

BSC COMPUTER SCIENCE (CK401) HANDBOOK

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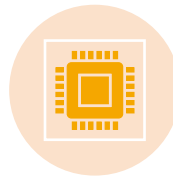
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INTRODUCTION



University College Cork (UCC) has a very important place in the history of Information Technology as Boolean algebra, which provides the mathematical basis for computer design, was named after George Boole, the first Professor of Mathematics in UCC.



Computer scientists conceive, design, build, and maintain the complex computer systems to solve real world problems. This involves the study of computing processes, algorithmic principles, software, hardware & systems design, their implementation, and their impact on society. As a Computer Science student, you will master the core technologies that provide the building blocks of modern computer systems, such as networks, database technology, programming, algorithms, artificial intelligence, cyber security, web technology and applications.



The school is located in the five-storey Western Gateway Building. The building includes state-of-the-art teaching laboratories, world-class research laboratories and is designed to achieve an environment that will encourage staff and students to be both productive and creative.



COURSE OUTLINE

Our Computer Science degree programmes comprise a blend of lectures and laboratory work. Apart from the lectures that introduce the key concepts, each module includes a suite of labs designed to provide experience with practical problem solving, using these concepts in a small group setting. Computer Science is a discipline where you learn by doing, and so these labs form an integral component of the course. Your work is assessed throughout the year using a mixture of regularly assigned course work, class tests and projects.



SEMESTER DATES

Teaching Semester 1	26/09/2022 - 10/12/2022
Study/Review Week	12/12/2022 - 17/12/2022
Christmas Exams	19/12/2022 - 23/12/2022
Teaching Semester 2	16/01/2023 - 08/04/2023
Easter Recess	10/04/2023 - 22/04/2023
Study/Review Week	24/04/2023 - 27/04/2023
Exam Dates	28/04/2023 - 13/05/2023



COURSE DETAILS



Year 1 Modules

60 credits

Core Modules 50 credits		Credits	Lecturer
<u>CS1106</u>	Introduction to Relational Databases	5	Dr Kieran Herley
<u>CS1110</u>	Computer Hardware Organisation	5	Professor John Morrison
<u>CS1111</u>	Systems Organisation	5	Professor John Morrison
<u>CS1112</u>	Foundations of Computer Science I	5	Professor Barry O'Sullivan
<u>CS1113</u>	Foundations of Computer Science II	5	Professor Barry O'Sullivan
<u>CS1115</u>	Web Development I	5	Dr Derek Bridge
<u>CS1116</u>	Web Development II	5	Dr Derek Bridge
<u>CS1117</u>	Introduction to Programming (15 credits)	15	Dr Aisling O'Driscoll

Year 1 Modules

60 credits

Elective Modules 10 credits

<u>CS1130 & CS1131</u>	Irish Language for Computer Science I & II
<u>CH1001</u>	Chinese Language (Mandarin) I (Beginner Level) (10 credits)
<u>EC1202</u> <u>EC1203</u>	Economic Reasoning for Business & Macroeconomic Context and Business
<u>FR0105</u> <u>FR1005</u>	Introduction to French & French for Near Beginners
<u>FR1105</u> <u>FR1107</u>	Threshold French & French for Reading Purposes I
<u>GE0005 & GE0008</u>	German Language (CEFR-Level A2.1 & A2.2)
<u>HS0028</u>	Spanish Language (Beginner Level) (10 credits)
<u>IT1102</u>	Non-Beginners' Written and Spoken Italian (10 credits)
<u>IT1109</u>	Introduction to Written and Spoken Italian (10 credits)
<u>MA1001 & MA1002</u>	Calculus for Science Parts 1 & 2
<u>MA1059</u> <u>MA1060</u>	Calculus Introduction to Analysis

