CN4000 & CD4000

Information Systems Modelling & Design

Term(s): 2021/22

University of East London

School of Architecture, Computing and Engineering

Immersive Reading

The Immersive Reader in Office 365 - YouTube

CONTACT INFORMATION

MODULE LEADER

Name: Arish Siddiqui

Email: arish@uel.ac.uk

Tel: 0208 223 2594

Room Number: EB 1.86

ADDITIONAL CONTACT(S)

Name: Solomon Alexis

Role: Tutor

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Room Number: EB 1.88

The Module Leader/Other Tutors and Contact Details were correct at point of publication. You will be notified of any changes.

MODULE INTRODUCTION

This is a first level module within the Computing for Business and Computer Science programme to develop skills and techniques required for analysing, modelling and designing information systems and understand the legal, social, ethical and professional issues relating to the software development.

Main topics of study:

- Types of information systems and their role in Computing and their economic impacts in Business/Organisation;
- The component parts of Information Systems and their operations;
- Development of information systems – Requirement Analysis;
- Introduction and comparison of A/D methodologies, models and methods used in A/D (Analysis and Design)
- Object Oriented Technology - Features, OO terminologies & techniques;
- Introduction to Object Oriented A/D and UML;
- System Requirement Analysis using Object Oriented techniques / UML tools;
- Use Case Modelling, States & Activity modelling;
- Legal, ethical, economic and professional issues relating to Information Systems
- Issues about IS security, individual privacy, intellectual property and legal obligations relative to information systems

MODULE AIMS AND LEARNING OUTCOMES

The aims of this module are:

- To promote an understanding of different methods of developing information systems and the characteristics of information.
- To introduce and provide practical experience of requirement analysis, system analysis and the tools and techniques used.
- To promote an understanding of the role of information in the decision making process.
- To develop basic skills in certain fundamental techniques of information systems planning and analysis.
- To promote an understanding of the social and ethical issues relating to information system design.

Learning Outcomes for the module

- *Digital Proficiency - Code = (DP)*
- *Industry Connections - Code = (IC)*
- *Emotional Intelligence Development - Code = (EID)*
- *Social Intelligence Development - Code = (SID)*
- *Physical Intelligence Development - Code = (PID)*

- *Cultural Intelligence Development - Code = (CID)*
- *Cognitive Intelligence Development – Code = (COI)*
- *Community Connections - Code = (CC)*
- *UEL Give-Back - Code = (UGB)*

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

Knowledge

1. Describe various A/D methodologies, principles of object-oriented technology, methods and tools used for the modelling, designing and development of information systems (DP)
2. Identify the key issues relating to Information Security, legislation in Data management and the role of professional bodies in the context of IT (CID, SID, IC)

Thinking skills

3. Contrast the roles of management information and decision support systems in an organisation (DP, CID, COI).
4. Analyse problems associated with modelling and designing Information Systems. (SID, PD, COI).

Subject-based practical skills

5. Apply object-oriented methods in the design, modelling and evaluation of computer-based applications (DP).
6. Design and model a simple information system using object-oriented models and tools (PD).

Skills for life and work (general skills)

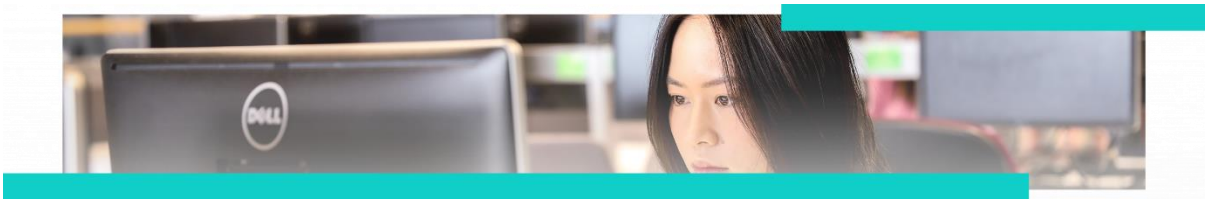
7. Work effectively as a member of a team in developing prototype and present models for a given scenario and demonstrate appropriate academic integrity (PID, SID, DP).
8. Identify the ethical and legal issues involved in the implementation of Information Systems and its development (CID, DP).

