate;
- the content of the programme met national benchmark requirements, where applicable;
- the programme met any professional/statutory body requirements if applicable; and
- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

➢ Appointment of external examiners
The standard of this programme is monitored by at least one external examiner external to UEL, appointed by UEL.

➢ External examiners have two primary responsibilities:

- To ensure the standard of the programme;
- To ensure that justice is done to all students.

➢ External examiners fulfil these responsibilities in a variety of ways including:

- Approving exam papers/assignments;
- Attending assessment boards;
- Reviewing samples of student work and moderating standards;
- Ensuring that regulations are followed; and
- Providing feedback to the University through an annual report that enables us to make improvements for the future.

Review and Enhancement Process

➢ This annual review includes the evaluation of and the development of an action plan based on:

- external examiner reports and accreditation reports (considering quality and standards);
- statistical information (considering issues such as the pass rate);
- student feedback obtained via programme committee and module evaluation questionnaires;

➢ Periodic reviews of the partnership and programme:
This is undertaken by a panel that includes at least two external subject specialists. The panel considers documents, looks at student work, speaks to students and speaks to staff before drawing its conclusions.

Link to the Student Handbook page on *Quality and Standards*: https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/Quality-and-Standards.aspx

Extenuating Circumstances are circumstances which:

- impair your examination performance or prevent you from attending examinations or other types of assessment, or
- prevent you from submitting coursework or other assessed work by the scheduled deadline date, or within 24 hours of the deadline date

The University of East London has agreed, through Academic Board, procedures governing extenuation for students concerning the assessment process.

This course will be subject to equivalent procedures, with the process being administered by, and the panel being held within, Ain Shams University – Faculty of Engineering.

If granted by the panel, **Extenuation can**
(i) Allow students to hand in coursework up to 7 days late.
or
(ii) Allow students to proceed to their next attempt uncapped.

Extenuation doesn't
(i) Give students more attempts to pass a module
(ii) Reschedule exams
(iii) Uncap a capped module
(iv) Give students a higher mark.
(v) Allow students to hand in work over 7 days late.

The basic principle is that extenuation should put you in the same position that you would have been in had you not missed the exam or handed in the assessment late – it does not confer any advantages.

UEL decided that its procedures would be
- Evidentially based
- Handled centrally by a panel of senior staff (not devolved to various parts of the organisation)
- Retain student anonymity where possible

The extenuation procedures are intended to be used rarely by students not as a matter of course.

The procedures govern circumstances which
- Impair the performance of a student in assessment or reassessment
- Prevent a student from attending for assessment or reassessment
- Prevent a student from submitting assessed or reassessed work by the scheduled date

Such circumstances would normally be

- Unforeseeable - in that the student could have no prior knowledge of the event concerned
- Unpreventable - in that the student could do nothing reasonably in their power to prevent such an event
- Expected to have a serious impact

Examples of circumstances which would normally be regarded as serious are:

- *A serious personal illness* (which is not a permanent medical condition – this is governed by disability procedures)
- *The death of a close relative immediately prior to the date of assessment*

Examples of circumstances which would *not* normally be regarded as extenuating circumstances are:

- Failure of computer equipment / USB stick
- Transport problems, traffic jams, train delays
- Misreading the exam timetables / assessment dates
- Minor illnesses

The judgement as to whether extenuation is granted is made by a panel of senior persons in the organisation who make this judgement on the basis of the evidence the student provides (not on their knowledge of the student) – where possible the identity of the student is not made available to the panel. The judgement is made on the basis that the circumstances could reasonably be thought to be the sort of circumstances which would impair the performance of the student etc. The actual performance of the student is not considered and is not available to the panel.

It is the responsibility of the student to notify the panel, with independent evidential documentary support, of their claim for extenuation.