Year 2 Modules

60 credits

Core Modules 50 credits

<u>CS2208</u>	Information Storage and Management I
<u>CS2209</u>	Information Storage and Management II
<u>CS2503</u>	Operating Systems I
<u>CS2505</u>	Network Computing
<u>CS2506</u>	Operating Systems II
<u>CS2507</u>	Computer Architecture
<u>CS2513</u>	Intermediate Programming
<u>CS2514</u>	Introduction to Java
<u>CS2515</u>	Algorithms and Data Structures I
<u>CS2516</u>	Algorithms and Data Structures II

Year 2 Modules

60 credits

Elective Modules

10 credits

Computer Science: [CS2502](#), [CS2511](#) (5 credits per module)

Languages: [HS0128](#) (10 credits), [FR1105](#)* plus [FR1107](#)* (5 credits per module) or [FR2105](#) plus [FR2107](#) (5 credits per module)

Mathematics: [MA1057](#) (5 credits) plus [MA1058](#) (5 credits)

Note: *Modules [FR1105](#) and [FR1107](#) are only available to students who have not already taken French in First Year.

Year 3 Modules

60 credits

Core Modules 40 credits

<u>CS3305</u>	Team Software Project (10 credits)
<u>CS3306</u>	Workplace Technology and Skills (10 credits)
<u>CS3318</u>	Advanced Programming with Java
<u>CS3500</u>	Software Engineering
<u>CS 3300</u>	Work Placement (Between April and April of the following year, 10 credits) or
<u>CS3301</u>	Work Placement (April - September)

Year 3 Modules

60 credits

Elective Modules 20 credits

<u>CS3204</u>	Cloud Infrastructure and Services
<u>CS3506</u>	Networks and Data Communications
<u>CS3509</u>	Theory of Computation
<u>CS3511</u>	Ethical Hacking and Web Security
<u>CS3514</u>	C-Programming for Microcontrollers

Year 4 Modules

60 credits

Core Modules
15 credits

CS4501

Computer Science Project

Year 4 Modules

60 credits

Elective Modules

45 credits *Note that not all elective modules will be offered each year.*

CS4092	Special Topics in Computing I	CS4612	Web Search
CS4093	Special Topics in Computing II	CS4613	Games Engines
CS4150	Principles of Compilation	CS4614	Introductory Network Security
CS4402	Parallel and Grid Computing	CS4615	Computer Systems Security
CS4403	Introduction to Embedded Systems	CS4616	Distributed Algorithms
CS4404	Computer Graphics	CS4617	Advanced Computer Architecture I
CS4405	Multimedia Compression and Delivery	CS4618	Artificial Intelligence I - In order to register for CS4619, you must register for CS4618 as it is a co-requisite.
CS4407	Algorithm Analysis	CS4619	Artificial Intelligence II
CS4412	Rules-Based Systems	CS4620	Functional Programming I
CS4506	Advanced Client-side Programming	CS4621	Functional Programming II
CS4507	Advanced Software Engineering	CS4622	Advanced Computer Architecture II
CS4508	Software System Engineering	CS4626	Constraint Programming and Optimisation
CS4610	Collective Intelligence and the Adaptive Web	CS4627	Software-Defined Networking
CS4611	Information Retrieval	CS4628	Internet of Things



COURSE PRACTICALITIES

This is a full-time course expecting a full-time commitment. The annual 60-credits workload typically equates to 12 hours of lectures per week and a comparable amount for laboratory work and tutorials.

Expected reading/practical hours: The course also demands a significant amount of additional time for study, reading, completion of project and assignment work.



TIMETABLES



The BSc Computer Science starts on 26/9/2022 for 1st year students. Timetables are available at <http://timetable.ucc.ie> , select College of Science, Engineering, Food Science and Semester 1/2.



Please note that the timetables may be altered and updated over the first weeks of Semesters I and II; laboratory timetables are scheduled later.

HOW TO USE CANVAS

Canvas is a web-based learning management system, used by institutes of higher education around the world. It will be an important learning support to you in your time in UCC.