KEY INFORMATION

Module Title: Information Systems Modelling and Design **Term:** 1	**Module Code:** CN4000 **Level: 4** **Credit: 20** **ECTS credit: 10**	**Module Leader**: Arish Siddiqui **Team:** Solomon Alexis
Pre-requisite: None	**Pre-cursor:** None	
Co-requisite: None	**Excluded combinations:** None	**Suitable for incoming study abroad?** Y
Location of delivery: UEL		
This module will be able to demonstrate at least one of the following examples/ exposures ***Live, applied project*** ☐ ***Company/engagement visits*** ☒ ***Company/industry sector endorsement/badging/sponsorship/award*** ☐		
Teaching/ learning methods/strategies used to enable the achievement of learning outcomes: **For on campus students:** **Lectures** The module will be delivered through a combination of lectures, tutorials and practical sessions. Lectures will be used to introduce the theoretical aspects of the course. They will not necessarily be of a traditional didactic nature and students may be required, where necessary, to participate proactively. **Tutorial Sessions** The tutorials will be used to reinforce the concepts introduced in the lecture through a combination of individual and group work activities. The module team will assume that you have prepared for each of the tutorial sessions by undertaking the required reading or preparatory tasks. You are unlikely to gain any benefit from the tutorials unless you have prepared beforehand and participate fully in all of the activities while you are there. To provide you with sufficient time to prepare we have staggered the tutorials. Tutorials in Topic 2 will cover the material of Topic 1, tutorials in Topic 3		

will cover the material introduced in Topic 2 and so on, and thus there is no tutorial in Topic 1.	
Company/engagement visits: *guest talks from industry*	
Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction: 24 hrs 24 hrs	 Lecture Tutorial/Practical
2. Student learning time: 152 hrs	 Essential and background reading, private study, practical work and assessment preparation.
Total hours (1 and 2):	200 hrs

ASSESSMENT INFORMATION



Assessment

Weighting:

In-Class Assessment 20%	Presentations 20%	Report 60%
Continuous (during tutorial sessions 1-12) **Please check Moodle for further information**	**Week 9** **Please check Moodle for further information**	**Week 12** **Please check Moodle for further information**

Due date / time:

Please refer to the Moodle links for submission

Learning outcomes assessed:

Assessment methods which enable students to demonstrate the learning outcomes for the module:	Weighting:	Learning Outcomes demonstrated:
Portfolio Continuous Assessment, including regular practical tasks and 15 Minute Presentation (50 hours of student effort).	100%	1-8

Assessment criteria:

Please refer to the coursework for details

How to submit your work:

All submissions for this component(s) of this Module must be submitted according to these instructions. If you fail to submit this component as directed, in accordance with the guidance provided on the Virtual Learning Environment (Moodle), a mark of 0 will be awarded for the component.

Turnitin is required for coursework assessments, such as report/research papers or projects in Microsoft Word, PowerPoint, and in PDF format. There are two main reasons we want you to use Turnitin:

- Turnitin can help you avoid academic breaches and plagiarism. When you use Turnitin ***before*** a submission deadline, you can use the Originality Report feature to compare your work to thousands of other sources (like websites, Wikipedia, and even other student papers). Anything in your work that identically matches another source is highlighted for you to see. When you use this feature ***before the deadline,*** you will have time to revise your work to avoid an instance of academic breach/plagiarism.
- Turnitin saves paper. When using Turnitin to electronically submit your work, you will almost never have to submit a paper copy.

