**BSc AI and Data Science Handbook**

Table of Contents

[Welcome 2](#_Toc122097272)

[Mission statement 2](#_Toc122097273)

[Sources of information 3](#_Toc122097274)

[Programme Overview 4](#_Toc122097276)

[Teaching, Learning and Assessment 5](#_Toc122097284)

[Module Delivery **5**](#_Toc122097285)

[Support for Learning **6**](#_Toc122097298)

[Learning Resources **6**](#_Toc122097304)

[Module Assessment **6**](#_Toc122097308)

[Academic Misconduct **7**](#_Toc122097313)

[Other activities **7**](#_Toc122097316)

[Appendix 1: Programme to Module Learning Outcomes Map 9](#_Toc122097330)

[Appendix 2: Learning Outcomes for Intermediate Awards 10](#_Toc122097331)

[Appendix 3: ASSESSMENT MAP 12](#_Toc122097332)

[Appendix 4: Award MAP 13](#_Toc122097333)

# Welcome

Welcome to the BSc Artificial Intelligence and Data Science programme at the University of Northampton. We are a rapidly growing group of students, lecturers, researchers, and external partners. Our aim is to equip you with the knowledge and practical skills for your future adventure either as an engineer, research scientist or business innovator.

The programme is part of the Computing group which sits in the Technology Subject Area of the Faculty of Arts, Science and Technology (FAST). Many lecturers who will teach and support you are also involved in cutting-edge research and innovation. This ensures that our course evolves continuously and is always up-to-date. We also hope that you will take part in our research and industrial collaboration like many of our current students. Students is an important and leading part of the course development. We listen to students’ voices and adapt teaching methods and course materials for the best learning outcome and student experience.

This handbook is intended to help you find important resources and information. You will find the most recent updates and announcements on our programme NILE site. If you think we can import this handbook in any way, please do let us know.

Good luck and enjoy your new journey!

Prof Dr Mu Mu (Programme lead) on behalf of your programme team

Email: [mu.mu@northampton.ac.uk](mailto:mu.mu@northampton.ac.uk)

# Mission statement

Artificial intelligence and data science are driving a new era of innovation in public health, manufacturing, transportation, and many other areas. This programme equips students with research, design, and programming skills to apply artificial intelligence concepts and techniques in the context of real-world industrial and business scenarios. In a state-of-the-art AI lab, students develop and deploy applied AI solutions individually and as part of a team. We are also part of the Amazon Web Services (AWS) Academy, delivering accredited cloud computing courses to prepare students for industry-recognised certifications and the most in-demand careers in the cloud industry. We’re confident that you will secure a graduate position or continue your studies once you graduate and complete one of our awards.

# Sources of information

[**University of Northampton public website**](http://www.northampton.ac.uk/) for the latest news and online resources.

[**Student Hub on the University website**](https://adfs.northampton.ac.uk/adfs/ls/?wa=wsignin1.0&wtrealm=urn:federation:MicrosoftOnline&wctx=wa%3Dwsignin1.0%26rpsnv%3D3%26ver%3D6.1.6206.0%26wp%3DMBI%26wreply%3Dhttps%253A%252F%252Fmynorthamptonac.sharepoint.com%252F_forms%252Fdefault.aspx%253FReturnUrl%253D%25252Fsites%25252Fstudent%25252F_layouts%25252F15%25252FAuthenticate.aspx%25253FSource%25253D%2525252Fsites%2525252Fstudent%2525252F%250A%26lc%3D2057%26id%3D500046%26)

The Student Hub includes a number of services such as academic support, disability support, financial guidance, IT services, complaints and appeal, employability events, etc.

[**University Undergraduate Student Handbook**](https://searchtundra.northampton.ac.uk/getfile.ashx?DocId=2232527556843556280)

This Undergraduate Handbook provides advice on University Regulations and contains a lot of useful and important information to refer to during your studies. You should familiarize yourself with the content now and refer to it throughout your studies whenever you have a query. It explains the structure of the Awards, what to do to make sure you are on the right programme of study, where to go to get advice along with other valuable information.