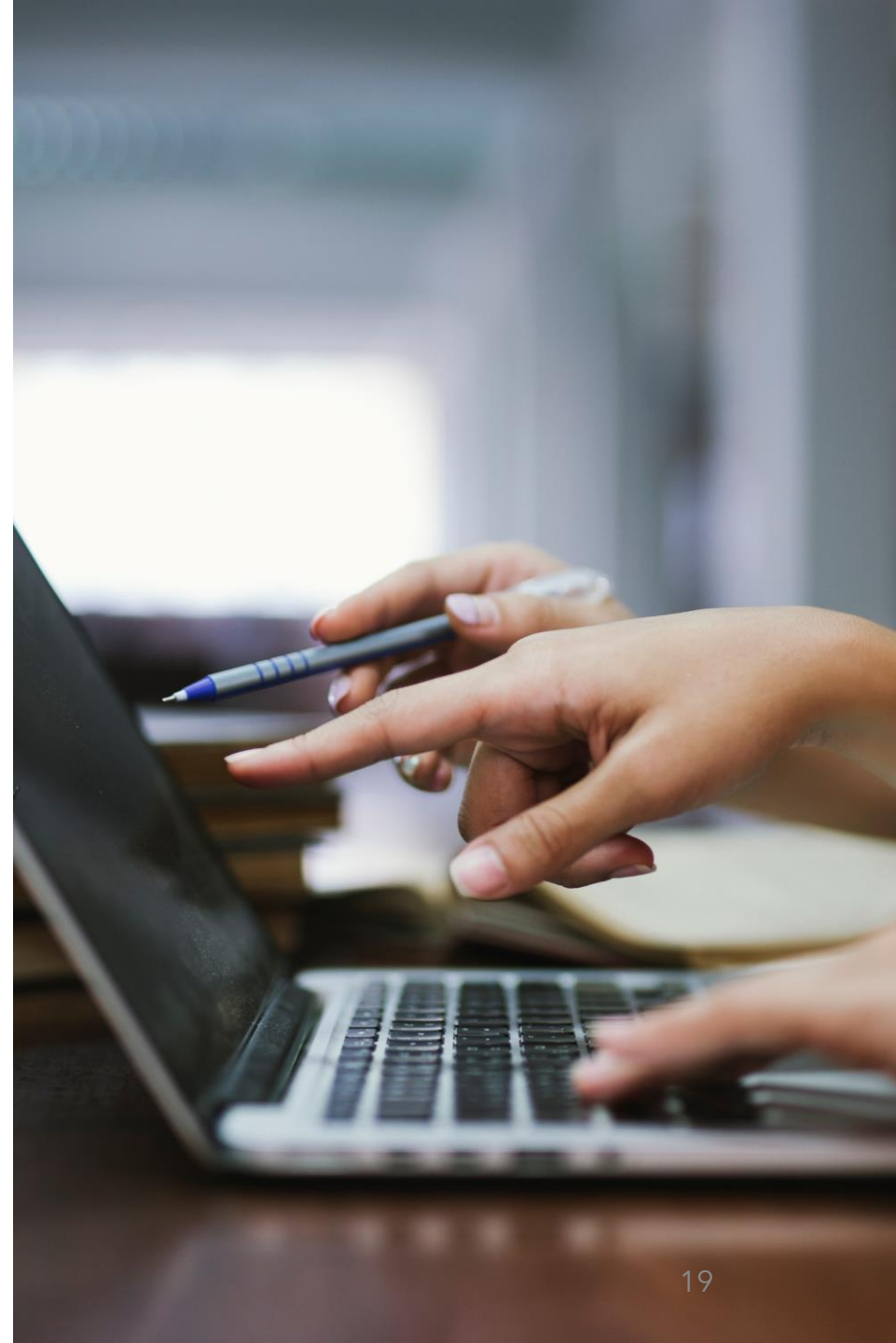
When you register with us, you will be automatically enrolled in the "Learning with Canvas" course, which is accessible through canvas.

Further information on Canvas and its technical requirements can be found on our remote learning support webpage :
<https://www.ucc.ie/en/sit/support/remote-learning/#what-do-i-need-for-remote-learning>



PLAGIARISM

Plagiarism is the presentation of someone else's work as your own. When done deliberately, it is cheating, since it is an attempt to claim credit for work not done by you and fails to give credit for the work of others. Plagiarism applies not just to text, but to software, graphics, tables, formulae, or any representation of ideas in print, electronic or any other media.



UCC policy on plagiarism

All students are required to read, to understand, and to comply with the UCC Policy on Plagiarism, which may be found on line at www.ucc.ie/en/exams/procedures-regulations/



Submitting original and existing work

In general, you should write all coursework in your own words.

Coursework includes but not limited to:

- Programming assignments;
- Literature reviews;
- Abstracts and summaries;
- Thesis.

Submitting existing software

As a general rule:

For assignments you are not allowed to submit existing software unless the lecturer clearly indicates that this is allowed. Please consult with your course lecturer if you are unsure whether you are allowed to submit existing software for assignments.

For your thesis, you are usually allowed to submit (small) parts of existing software. Please consult with your project supervisor if you are unsure whether you are allowed to re-use existing software for your thesis.

Submitting work from others

If you wish to quote small portions of text, include images, software, or other work created by others, you need to make it clear that you are doing so. You usually do this by putting quotation marks around quoted text and by including citations. Please note that pictures and diagrams in books and papers may be copyrighted, in which case you need explicit permission from the copyright holder.

Please note that if you acknowledge the original source, your lecturers/examiners will know that you are aware of the source, for which you can receive credit in the form of marks. If you fail to acknowledge the source, your lecturers/examiners cannot give you any credit for using the source. When failing to acknowledge the source is a deliberate, this is a form of cheating, which may result in awarding a zero mark.

Citing existing software

As with any work written by others, if you submit (parts of) existing software as part of your coursework, you should always give proper credit to the original author(s). In addition, you should clearly indicate which parts of these software are yours and which are not.

In a program listing you should indicate this using comments;

In a report, literature review, or thesis you should also indicate the source of the software in the running text, which should include a proper citation.

ATTENDANCE

Every registered student is expected to attend all teaching elements of their programme, including, but not limited to, lectures, tutorials, laboratory classes, placements, etc.





ADDITIONAL ACADEMIC SUPPORTS

If you need additional academic support please speak to your module lecturer in the first instance followed by your year coordinator. Those who require additional academic support due to disability, should register with the UCC disability support service at <https://www.ucc.ie/en/dss/> .



IT SUPPORT FOR BSC CS

You will be provided with a Login ID and Password in your first lab session to access the CS and Statistics laboratory machines and the main servers.

Entry to our computer laboratories is by Swipe Access, for which you will need a valid Student ID Card, which you will receive at Registration.



COMPUTER SCIENCE LAB SUPPORT

If you have any IT queries regarding the Computer Science Labs you should contact the Computer Science IT Support Desk via email at help@cs.ucc.ie.

The Computer Science IT Support Desk is situated in Room 1.25, First Floor, Western Gateway Building. The Computer Science IT Support Desk is open during term between 11.00 a.m. – 12.30 p.m. Monday to Friday and 2.30 p.m. – 4.00 p.m. Monday to Thursday. You can visit the Computer Science IT Support webpage for helpful technical guidance <http://www.cs.ucc.ie/help>



Equipment

The School provides all the facilities necessary to complete your practical laboratory work. However many students opt to purchase a personal laptop/machine. If you choose to do so and have queries relating to a suitable specification please consult the Computer Science IT Support webpage <http://www.cs.ucc.ie/help> where a dedicated post is available at http://www.cs.ucc.ie/help/?page_id=834



Print Quota

To manage printing facilities effectively, you will be allocated a Print Quota. Your logon entitles you to print 150 pages, with a charge of 5c per subsequent page. You can “top-up” by buying additional quota from the Print Quota machine, which is located near the Computer Science IT Helpdesk on the First Floor.

HEALTH & SAFETY GUIDELINES FOR STUDENTS

Students and staff are at all times expected to adopt a responsible attitude to all matters concerning health and safety at UCC. Under the current Safety, Health and Welfare at Work Act students/staff have a legal responsibility to consider their own safety, must cooperate at all times in implementing laboratory safety policy of UCC, must use the safety equipment provided, must report accidents or unsafe practices and must not interfere with the school safety policy.

It is expected that students will adhere strictly to the instructions of academic, technical and research staff when carrying out practical work.

EMERGENCY EVACUATION DRILLS/FIRE ALARMS

If the fire alarm sounds please leave the building as quickly as possible by the nearest exit and follow instruction of the fire marshals.

SCHOOL FIRST AIDER

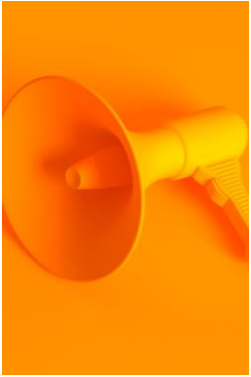
Contact School Office ext. 5891



MESSAGE REGARDING COVID 19

**The university are planning full on
campus delivery for 2022/23.**

MESSAGE REGARDING COVID 19



For reliable information please refer to national and UCC sources of information only:

- University College Cork will post information for students on its FAQ page: <https://www.ucc.ie/en/emt/covid19/student-faq/>
- Health Service Executive: <https://www2.hse.ie/coronavirus/>
- Health Protections Surveillance Centre: <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/>
- Coronavirus (COVID 19) <https://www.gov.ie/en/campaigns/c36c85-covid-19-coronavirus/>

At all times, students are expected to observe the national guidelines to reduce the spread of Covid 19.

If have the symptoms of COVID 19 or suspect that you have them, **DO NOT COME TO THE UNIVERSITY**, contact your GP or UCC Health on 021 4902311 and follow their advice. Please alert your lecture(s) also.

Please be aware that the situation regarding the virus, COVID 19, is dynamic and advice and guidelines may change from time to time.



LABORATORIES

Food and beverages are not allowed in the laboratories – food contamination on the mouse and keyboards are serious health risk

- Remove all trip hazards (rucksacks, clothing etc.) from walking areas
- Please remove all items from the laboratory when you are leaving
- Do not provide access to the laboratory to other non-Computer Science students
- Report any hazards (obstacles, cables, etc.) to School Office, Rm 1.28
- Note the UCC acceptable usage policy regarding online usage. See link listed below
- Pay attention to existing signage in the laboratories
- If you find items in labs that do not belong to you, please bring to the School Office, Room 1.28
- Please remember that the laboratories are a working environment and noise should be kept at a minimum
- Dispose of all waste in the refuse bins provided

UCC POLICIES AND PROCEDURES

There are many important policies and procedures with which Students should be familiar. See the below for information on each one.

- Policies and Procedures
<http://www.ucc.ie/en/students/policies/>
- Acceptable Usage Policy <https://www.ucc.ie/en/it-policies/policies/au-pol/>
- Student Health Service
<https://www.ucc.ie/en/studenthealth/>

This document is provided as a guideline only, if you have any concerns, please contact the School Office; Tel: 021 420 5892, email: csoffice@cs.ucc.ie



UCC SKILLS CENTRE

- Dedicated to helping students improve their fundamental academic skills, the Skills' centre will be on hand to offer training and support on:
 - how to study
 - writing essays at university level
 - how to plan and manage your college assignments
- Make sure to take the Skills' Centre lesson, visit the Skills' