

## BSC(HONS) ROBOTICS

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Dear

Welcome to BSc(Hons) Robotics

We're getting in touch with some important information about your course that will help you as you prepare to join us.

At the end of this letter, you will find a list of equipment that you should bring with you, as well as any other costs that you might incur throughout your course that are not covered by your student loan.

We've also included some activities that we suggest you undertake, to help you prepare for your studies.

Additionally, we've included some suggested reading. You will have access to all the reading resources from the library when you arrive on campus, but if you're looking forward to getting stuck in, this is a good place to start.

Your academic experience will be predominantly in person with some courses using some digital resources to support your learning. To engage in the digital learning activity, although you will be able to access IT suites on campus, you may find it beneficial to have a laptop to access the platforms and tools we use. You will be provided with free access to the Microsoft Office suite, (including Word, Excel and PowerPoint) while you study at Falmouth.

### Student Finance

If you are eligible for a loan from Student Finance and have not yet applied, please do so immediately to ensure the loan is approved before you enrol. Once you enrol you are liable for the tuition fees. You can find more information from the Student Loans Company at: [gov.uk/government/organisations/student-loans-company](https://www.gov.uk/government/organisations/student-loans-company) If you are paying for your tuition yourself please check out [falmouth.ac.uk/study/tuition-fees](https://falmouth.ac.uk/study/tuition-fees). Advice on managing your finances while studying can be found on the University's website here: [falmouth.ac.uk/study/student-funding/how-much-does-it-cost](https://falmouth.ac.uk/study/student-funding/how-much-does-it-cost)

### Student Support

We know the prospect of coming to university can feel overwhelming but we're here to support you every step of the way. You can find an overview of the support available to you once you get here at this link [falmouth.ac.uk/experience/support](https://falmouth.ac.uk/experience/support)

To help us provide you with the right support during your time at Falmouth, if you have a disability, health condition or Specific Learning Difference (SPLD), you should apply for an Individual Learning Plan (ILP). This document suggests simple adjustments to your academic experience, tailored to your needs. By disclosing early, we can ensure that the necessary support is in place before you begin your journey with us. Find out how to apply here [studyhub.fxplus.ac.uk/accessibility-inclusion/ilps](https://studyhub.fxplus.ac.uk/accessibility-inclusion/ilps)

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If you don't have a formal diagnosis of an SPLD such as dyslexia, dyspraxia, or ADHD but think you might, our free online screening tool, the Do-It Profiler can help. It's like a quiz that helps pinpoint any areas where you might need extra support. More information and a link to the Profiler can be found here [studyhub.fxplus.ac.uk/accessibility-inclusion/spld-screening](https://studyhub.fxplus.ac.uk/accessibility-inclusion/spld-screening)

## Step Into Falmouth

In the coming weeks, you can join our Step into Falmouth programme, designed to provide advice and guidance to help you to settle into university life. This programme includes a range of informative and supportive videos you can view at a time that suits you, followed by live online events in August where you can meet our staff, current and new students. More information can be found at [falmouth.ac.uk/experience/new-students/step-into-falmouth](https://falmouth.ac.uk/experience/new-students/step-into-falmouth)

## Student Mentors

Before September, if you have any questions, you can join the Student Mentor team on Discord to talk about the course, living in Cornwall and what to expect at Falmouth. Our mentors are already studying on your course, so ask them anything you like. Find them at [falmouth.ac.uk/experience/new-students/mentoring](https://falmouth.ac.uk/experience/new-students/mentoring). Alternatively, email your name and your course to: [studentmentors@falmouth.ac.uk](mailto:studentmentors@falmouth.ac.uk) and they will be in touch.

Over the next few weeks, we'll email you more important information about your course and life at Falmouth. If you're going to be away or out of contact, make sure you ask someone to check your emails and reply on your behalf.

We know there is a lot to think about before you start at university. So, we're here to help. If you have any questions, just get in touch with Applicant Services on +44(0)1326 213730, use LiveChat on our website or email [applicantsservices@falmouth.ac.uk](mailto:applicantsservices@falmouth.ac.uk)

Finally, we wish you an enjoyable few weeks before the start of term and we're looking forward to welcoming you to Falmouth in September.

Yours sincerely,

## Matt Watkins

Senior Lecturer in Robotics  
[matt.watkins@falmouth.ac.uk](mailto:matt.watkins@falmouth.ac.uk)

## Getting started

### Your offer

If you have a conditional offer, your place is subject to meeting those conditions. This means we're waiting to receive your results or some more information before your place can be finalised. You can see these conditions on your UCAS Hub <https://accounts.ucas.com/account/login>

If you need to ask us anything about your offer, get in touch with our Applicant Services team on +44(0)1326 213730, use LiveChat on our website or email [applicantsservices@falmouth.ac.uk](mailto:applicantsservices@falmouth.ac.uk)

### Enrolment and Student Terms & Conditions

You'll get an email two weeks before the start of term telling you how to enrol online. You'll need to enrol before the first day of term to officially register as a student of Falmouth University and receive your undergraduate student loan.

