



Cardiff
Metropolitan
University

Prifysgol
Metropolitan
Caerdydd



Undergraduate

Handbook

BEng/MEng Robotics Engineering

Cardiff School of Technologies



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Introduction

Welcome to Cardiff Metropolitan University

A very big welcome to Cardiff Metropolitan University (Cardiff Met) and the Cardiff School of Technologies (CST). We are so pleased that you have chosen to spend the next few years studying with us and we are confident that you will have an enjoyable and fulfilling experience.



The whole teaching team are on hand to help you get the most out of your time at Cardiff Met. Please do not hesitate to contact us if you have any questions or concerns in the coming weeks, as you settle into your new life at the University.

As a new student at Cardiff Met you will be assigned a Personal Tutor who will provide support throughout your time here. In addition, your Program Director (or “PD”) will not only be an additional point of contact for support but will also be responsible for the academic and administrative coordination of the course. If you have any concerns or questions before you arrive, please contact me directly.

This welcome pack has been written to help you get off the starting blocks and to let you know a little bit about your first week at the University. In addition, we have provided some resources for those students who are looking to undertake some preparatory study. We hope that this will give you an insight into the course, as well as inspire and motivate your enthusiasm to succeed in the field of Robotics Engineering.

During the welcome week, you will have the opportunity to meet your lecturers, fellow students and learn more about Cardiff Met and the city. We hope you find the week fulfilling and enjoyable. We look forward to meeting you soon!

Dr Jasim Uddin *BCSE, MEng, PhD, MIET, SMIEEE, FHEA*
Senior Lecturer in Electronics
Programme Director – Robotics Engineering
E: Juddin@cardiffmet.ac.uk



Essential Information

Programme Details

The programme aims to develop ethical and professional robotics engineers who possess all the necessary knowledge and competencies, of research, analysis, design and evaluation, to cross the conventional boundaries between the mechatronic systems, computer hardware and software, control, engineering design and autonomous technology.



Graduates will be able to integrate and synthesise their knowledge of the science of robotics, engineering, mathematics and design, to solve a range of robotics systems problems with ethical conduct.

Overall, the course will provide a strong foundation for leadership and a wider appreciation of the economic, legal, social, ethical and environmental context of robotics engineering.

Part-Time Students

Whilst full-time students should participate in everything, we recognise you may not be able to do so because of other commitments, and we understand this.

Talk with your Personal Tutor about which activities will be most valuable for you. You will be welcome to join in all events during the week as and when you can. Do, though, ensure that you have registered and completed the required paperwork before attending any events.

International Students

We understand that for international students coming to the UK, adjusting to a new culture, finding somewhere suitable to live, and following new processes and procedures



can be quite overwhelming. The Global Student Advisory Service is available to offer friendly advice and support to all international students in relation to welfare concerns, academic skills, and immigration matters. For more information about the services available, access the links below:

Global Student Advisory Support

[Global Student Advisory Service International Welfare Advice](#)

[Global Student Advisory Service International Academic Advice](#)

[Global Student Advisory Service Immigration Advice](#)

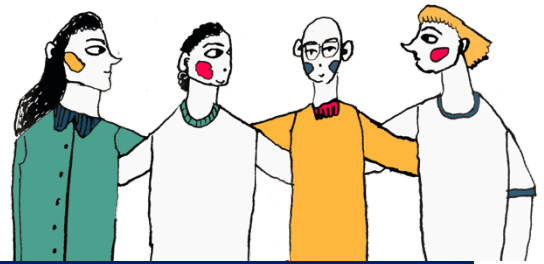
Global Student Advisory Contacts

Welfare advice – intstudentadvice@cardiffmet.ac.uk

It is also important that you attend the activities planned for your course during Welcome Week so you get to meet your Programme Director, Tutors, and the rest of your cohort. This will help you to settle into your new environment and make new friends.



Meet the Team



Dr. Jasim Uddin,
Programme Director - Robotics Engineering
E: Juddin@cardiffmet.ac.uk

Modules to be studied in Academic Year 23/24.

Confirmed Module Leader details will be provided towards the start of term. For more information on our CST teaching staff and their specialised areas please visit [the website](#).

| | |
|---------|--|
| SEN4000 | Principles of Programming (Term 1) |
| ENG4002 | Engineering Mathematics 1 (Term 1) |
| IST4000 | Explore (Year-Long) |
| CMP4011 | Architectures and Operating Systems (Term 2) |
| ENG4001 | Analog and Digital Electronics 1 (Term 2) |
| ENG4003 | Introduction to Mechatronics (Term 2) |



Welcome Week

What to expect

During the week you will complete a project, which you will undertake with a group of other new students from your programme, supported by staff and current students who are on your programme. There will also be lots of help from the other university services, showing some great tools and techniques you can use to make your project a success.



At the end of the week we will also give you some feedback on the strengths of your group's approach, sharing and celebrating what we have discovered together.

There will be an introduction to your new School and Programme and lots of fun activities to help you meet new people.

You will need to complete a bit of administration and check-in with your programme, so we know who is doing what, and when. You will also need to complete any outstanding enrolment matters, pick up Students' Union cards, and touch base with any specialised support services that you need.

Here's what Cardiff Met students enjoyed about Welcome Week

"Helped me settle in and took the pressure off travelling to a new place"

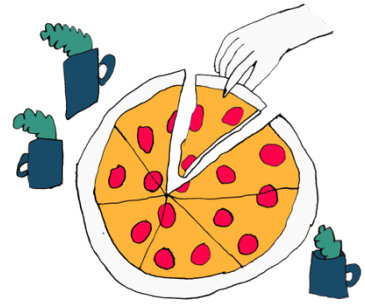
"The group projects to find out about our peers was a nice way of getting to know everyone"

"Helpful to chat informally to the Programme Director and chat about random things to help settle in".



Programme Activities and Projects

The set of activities listed below are prepared to inspire your enthusiasm, critical thinking, and problem-solving skills which are pivotal to succeed in the field of Robotics Engineering. You may engage with these activities at your own pace, and you may refer to any additional resources if required.



1. Computational Thinking

Computational thinking is an interrelated set of skills and practices for solving complex problems. It is an essential 21st century skill that trains logical and structured thinking. This is needed to understand and be creative in a world that is automated more and more. A free platform named “Robomind” can help you improve your computational thinking skills while enjoying playing with virtual robots.

- Go the platform website: <https://www.robomindacademy.com/>
- Create your free account.
- Download the free software for programming and simulation using this link: <https://www.robomind.net/en/download.html>
- Complete the free courses available in this link: <https://www.robomindacademy.com/navigator/courses>

2. Computer programming

Computer programming is an essential element in this course, and you will be learning a number of programming languages, such as C/C++, Python, Java and MATLAB etc. These will be used throughout the course for high level application development, embedded system programming, and scientific programming. You may find the following resources useful for learning some of these programming languages.

- [Codecademy: Python 2](#)
- [Codecademy: C++](#)
- [Codecademy: Basic Java](#)



3. Computer-Aided Design (CAD)

CAD is the use of computer-based software to aid in design processes. Using 3D CAD Software, a 3D model of a robot can be easily created with all its geometrical parameters. These 3D models can be easily customized based on the requirements or changes provided by the customer. CAD Design enables designers to see the 3D robotic model from various angles and check if they align with the geometric parameters provided. Fusion 360 is an example of a CAD software. You can learn the basics of Fusion 360 through a skill-builder course. To do so, please follow the following steps:

- Create your free account via: <https://www.autodesk.co.uk/products/fusion-360/personal>
- Sign in with your fusion 360 account.
- Go to Skill-builder course link: <https://www.autodesk.com/certification/learn/course/learn-fusion-360-in-90-minutes>
- Complete the course modules and do the final test.

Social Activities

Further information on social activities will be available in your induction week timetable, which will be provided closer to the start of term.

Freshers' Fayre

The Freshers' Fayre, organised by the [Students' Union](#), is your first chance to meet all our [SU Societies](#), [SU Sports Teams](#) and, of course, a chance to grab all manner of freebies from our commercial partners! The fayre is an all-day event taking place on Wednesday within NIAC on the Cyncoed campus! It is one of the highlights of the Freshers calendar and one of the only times during your university journey that every student from all Cardiff Met Schools will be in the same place!

Head over to the [Cardiff Met Students' Union website](#) for up-to-date information on events, societies, support and more.



Welcome Week Activities

During Welcome Week you will have the opportunity to:

- Attend a welcome meeting with your Programme Director and meet the team, where they will provide an introduction and outline expectations.
- Meet other students on your programme of study.
- Meet your Personal Tutor. *
- Take part in a welcome week project with other students on your programme of study and present the findings from your project to staff and peers.
- Familiarise yourself with the campus.
- Explore what services are available to support you on your learner journey.
- Attend Fresher's Fayre on Wednesday.
- Familiarise yourself with the digital tools you will be expected to use during your studies.
- Take part in a 'wrap up' session, reflect on the week and make sure you know what your timetable is looking like for the first week of teaching.
- Attend the Cardiff Met celebration event on Friday afternoon.

Please note you will find a detailed timetable for your programme of study on the Welcome Week site.

*If you would like to request a Welsh speaking Personal Tutor, please contact the School as soon as possible and we will do our best to accommodate your request. Contact email: CSTAdministration@cardiffmet.ac.uk



Personal Welcome Week Checklist



During Welcome Week you need to make **sure** that you have:

- Completed the enrolment process.
- Collected your student ID card.
- Attended programme activity sessions.
- Attended some social events on campus/online.
- Attended Fresher's Fayre
- Met with your Personal Tutor*
- Familiarised yourself with the library and any support services you might need
e.g. Dyslexia or Disability help

*If you would like to request a Welsh speaking Personal Tutor, please contact the School as soon as possible and we will do our best to accommodate your request. Contact email: CSTAdministration@cardiffmet.ac.uk



Useful Information

New Students Information

The [Course Joining Information website](#) has lots of useful information to help with your planning. Simply select your level of entry on the website to find out more and access your important joining information.



Student Services

[Student Services](#) provide support and guidance, including mental health, disability support, careers advice, information on part-time jobs and money management.

SU Welcome Guide

An interactive guide to help you navigate your journey into and throughout your university life. Take the tour and enjoy each section designed to help you get to know Cardiff Met.

[What you need to know before you go](#)

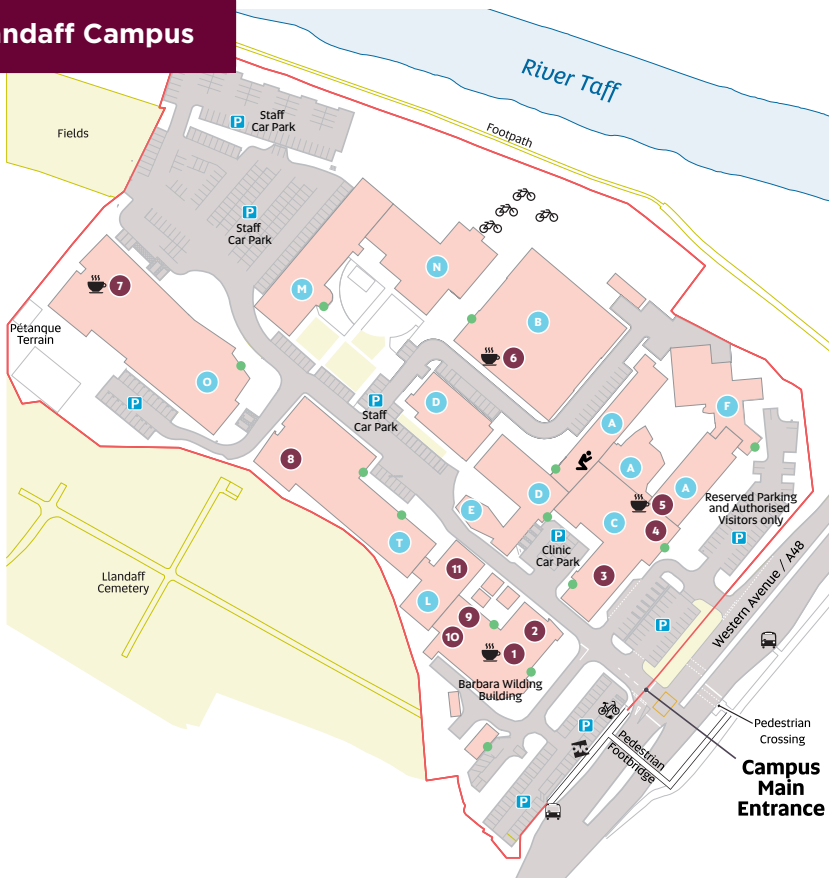


Academic Calendar 2023/24

[Academic Calendar 2023/2024](#)



Llandaff Campus



Key

- | | | |
|------------------------------|----------------------------------|---------------------------|
| 1 The Hub | 8 IT Help Desk (First Floor) | P Parking |
| 2 Cym (First Floor) | 9 The Global Lounge | 🚲 Electric Bikes |
| 3 Podiatry Clinic | 10 Students' Union (First Floor) | 🚲 OVO Bikes |
| 4 Main Reception & i-Zone | 11 Learning Centre | 🚲 Bike Rack |
| 5 The Gallery (First Floor) | ● Building letter | 🚰 Bus Stop |
| 6 The Box Café (First Floor) | ● Building Main Entrance | ☕ Café |
| 7 The Atrium | | 🕌 Multi-faith prayer room |

All our rooms use the same naming formula – *Building Floor . Room Number*. So if you're looking for 01.18, go to building O, climb to the first floor, and find room number 18. Or for B0.10 go to building B, stay on the ground floor and look for room 10. In the naming formula, 'LL' refers to Llandaff.



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Wythnos groeso
Welcome week

2023