REASSESSMENT ARRANGEMENTS

- In case you fail in the first attempt, re-sit opportunity will be proved which is normally capped at 40%.
- the assessment details and dates will be provided by the Module Leader.

LATE SUBMISSIONS

We strongly suggest that you try to submit all coursework by the deadline set as meeting deadlines is expected in employment. However, in our regulations, UEL has permitted students to be able to submit their coursework up to 24 hours after the deadline. The deadline will be published in your module guide. Coursework which is submitted late, but within 24 hours of the deadline, will be assessed but subjected to a fixed penalty of 5% of the total marks available (as opposed to marks obtained). However, you have to **be very careful when you are submitting your assessment**. If you submit your work twice, once using the original deadline link and then again

using the late submission link, your assignment will be graded as late with the 5% deduction.

Please note that if you submit twice, once before the deadline and once during the 24-hour late period, then the second submission will be marked and 5% deducted.

This rule only applies to coursework. It does not apply to examinations, presentations, performances, practical assessments or viva voce examinations. If you miss these for a genuine reason, then you will need to apply for **extenuating circumstances**, or accept that you will receive a zero mark.

Extenuating Circumstances are circumstances which:

- impair your examination performance 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

Such circumstances rarely occur and would normally be:

- **unforeseeable** - in that you could have no prior knowledge of the event concerned, and
- **unpreventable** - in that you could do nothing reasonably in your power to prevent such an event, and
- expected to have a **serious impact** on performance

You can make an application for extenuating circumstances by following this link: https://uelac.sharepoint.com/StudentSupport/Pages/Extenuation-information.aspx

RETURN OF WORK AND FEEDBACK

Arrangements for the publication of results is stated in the Course Handbook. Formal results are ONLY available in UEL Direct, and will be published within 8 working days of the Board, where results are formally confirmed. Any other results are provisional / indicative but not approved.

You will receive feedback throughout your course through the following:

	one-to-one or individualised *(i.e. tutorials, conversations with supervisors, or individualised comments on assignments)*
	generic feedback *(i.e. use of rubrics, 'Quickmarks' in Turnitin or standardised forms)*
	peer feedback *(i.e. feedback from other students)*
	informal feedback *(i.e. through in-class discussions or online forums)*
	self-evaluation *(i.e. online checklists or reflective submissions)*
	other *(see below)*

Feedback and students' marks should be provided within 15 working days of the due date for summative work (i.e. work that counts towards the final course grade) and formative work (i.e. work that is developmental and designed to help you improve).

Whilst feedback will be given on draft/formative work, it shouldn't be assumed that every aspect will be identified.

ONLINE SYSTEM FAILURES

If you experience a problem submitting your work online, you should notify your lecturer/tutor by email immediately. However, deadlines are not extended unless there is a significant systems problem with Turnitin. UEL has specific plans in place to address these issues. If UEL finds that the issue with the system was significant, you will receive an email notifying you of the issue and that you have been given a 24-hour extension. **If you don't receive any email that specifically states you have been given an extension, then the original deadline has not been changed**.

Best advice: Don't wait until the last minute to submit your assessments electronically.

MORE INFORMATION

A guide to submitting your work through **Turnitin**:
https://moodle.uel.ac.uk/mod/book/view.php?id=762499&chapterid=46648

A guide to viewing and understanding the similarity report in **Turnitin**:
https://moodle.uel.ac.uk/mod/book/view.php?id=793923&chapterid=46752

Guide to **Extenuating Circumstances**:
https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/Extenuation.aspx

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

TEACHING SCHEDULE

Undermentioned is the list of topics to be covered during the teaching period. However, sequence of delivery may vary.