This Handbook should be read in conjunction with the International Student Handbook. Any change to the programme for which you are registered must be checked and approved by International Student Support Services (ISSS) to ensure it meets with UKVI requirements.

[**University Undergraduate Calendar**](https://searchtundra.northampton.ac.uk/getfile.ashx?DocId=2232527556200824090)

The calendar includes key dates and events. Specific dates and times for assessments will be set by the corresponding module leader and announced on module NILE sites.

**Programme NILE site**

You are enrolled on a Programme NILE site where we publish information specific to your year group.

[**Programme Welcome Pack**](https://www.northampton.ac.uk/student-life/new-students/welcome-packs/)

Our welcome packs provide important information about your programme and starting your studies so that you can settle into University life during your first few weeks. Check the Welcome packs accordion for your specific welcome pack. If you cannot currently see your welcome pack, please check back regularly for updates. The purpose of these pages is to help you prepare for coming to study with us. We want to make sure that you are inspired, anchored, prepared, and enabled to succeed.

[**Programme Blog**](https://mypad.northampton.ac.uk/uonai/)

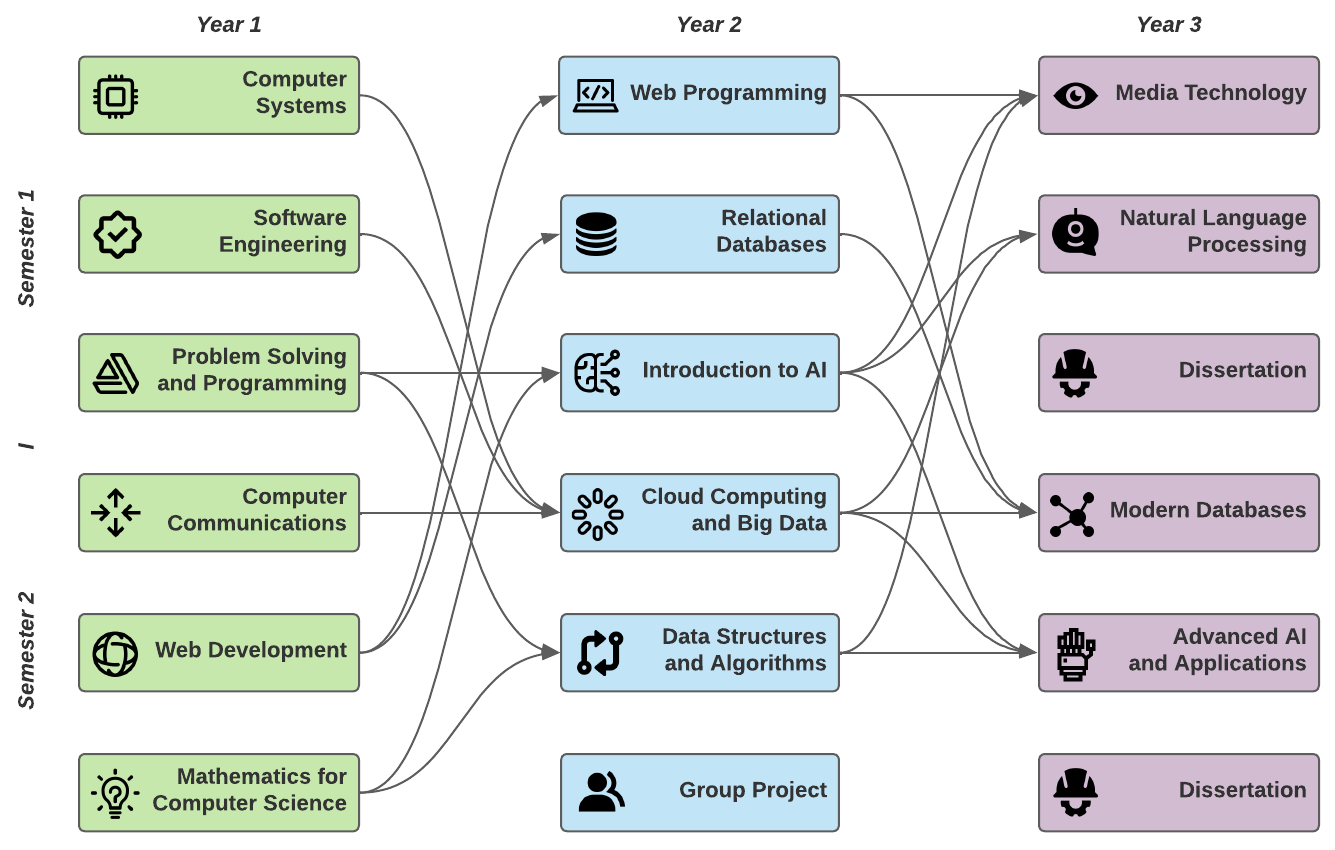
The website includes the latest news about teaching and research, as well as tech blogs from both staff and students of the programme.