Link to the Student Handbook page on **Extenuation**:
https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/Extenuation.aspx

Academic Appeals
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Student-Appeals

Academic Integrity
https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Academic-integrity.aspx

Academic Tutoring
https://www.uel.ac.uk/centre-for-student-success/academic-tutoring

Access and Participation Plan
https://www.uel.ac.uk/-/media/main/governance/uel-access-participation-plan-2019-2020.ashx?la=en&hash=611F4EBA4C254C535D28EF963CC8A5D40A22560D

Accreditation of Experiential Learning
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations

Assessment and Feedback Policy
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies (click on other policies)

Bus Timetable
https://uelac.sharepoint.com/EstatesandFacilitiesServices/Pages/Timetable.aspx

Centre for Student Success
https://www.uel.ac.uk/centre-for-student-success

Civic Engagement
https://www.uel.ac.uk/Connect/Civic-Engagement

Complaints procedure
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Student-Complaint-Procedure

Counselling
https://uelac.sharepoint.com/StudentSupport/Pages/Health-And-Wellbeing.aspx

Disability support
https://uelac.sharepoint.com/StudentSupport/Pages/Disability-And-Dyslexia.aspx

Engagement & Attendance Policy

https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies (click on other policies)

Equality and Diversity Strategy
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies (click on other policies)

Extenuating Procedures
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Extenuation-Procedures

IT Support
https://uelac.sharepoint.com/sites/ITServices/SitePages/Problem_Reporting/Reporting-Problems.aspx

Library Archives and Learning Services
https://www.uel.ac.uk/lls/

Manual of General Regulations
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations

Mentoring
https://www.uel.ac.uk/centre-for-student-success/mentoring

Referencing guidelines
https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Harvard-Referencing-.aspx

Student Protection Plan
https://www.uel.ac.uk/-/media/main/governance/annex-d---student-protection-plan---19-20-v5-dated-29-07-19.ashx?la=en&hash=F072ACA99BAEE007A22D649A76EBFBBE9B6D5324

Suitability Procedure (Manual of General Regulations – Part 13 – Suitability Procedure)
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations

APPENDIX A: ACADEMIC APPEALS

Students who wish to appeal against decisions of an Assessment Board, should notify the Credit Hours Engineering programs at Ain Shams University in writing, via official appeal forms downloadable via
Link will be updated later

Students who wish to appeal against a decision of an Assessment/Progression Board may appeal in accordance with the procedure for Appeals against Assessment Board decisions (Manual of General Regulations: Part 7 Appeals Against Assessment Board Decisions).

An appeal may only be made on the following grounds:

(a) The assessment was not conducted in accordance with the current regulations for the programme, or there has been a material administrative error or some other material irregularity relevant to the assessments has occurred.

(b) For a student with a disability or additional need, the initial needs assessment was not correctly carried out, or the support identified was not provided, or the agreed assessment procedures for that student were not implemented.

Appeals **will not be accepted** on the grounds of disagreement with the academic judgement of an assessment board. These remain the exclusive prerogative of the Assessment Board.

Any student who wishes to appeal against the decision of an Assessment Board must:
1. Notify the Institutional Compliance Office (***appeals@uel.ac.uk***) **within ten working days of the publication of results**.

2. Complete all sections of the notification of appeal form (please contact Institutional Compliance Office if you require the form in a different format).

3. Attend a conciliation meeting with the Chair of the Assessment Board to attempt to resolve your appeal (the meeting should be convened within 10 working days of lodging the appeal).

If you are dissatisfied with the outcome of the conciliation meeting you should submit the completed notification of appeal form to the Institutional Compliance Office **within five working days of the conciliation decision** and Institutional Compliance will formally investigate your appeal.

Disagreement with the academic judgement of a Board of Examiners' decision cannot, in itself constitute a reason to Appeal. Academic judgement is a judgement that is made about a matter where only the opinion of an academic expert will suffice. For example, a judgement about assessment or degree classification or a judgement about a decision where a student is required to repeat or take further assessment will usually be academic judgement, and a student cannot appeal simply because they believe they ought to have received a higher grade or mark. For further information on the scope of this procedure, please refer to Part 7 of the Manual of General Regulations.

Further information about the UEL appeals process, including copies of the formal Notification of Appeal Form, is available to view at https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Student-Appeals

To help you decide whether your query would be an Appeal or Complaint, please refer to https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies

If you would like to lodge a formal appeal or have any queries, please email the Institutional Compliance Office at appeals@uel.ac.uk

APPENDIX B: COMPLAINTS

If you feel that you have not received the standard of service which it would be reasonable to expect, you may be entitled to lodge a complaint. Complaints should be used for serious matters, and not for minor things such as occasional lapses of good manners or disputes of a private nature between staff and students

Separate procedures exist for the following, which therefore cannot form the substance of a complaint:

- appeals against the decisions of Assessment Boards (**Manual of General Regulations : Part 7 Appeals Against Assessment Board Decisions**);
- appeals against annual monitoring reviews, transfer of research degree registration or oral examination decision for postgraduate research students (**Manual of General Regulations: Part 9 Research Degrees**);
- appeals against the decisions of the Extenuation Panel (**Manual of General Regulations: Part 6 Extenuating Circumstances**);
- complaints against the Students' Union (see the **Complaints Procedure** in the **Students' Union constitution**);
- appeals against decisions taken under disciplinary proceedings **(Manual of General Regulations: Part 12**);
- complaints about businesses operating on University premises, but not owned by our university (contact the Deputy Vice-Chancellor and Chief Operating Officer);
- complaints about the behaviour of other students (see **Part 12 of the Manual of General Regulations this Manual**);
- appeals against the decisions of Academic Misconduct Panels (see **Part 8 of the Manual of General Regulations**)
- appeals against the decisions of Attendance Appeal Panels (see the **University's Attendance Policy**).

Students wishing to submit a complaint must, in the first instance, follow the complaints policy of which aligns to the Office of the Independent Adjudicator's good practice framework (https://www.oiahe.org.uk/media/96361/oia-good-practice-framework.pdf). The ASU-FoE complaints policy is available at: Link will be updated later

ASU- FoE has a complaints process which adheres to the four stages of the University of East London complaints process. The three possible stages of the complaint process are:

STAGE 1: Local Resolution
STAGE 2: Formal Complaint
STAGE 3: Review

Stages 1 and 2 will be administered by ASU- FOE and the University of East London will administer Stage 3, including the issuing of a Completion of Proceedings letter in response to each Stage 3 complaint. ASU – FoE is responsible for keeping the University of East London informed of all complaints received.

ASU-FoE will administer all stages of its complaints policy and, upon exhaustion of this policy, will issue a formal letter to the complainant notifying them that its complaints policy has been exhausted. If the complainant is still not satisfied with the outcome they will be entitled to request that the University of East London undertake a review of their complaint.

The University of East London will conduct a review of the complaint in accordance with Stage 3 of its own Complaints Procedure. The University of East London Complaints Procedure is available at:
https://www.uel.ac.uk/discover/governance/policies-regulations-corporate-documents/student-policies/manual-of-general-regulations

The University of East London will administer the Stage 3 review in accordance with its Complaints Procedure and, upon completion of the review, will issue a Completion of Procedures Letter. If the complainant is still not satisfied with the outcome they will be entitled to make a complaint to the Office of the Independent Adjudicator.

Complainants are strongly advised to make every reasonable effort to resolve their complaint informally through meeting with the member of ASU-FoE staff most directly concerned with the matter, such as the Course or Module Leader, before submitting a formal complaint.

Complaints must normally be lodged within the set time limits outlined in the relevant complaints policy. This ensures that the people involved still remember the case, and the facts can be established.

If you would like to request that the University of East London undertake a review, following the exhaustion of the ASU-FoE complaints policy, please email the Complaints and Appeals Office at complaints@uel.ac.uk