TOPIC #	TOPIC	CHAPTER
1	Basic Concepts – understanding information	1
2	An introduction to acquiring BIS and SDLC	2
3	System development methodology	7
4	Initiating System Development and Project Management	8, 9
5	System Analysis	10
6	System Design Part 1	11
7	System Design Part 2	11
8	Software and Business Intelligence	3,4
9	Information systems and Computer Networks	5
10	Information Security	15
11	System Build, Implement & Maintain	12
12	Ethical, legal and moral constraints on information systems	17

TEACHING SCHEDULE, Detailed

Topic 1

Subject	**Basic Concepts – understanding information**
Lecture Content	The following topics will be considered during the lecture: • Introduction to the Module; the module team, the topics to be covered and the mode of assessment. • Definitions of data and information • Creating information • Qualities of information • The business environment • Managerial decision making
Tutorial	No Tutorial
Learning Outcomes	To be able to: – distinguish between data, information and knowledge; – describe and evaluate information quality in terms of its characteristics; – classify decisions by type and organisational level;

	– identify the information needed to support decisions made at different organisational levels.
Required Reading	**Chapter 1 from the essential text**

Topic 2 & 3

Subject	**An introduction to acquiring and developing BIS**
Lecture Content	The following topics will be considered during the lecture: • BIS • Resources that support BIS • Categories of BIS • E-business systems • How and why are information systems acquired • Bespoke development and the traditional waterfall model • Purchase of an off-the-shell package • System Development Life Cycle.
Tutorial	Questions and discussion on: systems and system components; behaviour of systems; BIS types; strategies and methods for gaining competitive advantage through the use of BIS. different alternatives for acquiring BIS; typical stages involved in building BIS.
Learning Outcomes	You will be able to: – evaluate the different alternatives for acquiring BIS; – distinguish between the typical stages involved in building BIS; – explain the purpose of each stage in building a system; – select the best alternative type of approach or methodology for building a BIS
Required Reading	**Chapter 7 from the essential text**

Topic 4

Subject	**Initiating systems development and project management**
Lecture Content	The following topics will be considered during the lecture: • Reasons for project initiation • Different aspects of the feasibility study • Risk management • Acquisition choices and methods • Project management
Tutorial	Questions and discussion on: costs and benefits associated with the introduction of an information system; project management.

Learning Outcomes	You will be able to: – explain the importance of conducting a structured initiation phase for a BIS project; – identify typical tangible and intangible costs and benefits associated with the introduction of an information system; – apply different techniques to select the most appropriate options from different software, hardware and supplier alternatives; – describe the importance of contracts to a successful outcome to information systems projects – understand the main elements of the project management approach
Required Reading	**Chapters 8 and 9 from the essential text**

Topic 5

Subject	**System Analysis**
Lecture Content	The following topics will be considered during the lecture: • Identifying requirements • Documenting the findings • System analysis – an evaluation • Software tools for system analysis • Soft System Methodology
Tutorial	Questions and discussion on: The importance of conducting the analysis phase to the overall success of the system; appropriate techniques for analysing users' requirements for an information system. Practical activities on analysis and design
Learning Outcomes	You will be able to: – define the importance of conducting the analysis phase to the overall success of the system; – choose appropriate techniques for analysing users' requirements for an information system; – construct appropriate textual descriptions and diagrams to assist in summarising the requirements as an input to the design phase
Required Reading	**Chapter 10 from the essential text**

Topic 6, 7

Subject	**System Design**
Lecture Content	The following topics will be considered during the lecture: • Aims of system design • Constraints on system design

	• The relationship between analysis and design • Elements of design • Object Oriented approach • System and Detailed Design • Use Case Analysis • ERD
Tutorial	Questions and discussion on: relational database design and normalization; system build, implementation and maintenance activities.
Learning Outcomes	You will be able to: – define the difference between analysis and design and the overlap between them; – synthesise the relationship between good design and good-quality information systems; – carry out analysis and design of a simple system
Required Reading	**Chapter 11 from the essential text**

Topic 8

Subject	**Software and Business Intelligence**
Lecture Content	The following topics will be considered during the lecture: • Categories of software • Databases • Components of a computer system • Input and output devices • Storage devices and units of data measurement
Tutorial	Questions and discussion on Hardware and Software that make up an IS.
Learning Outcomes	You will be able to: – categorise the type of computer system that a business uses; – recognise the different components of a computer; – explain the purpose of software applications in different categories; – describe some of the ways in which applications software supports the activities of a business organization.
Required Reading	**Chapters 3 and 4 from the essential text**

Topic 9

Subject	**Networks, telecommunications and the Internet**
Lecture Content	The following topics will be considered during the lecture: • Computer Networks and Network components • The evolution of networking technology • Internet standards

	• Wide area network • Local area network
Tutorial	Questions and discussion on: types of computer network and communications and their benefits.
Learning Outcomes	You will be able to: – specify which components of a communications system are necessary to exchange information within and between businesses; – explain the basic components and terminology of networks, including the Internet; – identify the benefits available through the introduction of computer networks; – identify the advantages and disadvantages of the client/server architecture in comparison with traditional approaches; – explain the broad implications of the Internet on the marketplace.
Required Reading	**Chapter 5 from the essential text**

Topic 10

Subject	**Information System Security**
Lecture Content	The following topics will be considered during the lecture: • Understand and assess potential threats to a computer-based IS. • Propose an overall strategy for ensuring the security of an IS. • Identify specific techniques that can be used to protect IS against damage and unauthorised access.
Tutorial	Questions and discussion on:Information security and knowledge about controlling it.
Learning Outcomes	You will be able to: – An understanding of approaches towards IS and overall strategy for security – An understanding of the threats to IS. – Knowledge to protect IS.
Required Reading	**Chapter 15 from the essential text**

Topic 11

Subject	**System build, implementation, and maintenance**
Lecture Content	The following topics will be considered during the lecture: • state the purpose of the build phase, and its difference from changeover and implementation; • specify the different types of testing required for a system at the software change level;

	• select the best alternatives for changing from an old IS system to a new IS system; • recognise the importance of managing the organisational change associated with the introduction of a new IS.
Tutorial	Questions and discussion on system change, implementing new systems and importance of managing organisational change.
Learning Outcomes	You will be able to: – How should the system be tested? – How should data be migrated from the old system to the new system? – How should the changeover between old and new systems be managed? – How can the change to a process-oriented system be managed?
Required Reading	**Chapter 12 from the essential text**

Topic 12

Subject	**Ethical, legal and moral constraints on information systems**
Lecture Content	The following topics will be considered during the lecture: • Professionalism, ethics and morality • Codes of conduct • Social issues • Legal issues • Software piracy
Tutorial	Questions and discussion on: IS for operational management of a business; IS for decision support at tactical and strategic levels of an organization.
Learning Outcomes	You will be able to: – analyse decisions and courses of action from professional, ethical and moral perspectives; – select appropriate and legal courses of action in keeping with professional codes of conduct; – understand and respond to issues of concern, such as personal privacy.
Required Reading	**Chapter 17 from the essential text**

ATTENDANCE REQUIREMENTS

As a UEL student you are expected to attend all scheduled sessions, including lectures, seminars, group work and tutorials – whether online or face to face. You are also expected to be punctual, to be respectful of others' time as well as your own, to participate whilst present, to put in time to study between classes, to prepare for taught

sessions and to be active participants in both group work and your own learning experience.

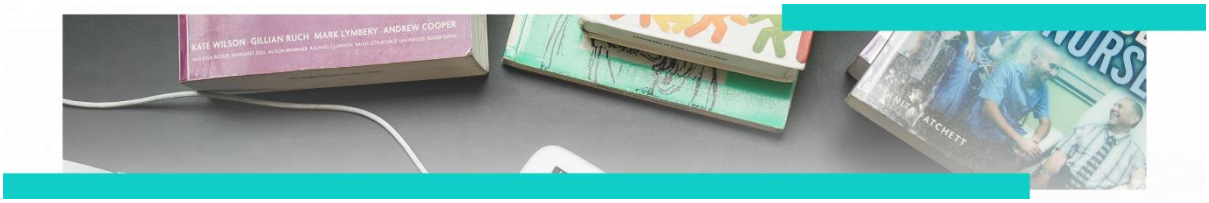
MORE INFORMATION

Link to your **personal timetable**:
https://uelac.sharepoint.com/students/Pages/Timetable-and-Attendance.aspx

Link to the **University of East London Campus Maps**:
https://uelac.sharepoint.com/Pages/Maps-and-key-buildings-at-UEL.aspx

Link to the **Guide to Room Numbers:**
https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/Guide-to-Room-Numbers.aspx

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.

MORE INFORMATION

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

Video guide to using referencing software Zotero: https://youtu.be/WXGdRBN1Ovk

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

ASSESSMENT FEEDBACK

WHAT IS FEEDBACK?

Feedback is crucial for your learning and it is an important part of the academic cycle. It tells you what the strengths are of your work, what its weaknesses are and how it can be improved.

WHY IS FEEDBACK IMPORTANT?

Feedback is the most effective way to: Help you understand how to succeed in your assessments; Help you produce better work for the future; Signpost you to other resources for assistance.

If you pay attention to feedback, particularly where the same comment is made in several modules, you can use the information to improve.

WHERE DO I GET FEEDBACK?

- When a tutor comments on your answers in seminars/lectures/workshops
- General comment on assessment performance in lectures and seminars
- General comment on questions prepared for seminars
- When another student makes comments on your presentation
- When you produce practice questions for a tutor who gives comments
- When you receive written comments on your work submitted either as coursework or exam
- When you look at general feedback on module performance on UEL Direct.
- When you see your Academic Adviser with all your assessment feedback for general advice. You should always do this after each assessment period.

MORE INFORMATION

Link to information about the **Centre for Student Success**: https://uelac.sharepoint.com/sites/studenthandbooks/SitePages/The-Centre-for-Student-Success.aspx

READING AND RESOURCES

CORE:

- Bocij, B. Greasley, A. and Hickie, S (2018) *Business Information Systems*. 6th edn. London: Prentice Hall.

- Bennett, S.,McRobb, S. and Farmer, R. (2010) *Object-oriented system analysis and design using UML.* 4th edn. London: McGraw Hill.

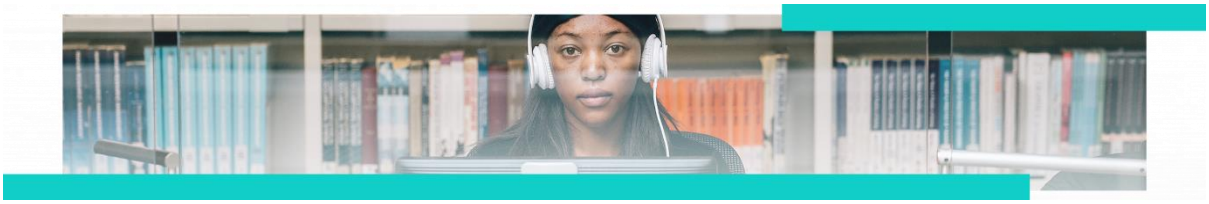
OTHER RESOURCES AND FORMS:

Recommended

- Whiteley, D. (2013) *Introduction to Information Systems.* London: Palgrave Macmillam

- Laudon, K. Laudon, J. (2013) *Management Information Systems.* 6th edn. Pearson Education.

KEY LINKS



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

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)

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

Frequently-Asked Questions
https://uelac.sharepoint.com/sites/studenthandbooks/ModuleGuides/SitePages/Frequently-Asked-Questions.aspx

Health and Safety
https://uelac.sharepoint.com/EstatesandFacilitiesServices/Pages/health-&-safety.aspx

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
Track My Future
Track My Future - Home (sharepoint.com)