[**Northamptons Students' Union**](https://northamptonunion.com/)

The Students' Union is a registered charity, completely independent from the University based in The Engine Shed on the Waterside Campus. They are led by students, underpinned by volunteers and staff, seeking to ensure that your time at the university is the best it can possibly be – that it is rewarding, fulfilling, and memorable.

# Programme Overview

This programme will equip you with a range of knowledge and practical skills required to establish your career. They can aid many career paths, such as a machine learning software engineer, solution architect, project manager or AI research scientist. You will learn the fundamentals and applications of data science and machine learning progressively over the course period.



**Year 1**During your first year of this programme, you will study common computer science modules which give you the foundation and flexibility to specialise in your second and third years. Additionally, you’ll study a specialised module that is tailored for artificial intelligence and data science programme students.

**Year 2**In your second year, you will continue your journey with more specialised modules. These include the Introduction to AI, Cloud Computing and Big Data, and Relational Databases along with other computer science modules. You will also complete a group project where you will be a part of a small design team working to produce an innovative and bespoke AI solution to a real-world challenge.

**Year 3**In your final year of the degree, you will acquire comprehensive AI skills in advanced modules. These modules include such as Advanced AI and Applications, Natural Language Processing, Modern Databases, and Media Technology. You will be able to develop AI applications using computer vision and neural networks and deploy the solutions in the cloud. You’ll have an opportunity to complete an independent dissertation on a specialist topic of your choice in the field of artificial intelligence.

**Accreditation**We are part of [**Amazon Web Services (AWS) Academy**](https://aws.amazon.com/training/awsacademy/). Students joining the programme will have the chance to take part in AWS-accredited cloud computing courses to prepare students for industry-recognised certifications and the most in-demand careers in the cloud industry.

Brief descriptions of each course module can be found [**here**](https://www.northampton.ac.uk/caf/singaward/shartificialintel.htm).

Teaching, Learning and Assessment

## Module Delivery

The delivery of each module will vary but in general, you will be taught either in-person or online in a variety of ways including but not limited to:

* Lectures: A formal but interactive talk given by the module tutor, covering the core topics of the module.
* Seminars: A less formal discussion group, led by the module tutor, where students can discuss material and identify topics that are causing concern.
* Practical: Practical exercises that support the theoretical learning provided in the lectures.
* Directed Personal Study: Module tutors will supply a reading list of essential and background course text. To ensure a complete understanding of the subject material this additional wider reading is vital.

Most modules of the programme will be delivered in one of the Computer Labs in the Learning Hub, Creative Hub or Senate building. Some Computer Labs are configured for specialised module delivery. For instance, LH311 in Learning Hub is known as the “AI Lab” with hardware and software configurations for computer vision, machine learning and cloud computing modules. You are welcome to use any of the Computer Labs for your coursework during their opening hours when they are not reserved for teaching. Please follow the user guide of each Computer Lab.

You are expected to fully engage with the module delivery and complete all coursework. Your class attendance whether in-person or online will be recorded. Genuine absence from lessons is sometimes unavoidable. If you can’t attend any scheduled session, ensure you inform the module tutor.

As well as the scheduled lessons you have on your timetable, you are expected to do several hours of personal study each week for each subject. You are expected to use this time for:

* Additional reading about the subject.
* Completing activities/lab exercises and tasks set by tutors.
* Working on assignments/coursework.
* Revising for examinations/tests.

Support for Learning

At the institutional level support includes those services offered by Library and Learning Services, Information Technology Services and Student Services. In addition, the Learning Development team provides support for study skills.

All students studying at the UoN campus in Northampton will also receive an additional 6 hours of embedded academic skills development at each level of the programme of study. These will be shared across core modules and will cover academic and digital skills from Library and Learning Services teams, and employability and changemaker skills development from the Changemaker Hub.

Dedicated technicians who operate the laboratories and specialised computer rooms where appropriate engineering software is available support the programme.

Specialist addition support in Mathematics, English and a range of key skills is provided to support those students who request further assistance. Students are first advised to consult the module tutor and where necessary encouraged to make full use of the opportunities provided by the Learning Development.

All students are allocated a personal tutor who has responsibility for providing pastoral and welfare support. If the tutor is unable to provide direct help then the University provides a number of specialised student support services to which a student can be directed. These services embrace accommodation, special additional needs (disability, dyslexia, mental health etc.), financial guidance, careers guidance, chaplaincy, childcare, and counselling.

Learning Resources

Recommended learning resources are published on the module NILE site. This includes a module Reading List, links to online resources, etc.

In addition to a large collection of electronic and print resources provided by the University Library, you also have access to multiple world-leading computer science and engineering digital libraries such as IEEE Xplore and ACM Digital Library via [Library and Learning Services](https://libguides.northampton.ac.uk/LLSHome).

[LinkedIn Learning](https://lnkd.in/eNEwe4pT) is a huge library of high-quality online video tutorials and is free to University of Northampton students. Use it to develop your key study skills, digital skills, business skills, and lots more.

Module Assessment

Module assessments take place in the format of coursework assignments, time-constrained assignments and/or examinations. Each module normally has one or two formal assessment points. An indication of the weighting for each piece of coursework and/or examination is provided in the module specification.

The assessment strategy aims at supporting students’ group-based and independent learning throughout the programme as students progress from understanding fundamental concepts at Level 4 to critically applying knowledge and techniques for problem-solving at Level 5 and Level 6 while recognising the range of student backgrounds and interests. Students have the opportunities to achieve their learning outcomes through significant exposure to practical coursework and substantial individual and group project work. This is reflected in the range of assessment methods including time-constrained assessments, assignments, portfolios, project reports, and video demonstrations. Assignment work consists of documenting and reporting on the solution to supplied problems and scenarios and analysing case studies. A time-constrained assignment or TCA is, typically, an assignment that must be completed within a time limit. For example, the assignment is released at a specific time and date and must be completed within the specified time frame, normally, on the same date.

All work submitted for assessment must be via NILE. It is your responsibility to ensure that you are fully aware of the upload procedures, including the times when assignments should be submitted. Formal feedback from assignments is due approximately 4 working weeks after the assignment is completed. All tutors will endeavour to meet this marking/feedback deadline.

Except where an extension of the hand-in deadline date or mitigating circumstance dispensation has been approved, lateness penalties will be applied in accordance with the university policy specified in Student Handbook.

## Academic Misconduct

Academic misconduct runs counter to academic integrity and is defined by the University as “an attempt by a student to complete an examination or other assessment by means considered to be unfair”. It includes Plagiarism and Collusion between students.

The university policies for avoiding academic misconduct and guidance through the academic misconduct procedure can be found in the [Academic Integrity and Misconduct Policy](https://searchtundra.northampton.ac.uk/?tag=6b623fba-68f4-4e99-915e-34128c51b1c6).

## Other activities

**The Computing Society**

The computing society is currently the largest society and runs activities to engage students, this can include using Linux, Raspberry Pi, and Enterprise/Consultation events. The society aims to foster employability skills in students using Social Enterprises and study skills as well as social activities such as Gaming (LAN) parties or outings.

**AI Society**

A few students in AI and Data Science programme are setting up an AI Society for staff and students who are interested in AI, machine learning, and how the related technologies can deliver a positive impact.

**Employability Activities Running in 2022-23**

We run a number of employability events throughout the year including:

* Simplifying the Job Search for International Students
* Changemaker & Employability
* Student Volunteer Training
* Changing Futures Week
* Careers Expo
* Barclaycard Challenge

Details of these events will be published on the programme NILE site.

# Appendix 1: Programme to Module Learning Outcomes Map

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Compulsory / Designated** | **Section A:  Subject-Specific Knowledge, Understanding and Application PLOs** | | | | | | | | **Section B: Employability and Changemaker Skills PLOs** | | |
| **Level 4:** | **A1** | **A2** | **A3** | **A4** | **A5** | **A6** | **A7** | **A8** | **B1** | **B2** | **B3** |
| CSY1061 | C | X |  | X |  |  |  |  |  | X |  | X |
| CSY1062 | C | X | X |  |  |  |  |  | X |  | X | X |
| CSY1063 | C | X | X |  |  | X |  |  |  | X | X |  |
| CSY1064 | C | X | X |  |  | X | X |  |  | X | X |  |
| CSY1020 | C | X | X | X | X | X |  |  |  | X |  |  |
| CSY1060 | C | X | X |  |  |  | X | X |  | X | X | X |
| **Level 5:** | **C/D** | **A1** | **A2** | **A3** | **A4** | **A5** | **A6** | **A7** | **A8** | **B1** | **B2** | **B3** |
| CSY2087 | C | X | X | X |  |  | X |  |  | X |  |  |
| CSY2088 | C |  |  |  |  | X |  |  | X |  | X |  |
| CSY2089 | C |  |  | X | X |  | X | X |  | X |  | X |
| CSY2080 | C | X |  | X |  |  |  | X |  | X |  |  |
| CSY2081 | C | X | X | X | X |  |  |  | X | X |  | X |
| CSY2082 | C | X | X | X | X |  | X |  | X | X |  |  |
| **Level 6:** | **C/D** | **A1** | **A2** | **A3** | **A4** | **A5** | **A6** | **A7** | **A8** | **B1** | **B2** | **B3** |
| CSY3058 | C | X | X | X | X | X |  | X |  | X |  |  |
| CSY3059 | C | X | X | X |  |  |  | X | X |  | X | X |
| CSY3060 | C | X |  | X | X |  | X |  | X | X |  |  |
| CSY3055 | C | X | X | X | X | X | X |  | X | X |  | X |
| CSY4022 | C | X | X | X |  | X | X |  | X |  | X | X |

# Appendix 2: Learning Outcomes for Intermediate Awards

|  |
| --- |
| **Certificate of Higher Education** |
| The award of a Certificate of Higher Education indicates that, with detailed guidance, students will be able to:  **Subject-Specific Knowledge, Understanding and Application (max 3)**   1. demonstrate knowledge of the underlying concepts and principles associated with their area(s) of study, and an ability to evaluate and interpret these within the context of that area of study; 2. demonstrate an ability to present, evaluate and interpret qualitative and quantitative data, in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of their subject(s) of study; and 3. evaluate the appropriateness of different approaches to solving problems related to their area(s) of study and/or work.   **Employability and Changemaker Skills (max 3, drawn from the** [**ChANGE Project**](https://www.northampton.ac.uk/ilt/current-projects/change/)**)**   1. work collaboratively, making connections with peers. 2. use their knowledge to identify opportunities for change. 3. use evidence to generate impact for themselves and their communities. |
| **Unnamed Diploma of Higher Education** |
| The award of a Diploma of Higher Education indicates that with guidance students will be able to:  **Subject-Specific Knowledge, Understanding and Application (max 5)**   1. demonstrate knowledge and critical understanding of the well-established principles of their area(s) of study, and of the way in which those principles have developed 2. demonstrate the ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context 3. demonstrate knowledge of the main methods of enquiry in the subject(s) relevant to the named award, and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study 4. evidence an understanding of the limits of their knowledge, and how this influences analyses and interpretations based on that knowledge.   **Employability and Changemaker Skills (max 3, drawn from the** [**ChANGE Project**](https://www.northampton.ac.uk/ilt/current-projects/change/)**)**   1. create collaboratively through professional connections. 2. be socially responsible and use their knowledge to manage opportunities for positive change. 3. use evidence and reflection to develop themselves and generate positive impact on their work with others. |

# Appendix 3: ASSESSMENT MAP

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Assessment**  **Type Module Code** | **AS** (assignment) | **DI** (dissertation) | **ES** (essay) | **TC** (time-constrained assessment) | **PF** (portfolio) | **PJ** (project) | **PR** (practical) | **PS** (presentation) |
| **Level: 4** |  | | | | | | | |
| CSY1061 |  |  |  | **xx** |  |  |  |  |
| CSY1062 |  |  |  | **xx** |  |  |  |  |
| CSY1063 | **xx** |  |  |  |  |  |  |  |
| CSY1064 |  |  |  | **x** |  | **x** |  |  |
| CSY1020 | **x** |  |  |  |  | **x** |  |  |
| CSY1060 |  |  |  | **xx** |  |  |  |  |
| **Level: 5** |  | | | | | | | |
| CSY2087 |  |  |  | **xx** |  |  |  |  |
| CSY2088 |  |  |  |  |  | **x** |  |  |
| CSY2089 | **xx** |  |  |  |  |  |  |  |
| CSY2080 |  |  |  | **x** |  | **x** |  |  |
| CSY2081 | **xx** |  |  |  |  |  |  |  |
| CSY2082 | **xx** |  |  |  |  |  |  |  |
| **Level: 6** |  | | | | | | | |
| CSY3058 | **x** |  |  | **x** |  |  |  |  |
| CSY3059 | **xx** |  |  |  |  |  |  |  |
| CSY3060 |  |  |  |  |  | **xx** |  |  |
| CSY3055 | **x** |  |  |  |  | **x** |  |  |
| CSY4022 |  | **x** |  |  |  |  |  |  |

# Appendix 4: Award MAP

**Detail of award:** BSc (Hons) Artificial Intelligence & Data Science 2022 entry

**Name of award:** BSc (Hons) Artificial Intelligence & Data Science

In order to achieve the named award above students must meet all requirements of this award map.

**STAGE 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Code*** | ***Title*** | ***Credits*** | ***Status*** | ***Pre-Requisites*** |
| [CSY1061](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1061) | Computer Systems | 20 | Compulsory | None |
| [CSY1062](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1062) | Computer Communications | 20 | Compulsory | None |
| [CSY1063](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1063) | Web Development | 20 | Compulsory | None |
| [CSY1064](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1064) | Software Engineering Fundamentals | 20 | Compulsory | None |
| [CSY1020](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1020) | Problem Solving and Programming | 20 | Compulsory | None |
| [CSY1060](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1060) | Mathematics for Computer Science | 20 | Compulsory | None |

Students must take all modules

**STAGE 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Code*** | ***Title*** | ***Credits*** | ***Status*** | ***Pre-Requisites*** |
| [CSY2087](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2087) | Data Structures and Algorithms | 20 | Compulsory | None |
| [CSY2088](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2088) | Group Project | 20 | Compulsory | None |
| [CSY2089](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2089) | Web Programming | 20 | Compulsory | CSY1063 |
| [CSY2080](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2080) | Relational Databases1 | 20 | Compulsory | None |
| [CSY2081](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2081) | Cloud Computing and Big Data | 20 | Compulsory | None |
| [CSY2082](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2082) | Introduction to Artificial Intelligence | 20 | Compulsory | None |

Students must take all modules.  
  
 **STAGE 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Code*** | ***Title*** | ***Credits*** | ***Status*** | ***Pre-Requisites*** |
| [CSY4022](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY4022) | Computing Dissertation | 40 | Compulsory | None |
| [CSY3058](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY3058) | Media Technology | 20 | Compulsory | None |
| [CSY3059](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY3059) | Modern Databases | 20 | Compulsory | None |
| [CSY3060](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY3060) | Advanced AI and Applications | 20 | Compulsory | None |
| [CSY3055](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY3055) | Natural Language Processing | 20 | Compulsory | None |

Students must take all modules   
  
Students who do not complete the Honours Degree will be eligible for an Ordinary Degree in the named subject upon successful completion of a minimum of 60 Level 6 credits. These can be from any Level 6 modules, whether identified as compulsory or designated.   
  
  
  
1 Cannot be taken with CSY2093

**Detail of award:** BSc (Hons) Artificial Intelligence & Data Science including Integrated Foundation Year 2022 entry

**Name of award:** BSc (Hons) Artificial Intelligence & Data Science

In order to achieve the named award above students must meet all requirements of this award map.

**STAGE 1a**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Code*** | ***Title*** | ***Credits*** | ***Status*** | ***Pre-Requisites*** |
| [FDN018](https://www.northampton.ac.uk/awards/modules/FOUNDATION-STUDY-FRAMEWORK/3/#FDN018) | Transition to University – Learning to Learn | 40 | Compulsory | None |
| [FDN020](https://www.northampton.ac.uk/awards/modules/FOUNDATION-STUDY-FRAMEWORK/3/#FDN020) | Investigating Your Subject | 20 | Compulsory | None |
| [FDN019](https://www.northampton.ac.uk/awards/modules/FOUNDATION-STUDY-FRAMEWORK/3/#FDN019) | Foundations in Physical Sciences | 20 | Compulsory | None |
| [FDN021](https://www.northampton.ac.uk/awards/modules/FOUNDATION-STUDY-FRAMEWORK/3/#FDN021) | Negotiated Learning Project | 40 | Compulsory | None |
| Students must take all compulsory modules | | | | |

**STAGE 1b**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Code*** | ***Title*** | ***Credits*** | ***Status*** | ***Pre-Requisites*** |
| [CSY1061](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1061) | Computer Systems | 20 | Compulsory | None |
| [CSY1062](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1062) | Computer Communications | 20 | Compulsory | None |
| [CSY1063](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1063) | Web Development | 20 | Compulsory | None |
| [CSY1064](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1064) | Software Engineering Fundamentals | 20 | Compulsory | None |
| [CSY1020](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1020) | Problem Solving and Programming | 20 | Compulsory | None |
| [CSY1060](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/4/#CSY1060) | Mathematics for Computer Science | 20 | Compulsory | None |

Students must take all modules

**STAGE 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Code*** | ***Title*** | ***Credits*** | ***Status*** | ***Pre-Requisites*** |
| [CSY2087](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2087) | Data Structures and Algorithms | 20 | Compulsory | None |
| [CSY2088](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2088) | Group Project | 20 | Compulsory | None |
| [CSY2089](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2089) | Web Programming | 20 | Compulsory | CSY1063 |
| [CSY2080](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2080) | Relational Databases1 | 20 | Compulsory | None |
| [CSY2081](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2081) | Cloud Computing and Big Data | 20 | Compulsory | None |
| [CSY2082](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/5/#CSY2082) | Introduction to Artificial Intelligence | 20 | Compulsory | None |

Students must take all modules.  
  
 **STAGE 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Code*** | ***Title*** | ***Credits*** | ***Status*** | ***Pre-Requisites*** |
| [CSY4022](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY4022) | Computing Dissertation | 40 | Compulsory | None |
| [CSY3058](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY3058) | Media Technology | 20 | Compulsory | None |
| [CSY3059](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY3059) | Modern Databases | 20 | Compulsory | None |
| [CSY3060](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY3060) | Advanced AI and Applications | 20 | Compulsory | None |
| [CSY3055](https://www.northampton.ac.uk/awards/modules/COMPUTER-SYSTEMS/6/#CSY3055) | Natural Language Processing | 20 | Compulsory | None |

Students must take all modules   
  
Students who do not complete the Honours Degree will be eligible for an Ordinary Degree in the named subject upon successful completion of a minimum of 60 Level 6 credits. These can be from any Level 6 modules, whether identified as compulsory or designated.   
  
  
  
1 Cannot be taken with CSY2093