Cardiff Metropolitan University | Prifysgol Metropolitan Caerdydd

MetCaerdydd
CardiffMet
2023
Wythnos groeso
Welcome week

Undergraduate

Handbook

BSc (Hons) Software Engineering

Cardiff School of Technologies

Contents

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 coming years studying with us and we are confident that you will have an enjoyable and fulfilling experience. You have made a particularly excellent choice in undertaking to study Software Engineering with us in the Cardiff School of Technologies. Experience has shown us that those students who engage fully in the first year often go on to have especially fulfilling experiences on their courses and are some of our most successful graduates.

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 Programme 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.

This welcome pack has been written to help you get started and to let you know a little bit about your first week at the University. We have also put together a summer project with few activities which you can engage and attempt at your own pace. 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 Software Engineering.

During the induction 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. A

provisional timetable for the week is attached but is subject to change before the start of term, so I will be sending an update closer to the time.

We look forward to meeting you soon!

Yours Sincerely,

Dr Hasan Kahtan, PhD, MSc, BSc, SMIEEE.

Senior Lecturer in Software Engineering | Uwch Ddarlithydd yn Peirianneg Meddalwedd

Programme Director BSc Software Engineering | Cyfarwyddwr Rhaglen Gradd Meddalwedd Peirianneg

Cardiff School of Technologies | Ysgol Dechnolegau Caerdydd

Cardiff Metropolitan University | Prifysgol Metropolitan Caerdydd

Llandaff Campus | Campws Llandaf

Western Avenue, Cardiff CF5 2YB | Rhodfa'r Gorllewin, Caerdydd CF5 2YB

E: HKahtan@cardiffmet.ac.uk

W/G: www.cardiffmet.ac.uk/CST

Essential Information

Programme Details

This programme is designed to provide students with a solid foundation in the principles and practices of software engineering. It covers the full software development life cycle and is designed to equip graduates with the necessary skills and knowledge to understand the relevant underpinning mathematical and computational formalisms/frameworks involved in designing large and complex software systems. It encourages students to function as autonomous learners, embodying computational thinking, real-world analysis, and modelling skills, in software development, resulting in graduates who contextualise their study in a broader technical and societal perspective, with core professional and ethical foundations.

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 Hasan Kahtan **Programme Director BSc Software Engineering**

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.

CMP4010	Computational Thinking (Term 1)
SEN4000	Principles of Programming (Term 1)
IST4000	Explore (Year-Long)
SEN4002	Software Design & Development (Term 2)
CMP4011	Architectures and Operating Systems (Term 2)
SEN4001	Web Designs and Databases (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

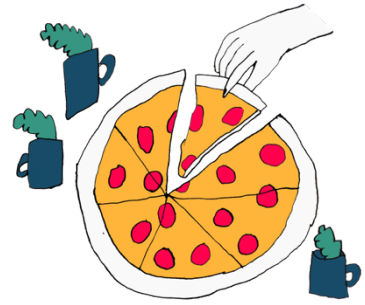*"Helped me settle in and took the pressure off travelling to a new place"*

"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

Task 1   Description

The task consists of answering some basic questions on software development and computer languages constructs and developing a simple game to mimic a slot machine, making use of a random number generator.

In this task we are using the programming language c#, which you can download from the Microsoft site. However, you could program this in any language of your choice.

Initially, you could simply solve the problem using a flowchart and stop there, or if you have any programming experience you could opt to produce the program in the language of your choice.

Start by researching the internet and or books from your local library, for the information you need to answer the questions. Make a note of the sources you found and attempt the questions. Then look at how to use flowcharts to build a solution to solve the problem. Then if you feel confident enough try coding.

1.1 Software Development
Written Part

1.1.1   **(Basic)** Define what you understand to be a variable and constant, stating the difference between them. Why are variables important in programming?

1.1.2   **(Basic)** With the use of suitable examples explain data types and mention why they are necessary?

1.1.3   **(Harder)** If these types are necessary, then using suitable examples explain how it is possible to convert from one type to another, using implicit and explicit type conversion.

1.1.4   **(Basic)** Explain the three different control structures in programming.

1.1.5   **(Harder)** With reference to selection, discuss how decision-making changes to the flow of the execution and describe the Boolean operations that can be used in decision-making.

1.1.6   **(Harder)** Define Arrays and explain the importance of arrays in programming, giving relevant examples to support your answer.

1.1.7   **(Harder)** Explain what is meant by a function or method and discuss the call by reference and call by value with suitable examples.

Practical Part

1.1.8   **(Harder)** Design and build a fruit machine game, representing the 3 reels of symbols by numbers ranging from 0 to 9, randomly chosen each time the player asks to take another go.

Practical Part

1.1.9 **(Harder)** Design and build a fruit machine game, representing the 3 reels of symbols by numbers ranging from 0 to 9, randomly chosen each time the player asks to take another go.

Figure 1 The 3 Reels of a Fruit Machine

To generate random numbers, you may add the following function to your code:

```
// Return a random value 0 to maxValue
// including 0 and maxValue themselves
{
static Random rnd = new Random();
static int RandomValue(int maxValue)
return rnd.Next(initial_value, maxValue + 1);
}
```

The value of 9 will be treated as the "Jackpot" symbol.

The scoring will be as follows:

• Any combination of two of the same numbers (excluding nines) will pay a
bonus of 5 points e.g. 7 5 7
 8 8 9
 6 5 5, etc.
• Any three of the same numbers (excluding nines) will pay a
bonus of 15 points e.g. 7 7 7, 8 8 8, 5 5 5, etc.

• Any combination of two nines will pay a
jackpot of 200 e.g. 5 9 9
9 8 9
9 9 6, etc.
 • Three nines pay out the big jackpot of 2000 points.

The points the player has accumulated should be displayed and the player should be asked if they wish to make another spin or quit. It could look something like this:

```
Spin? Yes
5 6 7
You lose, your points are
0 Spin? Yes
7 7 6
You win, your points are
5 Spin? Yes
9 9 9
You win, your points are 2010
```

1.1.7 Your design should make use of appropriate programming structures where appropriate. In addition, your program should keep track of player statistics including the players average and total score for each reel.

If you have any issues in attempting this work, then please drop me an email on **HKahtan@cardiffmet.ac.uk**

Task 2   Presentation

In this task we are going to produce a presentation, the topic is listed below, but before we start there is some guidance on how to prepare a presentation here:

Academic Skills Presentations (cardiffmet.ac.uk)

1. Construct a PowerPoint (or similar), on CYBERSPACE: prepare a PowerPoint Presentation (6-10 slides) with guidance to students on how to stay safe online. The PowerPoint will be marked on content and on the quality of the slides. It SHOULD include images AND a voiceover with your own recorded voice, not a speech synthesiser.
1.1 Once you have produced your presentation you can email it to me at **HKahtan@cardiffmet.ac.uk**
1.2 We can discuss them on induction.

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

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.
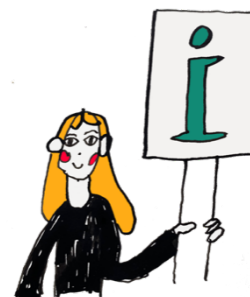
Student Services

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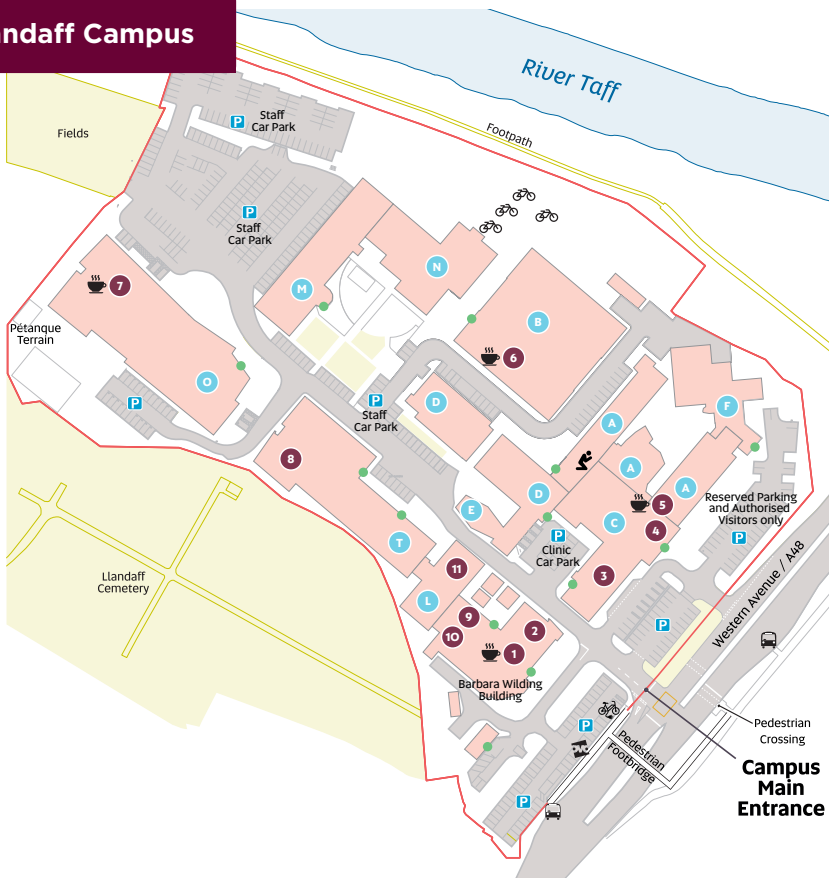
[What you need to know before you go](#)

Academic Calendar 2023/24

[Academic Calendar 2023/2024](#)

Llandaff Campus

River Taff

Footpath

Fields

Staff Car Park

Staff Car Park

Staff Car Park

Pétanque Terrain

Llandaff Cemetery

Clinic Car Park

Reserved Parking and Authorised Visitors only

Barbara Wilding Building

Western Avenue / A48

Pedestrian Crossing

Pedestrian Footbridge

Campus Main Entrance

Key

1 The Hub
2 Gym (First Floor)
3 Podiatry Clinic
4 Main Reception & i-Zone
5 The Gallery (First Floor)
6 The Box Café (First Floor)
7 The Atrium

8 IT Help Desk (First Floor)
9 The Global Lounge
10 Students' Union (First Floor)
11 Learning Centre
● Building letter
● Building Main Entrance

P Parking
Electric Bikes
OVO Bikes
Bike Rack
Bus Stop
Café
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