



**BEng (Hons) Mechatronics and Robotics
with Foundation Year (FY)**

**How the new Learning Framework will
affect this programme of study**

Faculty of Science and Technology

Introduction

Middlesex University takes student feedback very seriously. We're recognised as one of the [**top 10 universities in the country**](#) for responding to student feedback.

Over the last two years, we've been working in partnership with our Students' Union (MDXSU) to gather your feedback about the structure of programmes and teaching across Middlesex. We've been asking for students' views through surveys, collecting feedback shared with student representatives (Student Voice Leaders), running pop-up stalls on campus and organising focus groups.

We're using this feedback to make changes to our Learning Framework – our structure for how our modules, programmes and academic year are designed to best support student learning and success.

This document summarises all the changes to the structure and delivery of BEng Mechatronics and Robotics with FY. These changes will take place from the start of the 2024/25 academic year. Page 3 of this document summarises the new structure of your programme, with page 4 showing the current structure to help you compare. Pages 5 – 7 summarise changes to the delivery of your programme.

If you're expecting to Graduate this summer, you will not be affected by these changes.

Where to go if you have questions or concerns

For applicants, please direct any questions about changes to your programme to the Applicant Engagement Team. Please email undergraduate@mdx.ac.uk phone: 0208 411 5555 or use our live chat function on the University website www.mdx.ac.uk

For current students, please check out our [frequently asked questions](#) (on the bottom of our page on the Learning Framework). These will hopefully cover any questions or perceived issues that you may have. If you do not find an answer to your question, please get in touch with [UniHelp](#). Our UniHelp staff will either be able to resolve your query directly or will liaise with your Programme Leader to gather more details.

Changes to the structure of your programme

This section provides a visual summary of how BEng Mechatronics and Robotics with FY is currently structured and how it will be structured from 2024/25 in the new academic year. Within the new programme structure, you can see all the modules taught across your programme and an indication of likely optional modules. Please note not all optional modules may be available every year as they are subject to receiving sufficient interest from students.

New programme structure

Programme structure for full-time students. All modules named within programme diagrams are mandatory, with slots for potential optional modules also included. The number of credits for each module are given within brackets.

For students that do not study full time e.g. part time students, please contact your Programme Leader for how this change will affect your study.

FY	Semester 1	Semester 2
	Foundation Project (30)	Computing & Digital Technology (30)
	Foundation Mathematics (30)	SMART (Students Mastering Academic writing, Research and Technology) (30)

Year 1	Semester 1	Semester 2
	Practical Applications of Mathematics for Engineers [30]	Physical Computing and Programming [30]
	Electronic Engineering Principles and Applications [30]	Engineering Projects [30]

Year 2	Semester 1	Semester 2
	Mechatronics [30]	Design & Engineering in Context [30]
	Sensors, Actuators and Control [30]	Robotics [30]

Year 3	TKSW Placement (compulsory for TKS only) [120]
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Year 3/4	Semester 1	
	Artificial Intelligence (AI) in Robotics [30]	
	Mechatronic Systems and Industry 4.0 [30]	
	Semester 2	
Major Project and Professional Practice [60]		

Current (old) programme structure

Programme structure for full-time students. All modules named within programme diagrams are mandatory, with slots for potential optional modules also included. The number of credits for each module are given within brackets.

Please note that this is the current programme structure – this will not continue into the 2024/25 academic year

FY	SMART (Students Mastering Academic writing, Research and Technology) (30)
	Foundation Mathematics (30)
	Computing & Digital Technology (30)
	Foundation Project (30)

Year 1	Design Engineering Projects - 1 [30]
	Fundamentals of Electronics [30]
	Programming Paradigms for Physical Computing [30]
	Engineering Mathematics and its Applications [30]

Year 2	Engineering in Context [30]
	Control Systems [30]
	Robotic Systems [30]
	Mechatronic Systems [30]

Year 3	Thick Sandwich Placement (compulsory for TKSW only) [120]
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Year 3/4	Artificial Intelligence in Robotics [30]
	Mechatronics and Industrial Internet of Things (IoT) [30]
	Major Project [60]

Changes to the delivery of your programme

Utilising all the feedback from students, we have developed the following seven principles that will make up our new learning framework. This is how your programme will be delivered ensuring that we are best able to support your learning and success.

Principle 1: Our academic year

- 12-week semesters
- 2 semesters of study for full time students

We will adjust the structure of our academic year into three 12-week semesters. Full time students will study modules in the first two semesters, with a third semester to provide more flexibility for students who need to re-sit assessments or catch up in other ways.

This new structure also sets us up for the future, by making it easier to provide opportunities for students to join Middlesex at different points in the year.

Principle 2: Programme Structure

- Shared first-year experience across relevant subject clusters

Following testing and consultation with students, we believe that introducing a common first year will have the following advantages:

1. It will make it easier for new students to gain a broad knowledge and understanding of your discipline, through access to the practice, scholarship and research drawn from a range of subjects. This will help inform your choices as you continue through your studies
2. Having a full and broad curriculum before specialising will enable our students to stand out in the marketplace and help inform their future career choices. We want our students to recognise and benefit from the full range of opportunities and options available to them
3. The transition to university can be a challenge for many students. It's especially important in this time that new students are able to make friends and build their networks. A shared first year will better allow us to build strong communities within subject areas, which can then continue throughout the rest of your time at Middlesex.

Principle 3: Module Structure

- Four 30 credit modules
- Two modules each semester for full-time undergraduate students
- No pre-requisite modules

We want to ensure that the number of modules our students are studying at any one time is feasible and manageable to maximise their chance of success. Many areas of the University already structure their programmes with 30 credit modules, and these have had positive feedback from students and staff. These larger modules allow for more in-depth learning, helps to manage students' workload, and reduces clustering of assessments.

Currently, we have modules of varied sizes across the University. This can also make it more challenging for students who want to change programme or need to re-take a module, as changing modules is not as flexible.

Principle 4: Student groups

Student groups will be created to connect students with peers who are in each module. The exact size of these groups is to be decided by each Programme area to ensure that they best support subject-specific needs.

The research is clear that when students build a positive sense of belonging at university, this contributes to their success as a student. It is clear from student feedback that what matters most is connection with other students on your course. To best facilitate this, teaching on each module will be organised into a set of student groups.

Having access to a strong network of peers will help in several ways:

- Building a sense of belonging amongst our #TeamMDX community
- Promotes peer accountability and support
- Helps to supports students' health and wellbeing through an improved support network
- Provides safe space to stretch and challenge students' learning.

Principle 5: Integrated curriculum design

At the moment, we receive a lot of positive feedback from students on modules that were **practical and clearly embedding competencies needed by employers**. Our framework will ensure that all modules reflect this Middlesex approach and allow you to **better differentiate yourself in the graduate marketplace**. A set of graduate competencies will be embedded into the content of modules on your programme, to ensure that you can gain these skills as part of your studies. We also expect modules to include embedded approaches to developing key IT skills for your subject area.

Principle 6: On Campus and Online Teaching

- Three days for campus teaching
- Engaging and interactive on-campus activities

- Key concept, bite-size videos recorded and shared online in advance

As part of the new learning framework, teaching on each programme will be structured so that students are required to be on campus for at most three days a week. This does not mean that students will have less face-to-face teaching time but relates to how we will structure students' timetables.

This is something that has been made clear within student feedback. We know that our students often have other responsibilities outside of their studies, which make it harder to attend campus every day. We will still have facilities and activities running throughout the week, but students will only be required to attend for the three days where they have scheduled teaching.

We also expect that when students know their timetable in advance, it better allows them to plan things like part-time work and to budget for the costs of travelling, childcare and other commitments.

Principle 7: Assessment

- Programme-based and authentic assessment
- Assessments limited to two per 30 credit modules
- Formative feedback throughout module
- Re-takes for mid-module assessment ahead of the end of module, where possible
- Phasing out of 20-point scale (during 2024/2025), to be replaced by percentage scale

We have received so much helpful feedback from students on what helps them to submit their best work in assessments and what makes it more challenging. We are excited to bring in these above changes to the new learning framework. We expect that the new structure of programmes will mean that students have fewer assessments throughout the year, which allows students to focus better on each assessment point.

Re-takes and re-submission of assessments can be extra challenging if it takes place long after a module has happened. Where possible, we will introduce a new approach where these re-assessments take place before the end of the relevant module.

We also will be phasing out our current 20-point scale for assessment results, to be replaced with a much more intuitive percentage scale.