Dr.Chinnu Mary George

Department of Computer Engineering and Informatics

Full Stack Development

CST3144

Module Coordinator in Dubai: Dr. Chinnu Mary George

Semester 1 2024-25

[Duration of the module: 12 weeks]

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Online location of handbook

This handbook can also be accessed online via MyLearning at: https://mymdx.mdx.ac.uk/campusm/home#menu

Other formats available

This handbook is available in a large print format for students with any disability. If you would like a large print copy or have other requirements for the handbook, please contact CampusCentral via our **AskMDX service:** https://askmdx.mdx.ac.ae We can supply sections from this publication as:

- a Word document with enlarged type — sent by email
- printed copy with enlarged type
- printed copy on non-white paper

Other formats may be possible. We will do our best to respond promptly. To help us, please be as specific as you can about the information you require and include details of your disability.

Disclaimer

The material in this handbook is as accurate as possible at the date of production. You will be notified of any minor changes promptly. If there are any major changes to the module, you will be consulted prior to the changes being confirmed. Please check the version number on the front page of this handbook to ensure that you are using the most accurate information.

Other documents

Your module handbook should be read and used alongside your programme handbook and the information available to all students on MyLearning and MyMDX, including the Academic Regulations. Your programme handbook can be found on the My Learning programme page for your course. The Dubai Campus Guide can be found at www.mdx.ac.ae/life-at-university/campus-guide

Table of Contents

Welcome

This module aims to develop a deep understanding of the latest full stack programming techniques, frameworks, and methodologies used by industry to develop the next generation software, which can be deployed on a wide range of devices and systems. The students will investigate, develop, and deploy the latest programming language standards, which are fundamental to app development, and currently being widely employed in industry. Modern programming frameworks will be introduced to provide the essential software architecture for large-scale software development, and the ability to target a wide range of platforms. The module will cover the three most important components of a complete architecture for a software application: Front-End, Back-End, and System Administration. This handbook will guide you on important aspects, including how to approach to the module, how it is organised, what the assessment entails, and related rules.

The module teaching team

Module Coordinator: Dr. Chinnu Mary George		
	Room number:	Room 309 , Block 16
	Email:	c.george@mdx.ac.ae
	Telephone number:	04 367 8100
	Office hours:	Tuesday -11:30am to 12:30pm

Communication with the teaching team

You are welcome to reserve an appointment during my office hours for timings that might suit us both. Please email me your appointment request along with your inquiry from your university email account. Don't forget to state your student ID number and module code and name in your email/online booking request. If you turn up at the door unannounced or phone at an unsuitable time, then you are far less likely to make contact.

I will send urgent messages about the module to you by email and/or the Microsoft Teams platform, so it is important that you read your university email and check your MS Teams notifications regularly. I recommend that you check your email and MS Teams accounts at least three times a week. I will also use these accounts to tell you about events (guest lectures or academic enrichment sessions, for example) and career opportunities (employability workshops, internships, job offers and so on) that will help enhance your learning.

Use your Middlesex email address when contacting members of staff to avoid emails being caught in University spam filters. Please also always include your full name, student number, programme name, year of study and module details when contacting staff.

For all queries that don't relate to your programme of study (e.g. fees, wellbeing, accommodation, IT issues, etc.) you should directly contact Campus Central AskMDX (https://askmdx.mdx.ac.ae/) rather than your module tutors. This will help ensure you get a response more quickly.

Check the Middlesex Dubai website, UniHub and MDX Central App regularly during term-time for any other notifications or announcements. Attempt to look for basic answers to questions (e.g. by using UniHub, Dubai Campus Guide or MDX Central App) before contacting staff.

Take time to write polite emails (as you would in professional employment) in all communications with staff. This should include use of a clear subject line to indicate the subject of your message and previous emails on the conversation thread.

Respond to emails from staff within three working days (i.e. not including weekends, public holidays or University closure days) and allow staff the same period of time (three working days) to respond to your queries. Whilst staff may occasionally choose to respond to emails outside of normal working hours (Monday – Friday, 9am – 5pm), this should not be expected as standard. If you don't hear back from a member of staff within the three working days timeframe, then sending a reminder email is encouraged, but not sooner. You can also try raising the question with a different member of staff – e.g. your Campus Programme Leader/Coordinator. You can find contact details for these members of staff within MDX Central App. If a staff member is away from work, they may have set up an 'out of office' automated email that will provide instructions of how you can get your query answered in their absence – so make sure that you carefully read any such messages.

Contact your Module Coordinator(s) and / or the Campus Programme Leader/ Coordinator if you are absent for any period of time and cannot attend scheduled teaching.

For all queries that don't relate to your programme of study (e.g. fees, wellbeing, accommodation, IT issues, etc.) you should directly contact Campus Central AskMDX (https://askmdx.mdx.ac.ae/) rather than your module tutors. This will help ensure you get a response more quickly.

MyMDX App and Web Portal

MyMDX is Middlesex University's official and free student mobile and desktop application that allows students to manage their learning online. You will need to log-in via your **@live.mdx.ac.uk** credentials. MyMDX was developed in collaboration with students to make sure they get the most out of their studies at the University. Through MyMDX, students have access to online enrolment, research materials, teaching materials, their personal information record, and grades and assessment decisions.

You should seek the assistance of the IT Office (Helpdesk@mdx.ac.ae) if you have trouble logging in.

If you have a financial hold on your student record, you will be able log in to the MyMDX portal (deadlines apply), but links to other systems will be disabled until the financial hold is removed (please see link: https://www.mdx.ac.ae/studentfinance/student-finance-regulations).

Getting MyMDX is easy
Go to **App Store** >> Search for **'MyMDX'** >> Install (accept T&C's) >> Log in with Middlesex University Student IT User ID (@live.mdx.ac.uk) and Password.

Web app users can download MyMDX here: https://mymdx.mdx.ac.uk

Available on **iOS** and **Android** software and as a Web App

To find out more you can:
- Visit the Example page (please note that you need to be logged in to MyMDX for direct links to work)
- Search 'Example' in MyMDX.

You should seek the assistance of the IT Office if you have trouble logging in. If you do not find your Modules showing on the MyMDX, please contact our Campus Central team or raise a support request via **AskMDX** (https://askmdx.mdx.ac.ae).

MDX Dubai App and Web Portal

MDX Dubai is a dedicated space that provides you with the key information and resources you will need as a Middlesex University Dubai student. You will need to log-in via your **@studentmdx.ac** credentials. Here you will find a key information about your weekly timetable for learning, attendance, what's happening on campus and events, live updates about all things Middlesex Dubai, the student helpdesk AskMDX (https://askmdx.mdx.ac.ae), and MDX social accounts.

Getting MDX Dubai is easy
- To access MDX Dubai on your browser, use the link below to log in with your 'Campus User Account' details. Your Campus User Account Email ID looks like this: **M011111111@studentmdx.ac**. You can access the MDX Central – Student Portal on your internet browser via this link: https://mdxcentral.mdx.ac.ae

- To access the MDX Dubai mobile app, search for and download 'MDX Dubai' via the Play Store for Android and the App Store for iOS.

Download the user guides for the MDX Dubai Student Portal and MDX Dubai mobile app for further information about how to use each platform.

Module overview

Module Narrative

Aims
This module aims to develop a deep understanding of the latest full stack programming techniques, frameworks, and methodologies used by industry to develop the next generation software, which can be deployed on a wide range of devices and systems. The students will investigate, develop, and deploy the latest programming language standards, which are fundamental to app development, and currently being widely employed in industry. Modern programming frameworks will be introduced to provide the essential software architecture for large-scale software development, and the ability to target a wide range of platforms. The module will cover the three most important components of a complete architecture for a software application: Front-End, Back-End, and System Administration.

Learning outcomes Knowledge
LO1 Justify and deploy the latest programming standards, technologies, and strategies required for advanced software development.

LO2 Evaluate the main characteristics, strengths, and weaknesses of the latest software architecture frameworks.

LO3 Critically evaluate the methodologies of developing platform-independent software, and the strength and weakness of existing solutions.

Skills

LO4 Create a Front-End solution by employing best practices for advanced software development.

LO5 Deploy and manage essential technologies for dependency management.

LO6 Design and develop a Back-End solution with advanced technologies including software hosting and data storage.

Syllabus

Topics that will be covered throughout the module include:

- *Programming Front-End solutions.*
- *Advanced interactivity for Front-End solutions.*
- *Version Control for software systems.*
- *Refactoring of software systems.*
- *Advanced Design and Development of software applications.*
- *Full Stack Development and Dependency Management.*
- *Advanced Back-End technologies and Administration.*
- *Programming Platform-Independent software applications.*
- *Communication between Front-End and Back-End technologies.*

- *Deployment of Software Applications.*
- *App Hosting and Data Storage.*

Learning and teaching strategy

Weekly contact hours:

- *Workshop: 2 hrs (activities including for example Theory, Practice, Tutorials, CW Demo, CW Support, CW Q&A, etc., depending on the stage of the Module)*
- *Laboratory: 3 hrs*
- *Drop-in online session: 1 hr*

The focus of teaching will be a mixture of activities, lab-based practical work, and discussions, using a Project-Based Learning (PBL) approach. Skills and experience are built up progressively through weekly lab sessions in order that the students can implement a full stack software application. Various tools for software development will be introduced throughout the module as they become necessary. The student will develop their individual application through in-class discussions, peer-to-peer collaboration with other students, and self-study.

Delivery method:

☒ On-campus/Blended
☐Distance Education

Assessment scheme

(a) Formative assessment scheme

Students will receive formative feedback on summative assessments tasks. Students will be expected to work towards a complete software application, mastering related architecture and technologies. The students will be formatively assessed by using a Project-Based Learning (PBL) approach, which will support students in the labs.

(b) Summative assessment scheme
The coursework gives students the opportunity to put into practice the theories, frameworks, and libraries covered in the module. The coursework will focus on the Full-Stack aspects of a complete software application development.
Task: Full Stack Software Application Development (Individual) This application development coursework will allow students to apply knowledge and skills in the latest programming standard to design and implement a full-stack software application architecture.

The deliverable of this coursework will consist of software code and students are expected to run a short demonstration of the application.

Weighting	**Specification e.g. word count / duration / no. of pages**	**LO mapped to**	**Anonymously marked**	**Ethics approval required**
100%	Demonstration (maximum 10 minutes). Zip file of the project (code of the resulting software) must be no more than 10MB. Deadline: week 11.	1- 6	☒ *No* ☐ *Yes*	☒ *No* ☐ *Yes – individual student* ☐ *Yes – group approval* ☐ *Yes – whole module*

In order to pass the module, the student will be required to achieve either:

☒ an overall aggregate of grade 16;
☐ an overall aggregate of grade 16 with a minimum of grade 16 in each assessment component
☐ an overall aggregate of grade 16 with a minimum of grade 17 in each assessment component
☐ an overall aggregate of grade 16 with a minimum of grade of 18 in each assessment component

Seen examination	**……..%**
Unseen examination	……..%
Coursework (no examination)	100%

Type	**Hours**
Independent study	228
Scheduled Teaching	72

Research Ethics

The teaching, learning, assessment and research activities undertaken in this module have been considered and are <u>not likely to require ethical approval</u>.

- However, please seek advice if undertaking the module entails carrying out any research activities involving **human participants, human data, animals/animal products, precious artefacts, materials or data systems or social media.** If you submit work that includes data gathered from or about people, this may be treated as academic misconduct and could lead to fail grade being awarded.
- Research ethics approval seeks to ensure all research is designed and undertaken according to certain principles of ethical research. These include:
  1. Primary concern must be given to the **safety, welfare and dignity** of participants, researchers, colleagues, the environment and the wider community
  2. Consideration of **risks** should be undertaken before research commences with the aim of minimising risks to those involved – i.e. human participants or animal subjects, colleagues, the environment and the wider community, as well as actual or potential risks to those directly or indirectly affected by the research.
  3. **Informed consent** should be freely given by participants, and only by a trained person when collecting or analysing human tissue.
  4. Respect for the **privacy, confidentiality and anonymity** of participants
  5. Consideration of the rights of **people who may be vulnerable** (by virtue of perceived or actual differences in their age, social status, ethnic origin, gender, mental capacities, or other such characteristics) who may be less competent or able to refuse to give consent to participate

6. For participants below the age of 18, parental consent must be obtained prior to the study.
7. Researchers have a responsibility to the general public and to their profession; as such they should balance the anticipated benefits of their research against **potential harm, misuse or abuse** which must be avoided
8. Researchers must demonstrate the highest standards of **ethical conduct and research integrity**. They must work within the limits of their skills, training and experience, and refrain from exploitation, dishonesty, plagiarism, infringement of intellectual property rights and the fabrication of research results. They should declare any actual or potential conflicts of interest, and where necessary take steps to resolve them.
9. When using human tissues for research, the UK's Human Tissue Act and Human Tissue Authority (HTA) requirements must be met. Please contact the relevant designated person (DP) in your department or the HTA Designated Individual (DI).
10. Research should **not involve any illegal activity**, and researchers must comply with all relevant laws

You can apply for research ethical approval using the Middlesex University Dubai Ethics Form. The relevant forms, templates and guidance on the approval process can be obtained from the module folder on MyMDX.

Your module coordinator can provide further guidance. Additionally, documents can be found through the following link https://bit.ly/35Zp7MZ

Learning resources

This module has a variety of learning resources available for you to use to support your learning. These include recorded lecture, lecture slides, feedback, and key reading materials. These can be accessed online via the module page. Please visit the module page regularly to make use of these.

Expectations of studying this module

Attendance and Engagement

The University's formal regulations about attendance are located in (section C2 in the 'University Regulations' section available here: https://www.mdx.ac.uk/about-us/policies. The main points are:

You should attend and engage with all scheduled classes and prescribed activities. Studies have shown that a good student engagement has a positive impact on performance and therefore is an important factor in helping you to fulfil your academic potential. In addition, for those who are on student visas, Dubai's regulatory authorities require attendance to be monitored.

Your lecturers will maintain attendance records during scheduled teaching sessions using the MDX Dubai App. You are expected to follow any guidelines and instructions provided for proper recording of your attendance for your learning sessions.

The MDX Dubai App (available on iOS and Android) allows students to register their attendance at timetabled classes with a click of a button. All you need to do is:

1. Connect to the internet using the **#mdxDUBAI** Wi-Fi network
2. Open your MDX Dubai App
3. Log-in via your Campus User ID (M0xxxxxxx@studentmdx.ac) and password
4. Ensure that you have given permission to the MDX Dubai App to access your smartphone's location and camera settings
5. Find the correct module and timetabled class via the Calendar
6. When the tutor puts up the class QR code, use the scanner provided within the MDX App to scan the QR code.
7. You will get an automated notification onscreen within the App saying your attendance has been recorded

Middlesex University Dubai supports students, enabling them to achieve their full potential. We provide this support through a number of strategies, all of which provide our students with a supportive learning environment. Online support material on MyMDX is provided as a guide to the content of the class but is no substitute for interaction with your tutor and classmates. In accordance with University Regulation C2.1 for taught programmes of study, it is the responsibility of students to attend scheduled classes and prescribed activities for the modules on which they are registered.

Further information on engaging with your programme will be available at your Induction.

If you experience difficulties beyond your control, which prevents you from engaging with your module, you should notify your tutor and CampusCentral, who may be able to offer support and guidance.

Professional behaviour

The programme of study you are undertaking is underpinned by developing professional behaviour and attitude. You are expected to behave in a professional, supportive manner to your peers and teachers – and the same applies to your anyone the University comes in contact with related to your study. The Student Code of Conduct and Discipline Rules are available here: www.mdx.ac.ae/about-us/university-regulations/student-conduct-and-discipline-rules.

You must come to sessions prepared and ready to contribute where appropriate.

Please remember that when you are on campus, your University Student ID should be carried with you always and you must be able to identify yourself if asked to do so. You must also comply with community health precautions, and other health and safety protocols.

Please conduct your email communication with fellow students, tutors and all relevant staff in a formal and courteous manner.

Unacceptable Behaviours in Face-to-Face Interactions

- Aggressive or abusive behaviour, including shouting, bullying behaviour, physical violence, rudeness, and making threats, inappropriate gestures, or indecent comments

- Persistently interrupting or disrupting learning activities and events
- Engaging in antisocial behaviour that impacts others
- Making derogatory or discriminatory remarks about others
- Using offensive language or engaging in personal verbal attacks
- Discussing sensitive matters in public settings
- Making unsupported claims that the University or individual staff have committed criminal, corrupt, biased or perverse conduct without any evidence
- Demanding that staff set aside or make exceptions to University regulations
- Demanding responses within an unreasonable timescale or insisting on seeing specific staff members when not feasible
- Refusing to accept outcomes or solutions offered or repeatedly seeking further explanations without new information or evidence

Actions to be taken by the University or Staff

- Highlight the unacceptable behaviour(s) and explain why and what effect it is having
- Pause or end the discussion or interaction if the unacceptable behaviour remains persistent
- In serious cases, ask for removal of individuals from University facilities and report the incident to relevant Dubai authorities
- Restrict personal contact and require communication via email or written channels and/or through third parties
- Referral to appropriate disciplinary procedures

For more information, refer to the Middlesex University Dubai Regulations: www.mdx.ac.ae/about-us/university-regulations/

Laptops, Mobile phones and other devices

There are many advantages of using technology in higher education as long as we are able to address the associated challenges. You are encouraged to use your laptops, mobile phones, tablets and other communication devices as part of learning activities and for some sessions, your tutor may even require them. You must ensure that your devices do not disrupt your learning or that of other students or your tutors. **Unless you are using technology together with your tutor as part of a learning activity, all mobile phones and other communication devices must be switched to airplane mode or put on silent settings.** Calls, texts and social media activities should be avoided during the taught session unless agreed with the tutor before the start of the session. Disruptive use of devices during class can lead to students being asked to leave classes or other learning activities and face disciplinary action.

Recording of Lectures

As per section C16 of Middlesex University Regulations unauthorised audio recording, video recording or photography of lectures, or other forms of learning activities by students, is prohibited.

Limited recording by students may be permitted under exceptional circumstances only (for example, for an individual student as a "reasonable adjustment", within the meaning of the UK's Equalities Act), upon explicit permission provided by the tutor and, where appropriate, by everyone else involved. Permission for recording does not imply permission for publication (e.g. on Facebook, YouTube, or other Social Media), or distribution to others. Unauthorised recording of such activities violates the privacy of persons involved, may infringe on copyrights and intellectual property rights of others and can be intrusive and disruptive in a learning environment. In all cases, violation of this regulation will be managed under the student disciplinary procedures.

In addition to a violation of University Regulations, unauthorised recordings may expose students to other unintended consequences, as per UAE law. The United Arab Emirates has several laws (for example, Federal Decree Law No. 34 of 2021 on Combatting Rumours and Cybercrimes) for the protection of privacy and reputation and defamation. Some of the acts that could amount to a criminal offence are:

- possessing on an electronic device a photo taken without the subject's consent
- posting other people's pictures or videos online or on social media (including WhatsApp) without their consent
- tagging a person without their consent
- threatening or insulting people online
- spreading information via social media, that is not verified by the official sources
- gossiping about people or maligning them.

Further guidance is available within the University Regulations and via the Quality Office (qualityoffice@mdx.ac.ae).

Academic Integrity and Misconduct

Academic Integrity is a set of principles and values to show that you work in a professional, honest and ethical way.

Academic misconduct is a breach of the values of academic integrity. It can occur when a student cheats in an assessment or attempts to deliberately mislead an examiner that the work presented is their own when it is not. Academic misconduct is a corrosive force in the university's academic life; it jeopardises the quality of education and devalues the degrees and qualifications of the University. It includes, but is not limited to, plagiarism, self-plagiarism, commissioning or buying work from a third party or copying the work of others, unauthorised use of Generative Artificial Intelligence (Gen AI) tools and breach of examination rules.

Students who attempt to gain an unfair advantage over others through academic misconduct will be penalised by sanctions according to the severity of the offence, which can include exclusion from the University. Taking unfair advantage over other students in assessment is considered a serious offence by the University. Action will be taken against any student who contravenes the regulations through negligence, foolishness or deliberate intent. Academic misconduct takes several forms, in particular:

Plagiarism – using extensive unacknowledged quotations from, or direct copying of, another person's work and presenting it for assessment as if it were your own effort. This includes the use of third party essay writing services.

Collusion – working with other students (without the tutor's permission) and presenting similar or identical work for assessment.

Infringement of Exam Room Rules – Communication with another candidate, taking notes to your table in the exam room and/or referring to notes during the examination.

Self-Plagiarism – including any material which is identical or substantially similar to material that has already been submitted by you for another assessment in the University or elsewhere.

Purchasing or Commissioning - attempting to purchase or purchasing work for an assessment including, for example from the internet, or attempting to commission, or commissioning someone else to complete an assessment. Essay mills are now illegal entities, and use of them is facilitating an illegal activity.

Unauthorised use of Generative Artificial Intelligence (Gen AI) - You cannot use Generative AI tools in your assessments unless specified by the module leader. Where the use of Generative AI is allowed you must provide as a minimum

- Written acknowledgment of the use of generative artificial intelligence, the extent of use, and how generated materials were used.
- Descriptions of how the information was generated (including the prompts used).

Where generated material has not been adapted, citing and referencing using closest source types in the relevant referencing style (e.g. "artificial intelligence" or "non-recoverable sources"). Appropriate use of Artificial Intelligence (AI) is detailed in the assessment requirements grid in section 8.0 Assessments

Links to the relevant University Regulations and additional support resources can be found here:
Section F: Academic Integrity and Misconduct:
https://www.mdx.ac.uk/__data/assets/pdf_file/0030/490539/Academic-Integrity-and-Misconduct.pdf

Referencing & Plagiarism: Suspected of plagiarism?
http://libguides.mdx.ac.uk/c.php?g=322119&p=2155601

Referencing and avoiding plagiarism:
https://mymdx.mdx.ac.uk/study/writing-numeracy/awl-resources/writing

Student Success Essentials (an online self-study course available via MyLearning) includes useful information about how to approach your assessments and complete them with honesty. The course also describes what plagiarism (cheating) is and how to avoid it, so you don't face any disciplinary action. For successfully completing this course, you will be awarded Digital-

Credentials and a certificate that will verify the knowledge you have gained. Digital-Credentials can be shared and promoted via LinkedIn and other digital channels.

Access to course: You will have to log into to MyMDX and then MyLearning to access the course

Full details on academic integrity and misconduct and the support available can be found at Academic Integrity | MyMDX(mdx.ac.uk) as well as on the Campus Guide at www.mdx.ac.ae/life-at-university/campus-guide.

Our Library and the Centre for Academic Success (CAS) runs workshops and clinics to help you learn how to avoid plagiarism and how to reference correctly. To get support and guidance on academic writing techniques that meet our expectations of Academic Integrity, please contact a staff member in CAS (cas@mdx.ac.ae).

Extenuating Circumstances

There may be difficult circumstances in your life that affect your ability to meet an assessment deadline or affect your performance in an assessment. These are known as Extenuating Circumstances or 'ECs'. Extenuating Circumstances are exceptional, seriously adverse and outside of your control.

As a student, it's your responsibility to let the University know about any extenuating circumstances that have affected your work at the time they occur. You can request a deferral of assessment to the next assessment period, or your circumstances can be taken into account by the Programme Assessment Board when making its progression/finalist decision. If you are requesting a deferral of an assessment, you should submit an application by the deadline for completion of the assessment. If you are unable to do this, evidence must be provided which demonstrates the reason for not being able to meet the deadline, in addition to the evidence for the claim.

Extenuating Circumstances can only be requested for summative assessment, not for formative assessment. For example, only for assessment that counts towards your overall module grade.

You **MUST** provide evidence/supporting statement with any request for extenuating circumstances to be considered (except in cases of self-certification*) for a deferral to the next assessment opportunity, or for Extenuating Circumstances to be noted at the Programme Assessment board.

***Self-certification** can only be used when an extenuating circumstance **has affected you for period of 7 days or less**, i.e. a short illness that occurs at the point of assessment submission. You can apply for the following outcomes due to your Extenuating Circumstances. Please note the outcome of any Extenuating Circumstances application may be different from what has been requested:

Deferral

Your circumstances have impacted on your ability to sit your exam or complete and/or submit your assessment. You are requesting an opportunity to sit the exam or submit the work at the next assessment opportunity

ECs noted for the board only
Your circumstances may have affected your performance on other assessments for one or more modules and, although you have sat the exam or submitted the assessments, you wish the Programme Assessment Board to be aware of this in case there is a borderline decision to be made regarding your progression/finalist decision.

Deferral & ECs noted for the Board
Your circumstances have impacted on your ability to sit your exam or complete and/or submit your assessment. You are requesting an opportunity to sit the exam or submit the work at the next assessment opportunity.

There could be progression (i.e. additional year(s) of study), financial (tuition fees and scholarships) and student visa implications as a result of deferring your assessment.

For more information on how to apply for Extenuating Circumstances, please check the Assessment tile in MyMDX or contact CampusCentral via AskMDX (https://askmdx.mdx.ac.ae)

Assessment

Formative assessment

Formative assessments help show you and us that you are learning and understanding the material covered in this course and allow us to monitor your progress towards achieving the learning outcomes for the module. Although formative assessments do not directly contribute to the overall module mark, they do provide an important opportunity to receive feedback on your learning.

In this module, students will receive formative feedback on summative assessments tasks. Students will be expected to work towards a complete software application, mastering related architecture and technologies. The students will be formatively assessed by using a Project-Based Learning (PBL) approach, which will support students in the labs.

Summative assessment

Summative assessment is used to check the level of learning on the course. It is summative because it is based on accumulated learning during the course. The point is to ensure that students have met the learning outcomes for the course and are at the appropriate level. It is the summative assessment that determines the grade that you are awarded for the module.

There is 1 assessment component in this module:

- Coursework 1

- Task: Full Stack Software Application Development (Individual) This application development coursework will allow students to apply knowledge and skills in the latest programming standard to design and implement a full-stack software application architecture.
- The deliverable of this coursework will consist of software code and students are expected to run a short demonstration of the application.

The table below specifies the associated deadlines:

Summative assessment	Weighting	Deadline	Feedback
Coursework 1	100%	Week 11	Within 15 working days since student's demonstration

In order to pass this module, you need to pass the assessment with a minimum grade of 40% or equivalent.

Before you submit your work for final grading, please ensure that you have accurately referenced the work. It is your responsibility to check the spelling and grammar, as all written assessments will assess technical proficiency in the English. This means accurate and effective spelling, punctuation and grammar. Details of how it will be assessed will be provided in the marking criteria for each assessment and the University overall approach can be found within the Grade Criteria Guide in the University Regulations https://www.mdx.ac.uk/about-us/policies (scroll to university regulations)

Reasonable adjustments will be made for those students who have a declared disability/specific learning condition which would affect performance in this area.

Reassessment for this module normally takes place in the following way:

Normally in April with demonstration of improvement of the coursework, and ability to clearly describe and demonstrate it.

Further information is available in MyMDX

If students fail the module (fail grades are 17, 18, 19, 20 with an overall mark between 0% and 39%) they are eligible for a re-sit. Students will be re-examined in the assessed component(s), which they have failed (please note that this can be a different assessment task). Information on what element to re-sit will be made available on the module's MyMDX site approximately two weeks after the module results have been published on MyMDX. Reassessment will take place in June/July/August. Normally you would be entitled to only one reassessment opportunity if you don't pass at first attempt.

Middlesex University is committed to being fair in its approach to assessing student learning following the UK Quality Code for Higher Education (Quality Code) (2024)) and the UK Quality

Code - Advice and Guidance: Assessment (2018) and External Expertise (2018). The Assessment Fairness guidance, policies and procedures put in place by Middlesex University is our commitment to ensure fairness in assessment.

Further information is available at https://mymdx.mdx.ac.uk/study/assessment/assessment-regulations-guide

Assessment 1 Full Stack Software App Development

Full Stack Software App Development (Individual) (100%)	
Module code	*CST3144*
Module title	*Full Stack Software App Development*
Submission date, time	*Week11*
Feedback type & date	*Students will be given feedback and marked by the lab tutor.*
Word count	NA
Assignment type	*The web app must be demonstrated*
Assessed learning outcome (s)	*A brief outline of the module learning outcomes that are being assessed.*
Module weighting %	*100%*
Key reading and learning resources	*Your online reading list can be accessed from the My Study area of UniHub (http:// readinglists.mdx.ac.uk/lists/78D0F586-A45D-60DB-32A7-5D5EC274302B). This highlights recommended reading for this module. The course website has many links to other online resources.*

Assessment marking criteria rubric

A submission could receive zero marks if it fails any of the following requirements:

- [Front-End]

o the App must be implemented by using Vue.js framework. Other frameworks or related technologies (e.g., React, AngularJS, Svelte, Apache, XAMPP) are NOT allowed.

o Any JavaScript library is NOT allowed if it duplicates or replaces features provided by Vue.js framework. Check with the tutor if not sure.

• [Back-End and Connection details for the Front-End]

o the Back-End server must use “Node.js”; others such as Apache or Xampp are not allowed.

o in relation to hosting the Back-End server, it is not allowed to use AWS S3, nor AWS EC2, nor other cloud-based hosting solutions (e.g., Heroku). The only allowed ones are AWS or render.com, with the technologies covered in the related Lecture.

o the REST API must be developed with “Express.js”.

o the Front-End data access must be achieved with “promise” using “fetch” function; “XMLHttpRequest” or library such as axios:js are not allowed.

o the data must be stored in “MongoDB Atlas” and retrieved via your Express.js App; local MongoDB or any other databases are not allowed.

o connection to MongoDB (in your Express.js App) must use the native Node.js driver only; libraries like Mongoose are not allowed.

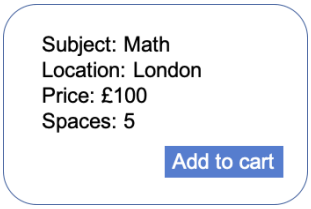


Figure 1. A Lesson element of the App

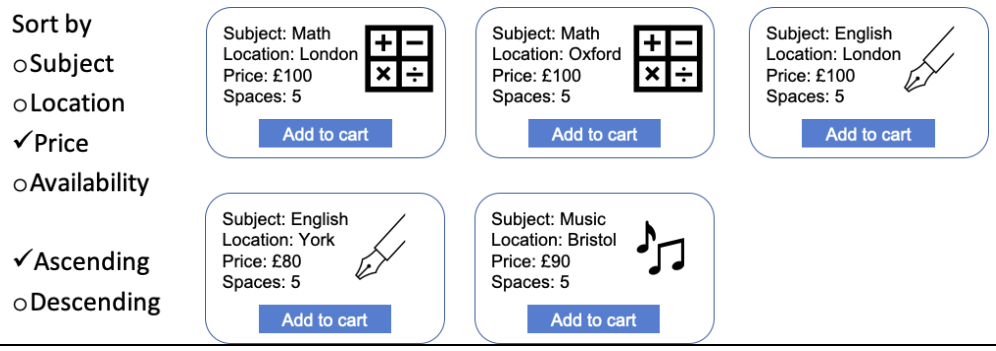


Figure 2. Sort functionality and List of Lessons

- General Requirements (20%):

A. [GitHub Repositories] the code of the Vue.js App must be hosted in a GitHub repository, with at least 10 commits, and the code of the Express.js App must be hosted in another GitHub repository, with at least 10 commits (6% if 2 separated repositories are used, 3% if only 1 repository is used).

B. [GitHub Pages] the Vue.js App must be hosted and demonstrated on/via GitHub Pages and connected (via Fetch) to your AWS (or render.com) Express.js App (7% if requirement is fully covered, 3% if app is running locally).

C. [AWS (or render.com)] the Node/Express server must be hosted on Amazon AWS (https://aws.amazon.com/) or on Render

(https://render.com) (7% if requirement is fully covered, 3% if the server is run locally, 0% if the server is hosted in another cloud-based solution).

- [Front-End] “Display List of Lessons” functionality (7%):

A. there should be at least 10 lessons, and each lesson should have 5 spaces (or availability) (1%).

B. each lesson should have at least (5%): Subject (1%), Location (1%), Price (1%), Spaces (or availability: this indicates how many spaces are left) (1%), a Font Awesome icon (or an Image) (1%).

C. v-for must be used for the display of the lesson list (1%).

- [Front-End] Sort functionality (10%):

A. the user can choose to sort the lessons by one of the following attributes (8%): subject (2%), location (2%), price (2%), or spaces (i.e. availability) (2%).

B. there must be an option to sort in ascending or descending order (order dependent on the sorting attribute selected), which should work for each of the attributes (2%).

- [Front-End] “Add to Cart” functionality (5%):

A. each lesson must have an “Add to Cart” button (1%).

B. the button is always visible, and only enabled when space is larger than 0 (1%).

C. clicking the button once (related interactions implemented by using v- on) will add one space to the shopping cart, reducing the remaining space by one (2%).

D. once there is no more space, i.e. space = 0, the “Add to cart” button should be disabled but still visible, i.e. clicking it will not further reduce “space” nor add lessons to the cart (1%).

- [Front-End] “Shopping Cart” functionality (5%):

A. the shopping cart button should only be enabled after at least one lesson is added to cart (1%).

B. clicking the shopping cart button should show the cart page, and clicking the button again goes back to the lesson page (1%).

C. the shopping cart, in the cart page, should show all the lessons added (1%).

D. in the shopping cart page, the user should be able to remove lessons from the shopping cart; the removed lesson is added back to the lesson list (in the lesson page) (2%).

- [Front-End] Checkout functionality (6%):

A. the checkout is part of the shopping cart page (not part of the lessons page) (1%).

B. the “checkout” button is always visible and only enabled (clickable) after valid “Name” and “Phone” are provided (2%).

C. the “Name” must be letters only and the “Phone” must be numbers only; the check must be done using JavaScript (suggestion: regular expressions) (2%).

D. clicking the “checkout” button should display a message confirming the order has been submitted (1%).

- [Front-End (and Back-End)] Search Functionality (10%):

- [Intro] This is the challenge component of this coursework, and it is not expected that everyone can complete it. The solution is not fully covered in the lecture or lab, so you need to research it.

- [Feature Description] The goal is to add a full-text search feature,
- The user can search for a lesson without specifying which attribute to search on.
- For example, searching for “a” should return all the lessons with “a” in its “title” or “location” or “price” or “availability”.

- Solutions provided are marked as follows.

[Base Marks (provided depending on which following approach is chosen)]

A. [Approach 1] (2%) “Implemented only in the Front-End”, you can implement this feature using Vue.js and/or an existing JavaScript library (could not be a Vue.js library).

OR

• [Approach 2] (7%) “Implemented functionally in the Back-End and graphically in the Front-End”, the difference with “Approach 1” above is

that in this case the search needs to be performed in the Back-End (Express + MongoDB), not directly and exclusively in the Front-End, but the Front-End will receive (e.g., via REST API) results from the Back-End and manage the graphical aspects for showing the search results. You cannot use any existing library to implement this functionality. Otherwise, you will not receive any mark for this part. The points for this approach are divided as follows.

a. “Fetch and Visual Aspects” (3%), in the front end, a “fetch” request should be created to send the search information to the Back-End, and related filtered results obtained should be shown in the Front-End.

b. “Express API” (4%), an Express.js route should be created to handle the search request, and to return the search results from the MongoDB. The student should implement this as a GET route (“/search”), and should be able to test it also without using the Front-End.

[Further Mark]

A. “search as you type” (3%), there is also this mark if the search supports “search as you type”, i.e. the search starts when the user types the first letter (displaying all the lessons containing that letter), and the result list is dynamically filtered as more search letters are entered (similar to Google Search).

• [Back-End] MongoDB should have (8%):

A. a collection for lesson information (minimal fields: topic, price, location, and space) (4%).

B. a collection for order information (minimal fields: name,

phone number, lesson IDs, and number of space) (4%). Suggestion: the element lessonIDs can contain 1 or more lesson IDs, depending on how many different kinds of lessons you have in your order. Other solutions could be accepted: in fact, how you design this is not the primary aspect of this module, therefore it is up to you to find a reasonable solution that works satisfactorily.

• [Back-End] Middleware Functions implemented in the Express.js Server should include (8%):

A. a “logger” middleware that outputs all requests to the server console; the student needs to be able to inspect and explain the log (4%).

B. a static file middleware that returns lesson images, or an error message if the image file does not exist; the student needs to be able to test and demonstrate these aspects (4%).

• [Back-End] REST API implemented in the Express.js Server should include and be tested as indicated in the following (the student must be able to test all the routes properly and explain them) (12%):

A. one GET route /lessons, which returns all the lessons as a Json, demonstrated with a Postman request prepared in advance (3%). Example:

[

{‘ topic’: ‘math’, ‘location’: ‘Hendon’, ‘price’: 100, ‘space’: 5},

{‘ topic’: ‘math’, ‘location’: ‘Colindale’, ‘price’: 80, ‘space’: 2},

{‘ topic’: ‘math’, ‘location’: ‘Brent Cross’, ‘price’: 90, ‘space’: 6},

{‘ topic’: ‘math’, ‘location’: ‘Golders Green’, ‘price’: 95, ‘space’: 7},

]

B. one POST route, which saves a new order to the “order” collection, demonstrated with a Postman request prepared in advance (4%).

C. one PUT route, which can update any attribute in a lesson of the “lesson” collection (suggestion/requirement: this will be used, after an order is submitted, for updating the available spaces: updating to any number the available spaces, and not just increasing or decreasing), demonstrated with a Postman request prepared in advance (5% if the requirement is fully covered, 2% if the solution is just increase or decrease).

• [Front-End] Fetch Functions implemented in the Front-End should include (9%):

A. one fetch that retrieves all the lessons with GET (3%).

B. one fetch that saves a new order with POST after it is submitted (3%).

C. one fetch that updates the available lesson space with PUT after an order is submitted (3%).

The following table details the support you will be receiving for this assignment and the feedback opportunities you will have.

Support and draft feedback sessions

Additional support

Please use this space to specify any additional support students can utilise. This could refer to:

- Lecturer Consultation: can be requested by prior appointment by sending an email to x.yyyy@mdx.ac.ae or provide a booking link
- MyMDX: the folder on MyMDX relevant to this assessment task includes the TurnItIn online submission link, sample assignments and template format.
- CiteThemRight: offers online help for referencing at: http://www.citethemrightonline.com.ezproxy.mdx.ac.uk
- Centre for Academic Success (CAS) Consultation: you have the option to book individual consultations or group appointments with members of the CAS Team. These sessions have been known to help students reach their academic goals through one-on-one consultations with our highly professional and helpful CAS team members. For more information on the services offered by the CAS Team, or to book an individual consultation, you may send an email to CAS@mdx.ac.ae.
- CAS specific sessions (*in case you have arranged CAS to be involved in your module*)
- Library specific sessions (*in case you have arranged the Library to be involved in your module*)
- Instructional Resources: The Library offers many instructional resources via their website: https://www.mdx.ac.ae/library where students can learn how to use the Library and its resources by watching videos, using interactive tools, and exploring Library Guides – which provides students with the information necessary to understand how to access books, eBooks, Journals, articles, databases, conference proceedings, research results, etc.
- Liaison Librarians – Students are encouraged to contact your Liaison Librarian who can provide expert individual or group assistance finding materials for specific assignments, give research support and direction, and provide general Library guidance: https://www.mdx.ac.ae/library/liaison-librarians
- An Introduction to the Research Process: This online course is specifically designed to introduce Middlesex University Dubai students to the five steps of the Research Process. The course can assist with getting started on research for an essay, term paper, presentation, or dissertation by providing guidance on locating Library and web resources including books, articles and eBooks. https://www.mdx.ac.ae/library/an-introduction-to-the-research-process
- Library Focus: Students are encouraged to register for Library Focus workshops. Library Focus workshops develop research skills and help students best utilize Library resources
- Further teaching and learning support materials can be found on the Dubai Teaching and Learning Support MyMDX page that includes short videos, tutorials, etc produced by the CAS and Library teams. https://mdx.mrooms.net/course/view.php?id=24990

Late Submission

Students must submit each component of assessment by the deadline set by the Module Leader. Non-submission of work by the deadline will result in failure in the component concerned (grade

20), unless students make an application and subsequently permission has been granted under the Extenuating Circumstances Policy (https://www.mdx.ac.uk/media/middlesex-university/about-us-pdfs/academic-quality/final_-_policy_and_procedures_for_extenuating_circumstance_24-25.pdf) for an approved deferral of assessment to the next available opportunity.

For individual written coursework only, late submission of up to 24 hours from the deadline is permissible, however, the grade for the component is reduced by 10% or equivalent (or less where this would reduce a pass grade below 40%). Students should take into consideration the impact this will have on their deadline schedule and their final grades before selecting this option.

Assessment support for students of determination

Students who have declared special needs or learning differences or an ongoing medical condition may contact the Inclusion Counsellor in the Centre for Academic Success. This will set out the reasonable additional support that will be put in place by the University to assist that student's learning and assessment. It is the student's responsibility to make arrangements and follow the procedures set by the Centre of Academic Success in order for reasonable adjustments to be put in place. This may include the option to take up to 5 calendar days late submission on individual written coursework without having a grade reduction. Check the Middlesex University's Policy and Procedures for Extenuating Circumstances Claims 2024-2025:https://www.mdx.ac.uk/media/middlesex-university/about-us-pdfs/academic-quality/final_-_policy_and_procedures_for_extenuating_circumstance_24-25.pdf

Feedback on your assignments

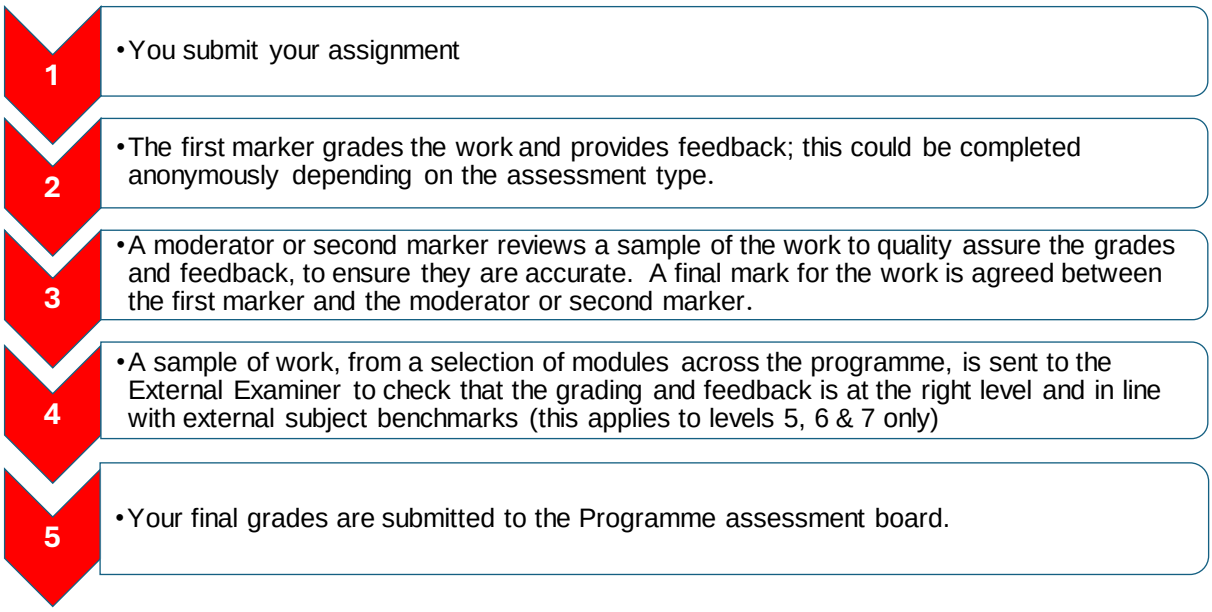
You will be provided with feedback on all coursework that is helpful and informative, consistent with aiding the learning and development process. The nature of the feedback shall be determined at programme level but may take a variety of forms including: written comments; individual and group tutorial feedback; peer feedback; or other forms of effective and efficient feedback.

If you have been asked to and have submitted a formative or draft assessment, you will receive feedback but no grade. The comments should inform you about how well you have done or tell you about the areas for improvement. All assignments should be submitted online unless specified in assessment briefs. Feedback on summative assessments will normally be provided within 15 working days of the published submission date.

How is your assignment mark agreed?

External Examiners (external academic experts) review what we deliver at a programme level. The University reviews a sample of your work to quality assure the grades and feedback you received from the person who marked your work. Our External Examiners will sample a selection of modules from a programme, with more focus of outcomes between modules within a programme.

The following diagram provides an overview of the marking process for your module assessment. Further information on the role of external examiners can be found at. https://www.mdx.ac.uk/about-us/policies/academic-quality/handbook (section 4).



Results Confirmation

First Semester | *Provisional Grades:* At the end of your first semester, you can see your module grades in the 'Grades and Progress' tile within MyMDX. These grades are provisional and not yet confirmed.

Second Semester | *Final Grades and Progression:* After your second semester, the Programme Assessment Board will confirm your grades. Then, your final module results, progression status, or finalist classification will be posted in the 'Grades and Progress' tile within MyMDX.

For help or more information:

- **University Guide**: Find detailed information in the Grades and Progress tile within MyMDX.
- **Support Team**: Ask your Programme team or reach out to CampusCentral for advice.
- **Regulations**: Check the University regulations for more details.

1. Learning Planner

SEMESTER 1

Week	Workshops and Labs	Assessment
1	Programming Front-End Solutions	
2	Advanced Interactivity for Front-End Solutions	
3	Version Control of Software Systems and Refactoring of Software Systems	
4	Advanced Design and Development of Software Applications	
5	Full Stack Development and Dependency Management	
6	Advanced Back-End Technologies and Administration	
7	Programming Platform-Independent Software Applications	
8	Communications between Front-End and Back-End Technologies	
9	Deployment of Software Applications	
10	App Hosting and Data Storage; Review and Coursework Time	Individual Work Lab Demo
11	Review and Coursework Time	Individual Work Lab Demo
12	Review and Coursework Time	Individual Work Lab Demo

1. University 20-point Scale

20-point scale	General scale	General scale (full ranges)	Percentage used for aggregation purposes only (for areas marking directly to the 20 point scale on modules with multiple assessment components)
1	80% - 100%	79.50% - 100%	90%
2	76% - 79%	75.50% - 79.49%	77.5%
3	73% - 75%	72.50% - 75.49%	74%
4	70% - 72%	69.50% - 72.49%	71%
5	67% - 69%	66.50% - 69.49%	68%
6	65% - 66%	64.50% - 66.49%	65.5%
7	62% - 64%	61.50% - 64.49%	63%
8	60% - 61%	59.50% - 61.49%	60.5%
9	57% - 59%	56.50% - 59.49%	58%
10	55% - 56%	54.50% - 56.49%	55.5%
11	52% - 54%	51.50% - 54.49%	53%
12	50% - 51%	49.50% - 51.49%	50.5%
13	47% - 49%	46.50% - 49.49%	48%
14	45% - 46%	44.50% - 46.49%	45.5%
15	42% - 44%	41.50% - 44.49%	43%
16	40% - 41%	39.50% - 41.49%	40.5%
17	35% - 39%	34.50% - 39.49%	37%
18	30% - 34%	29.50% - 34.49%	32%
19	0% - 29%	0.01% - 29.49%	15%
20	Non-participation	0%	0% (non-submission of a component)