When you enrol, you'll need to agree to and comply with the University's Student Terms & Conditions. These Terms & Conditions are important, and we encourage you to read them carefully, before enrolling. You can find them under 'Student Terms & Conditions' on our website [www.falmouth.ac.uk/student-regulations](http://www.falmouth.ac.uk/student-regulations)

### Tuition fees (per year)

2024-2025 full-time UK: £9,250

2024-2025 full-time EU/International: £17,950

Placement year: £1,850

### Term dates

Term dates can be found at [falmouth.ac.uk/experience/term-dates/term-dates-2024-25](http://falmouth.ac.uk/experience/term-dates/term-dates-2024-25)

Welcome Week starts on Monday 16 September for first year students.

Study Block one begins on 23 September and teaching and assessment will be throughout the full 15 weeks of the study blocks.

### Your timetable

Your academic timetable shows all scheduled learning activities and your course timetable. It will be published from 9 September. After you've enrolled, you can view it via the Student Portal at [falmouth.myday.cloud/](http://falmouth.myday.cloud/) or the Falmouth University App. You can download the app by searching the Google Play Store or Apple Store. It will also be accessible at [mytimetable.falmouth.ac.uk](http://mytimetable.falmouth.ac.uk).

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## **Welcome Week**

After you have enrolled, your timetable will show you where you need to go and when on Monday 16 September and throughout the week.

This is the week when you'll meet your course mates, course tutors and University staff. There will be important inductions to both your course and the wider University facilities and services, in addition to social activities organised by the University and Students' Union.

## Pre-course preparation

The course will primarily focus on developing your practical problem solving and programming skills, alongside fundamental knowledge of agile project management, computer science, and mathematics. There will be considerable emphasis on the challenges and opportunities presented by robotics projects and studio-based teamwork. Initially, we will gently introduce the principles of computing to you using Python and C# and Arduino IDE on Windows. This will ensure that, regardless of your level of prior programming experience, you are afforded the opportunity to develop a firm understanding of computing as a discipline and develop core competencies which are expected of all computing professionals. This forms the foundation that will then enable you to explore the richer, more complex programming constructs available in other languages.

It is important that you join the course with some programming experience, otherwise you will struggle. To this end, if you have never created your own software on the Windows platform using Python, you should do so in preparation for the course.

Firstly, you will need to setup a suitable development environment. Please download and install:

**Python 3:** [link.falmouth.games/python3](http://link.falmouth.games/python3)

**PyCharm Community Edition:** [www.jetbrains.com/pycharm/download/](http://www.jetbrains.com/pycharm/download/)

You may also need to install Java too as PyCharm is dependent on the Java Virtual Machine for portability. Any recent version will be fine: [www.java.com/en/download](http://www.java.com/en/download)

We have prepared some videos to show you what to do if you are uncertain how to do the setup: [link.falmouth.games/pythonsetup](http://link.falmouth.games/pythonsetup)

If you run into difficulties, please feel welcome to contact: [games.support@falmouth.ac.uk](mailto:games.support@falmouth.ac.uk)

### *Programming Tasks*

When you're feeling more confident with programming fundamentals, your task is to:

*Create a simple wall avoiding wheeled robot using a Microbit and Python.*

Use the following materials for support:

**Python 3 Docs:** [docs.python.org/3/tutorial/index.html](http://docs.python.org/3/tutorial/index.html)

**MakeCode:** [makecode.microbit.org](http://makecode.microbit.org)

To complete this project, you may want to purchase a basic robotic kit including motors, wheels, chassis, and sensor (£30 approx.): [link.falmouth.games/robotkit](http://link.falmouth.games/robotkit)

You will also need to purchase a Microbit (£13 approx.): [link.falmouth.games/microbitv2](http://link.falmouth.games/microbitv2)

To get a good overview of using Python and Microbit we recommend you watch this video first: [link.falmouth.games/microbot-tutorial](http://link.falmouth.games/microbot-tutorial)

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If you are feeling adventurous, consider how you might make a wall following program that proceeds from a start point to an end goal.

Bring your robot and your solution with you to university.

*Understanding Game Engines: Unity*

After you have successfully implemented your bot, you should familiarise yourself with the other programming languages and engines that you will be using on the Digital Creativity module:

**C#:** [www.codecademy.com/learn/learn-c-sharp](http://www.codecademy.com/learn/learn-c-sharp)

**Unity:** [learn.unity.com](http://learn.unity.com)

[learn.unity.com/course/beginner-scripting](http://learn.unity.com/course/beginner-scripting)

[learn.unity.com/project/intermediate-gameplay-scripting](http://learn.unity.com/project/intermediate-gameplay-scripting)

**Brackeys:** [link.falmouth.games/ytbrackeys](http://link.falmouth.games/ytbrackeys)

**Arduino:** [www.arduino.cc](http://www.arduino.cc)

Exploring C++, SDL, OpenGL, and Arduino IDE will also be useful. We will cover these topics in more depth after the first stage of the course.

## Course equipment and costs

You will need access to your own private personal computer to be able to put in the computer programming practice that is needed to become a computing professional.

A suitable personal computer for this course will likely cost around £1,500. The latest advice about which computers we recommend you buy for your course is available here:

[link.falmouth.games/computer-advice](http://link.falmouth.games/computer-advice)

You will also have access to machines with a very high specification in our studios where you'll be expected to do most of your work.

It is important that you have a reliable internet connection, as some materials are made available to you through our virtual learning environment. We recommend a fibre broadband connection if available, but a minimum of at least 5Mbps will be suitable for livestreaming content.

### *Consumable electronics*

You must reserve a budget of at least £40 to purchase additional materials and electronic components for your individual creative computing project. You should also anticipate a budget of at most £220 to purchase additional robotics kits and consumable materials for your multidisciplinary development projects.

### *Headset with Microphone*

You will need a headset with a microphone for some classes. We recommend purchasing a high-quality headset for your comfort. Manufacturers such as Sennheiser, Razer, HyperX and Corsair are rated highly by our current students. These can cost between £30 - £150.

### *Webcam*

You will need a webcam in some teaching. Manufacturers such as Logitech, Microsoft, and Razer are rated highly by our current students. These can cost between £25 - £100.

If you have further questions, need more detailed advice or would like us to check the suitability of a particular model, then please email [games.support@falmouth.ac.uk](mailto:games.support@falmouth.ac.uk)

## Highly Recommended - the 'Live @ AMATA Pass'

AMATA is Falmouth University's arts centre, offering a diverse year-round programme of exciting performances and productions, from monthly comedy nights to fantastic live music, trailblazing new theatre and dance.

The programme complements our portfolio of degrees and enables students to experience high quality, contemporary performances on their doorstep.

Students can purchase a one year Live @ AMATA Pass which offers five tickets for £25. This represents a 50% reduction on our standard student ticket price of £10.

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You will be able to view the programme at [falmouth.ac.uk/arts-centre](https://falmouth.ac.uk/arts-centre) from August 2024. However, the Live @ AMATA Pass is available now to book at [falmouth.ac.uk/arts-centre/visit/tickets#live-pass](https://falmouth.ac.uk/arts-centre/visit/tickets#live-pass)

Please note: If a parent or guardian is purchasing on behalf of a Falmouth University student, the account should be set up in the student's name, using their email address.



## Reading lists

Prior to your arrival, you should read:

Matarić, M., 2008. The robotics primer. Cambridge, Mass: The MIT Press. Read Free here: <https://pages.ucsd.edu/~ehutchins/cogs8/mataric-primer.pdf>

We also recommend that you purchase and read the following books, although we do not expect you to have finished reading them by your first day of attendance:

Blum, J., Exploring Arduino: Tools and Techniques for Engineering Wizardry, 1st Edition. Indianapolis, IN: Wiley, 2013. £10

Keith, C., 2010. Agile Game Development with Scrum. Boston, MA: Addison-Wesley. RRP £43.

Matrin, R.C., 2008. Clean code: A Handbook of Agile Software Craftsmanship., Boston, MA: Prentice-Hall. RRP £20.

Bond, J.G., 2018. Introduction to Game Design, Prototyping, and Development from Concept to Playable Game with Unity and C#. Upper Saddle River, NJ: Addison-Wesley. RRP £32.

Dunn, F. & Parberry, I., 2011. 3D Math Primer for Graphics and Game Development, 2nd Edition. CRC Press. RRP £53. Available for free online: [gamemath.com](http://gamemath.com)

Electronic copies of books will be significantly cheaper than hard copies. Some have been released online by authors as free PDF documents. As such, the cost of book purchases should not exceed £150 and can be significantly less.

Do not worry if you have not studied computing or advanced mathematics in a formal setting. We will cover everything that you need to know. However, some of you may find the learning curve quite steep. As such, to refresh your knowledge, we urge you to watch:

**Mechatronics:** [www.youtube.com/c/HowToMechatronics](http://www.youtube.com/c/HowToMechatronics)

**Computing:** [www.youtube.com/user/computerphile](http://www.youtube.com/user/computerphile)

**Mathematics:** [www.youtube.com/user/numberphile](http://www.youtube.com/user/numberphile)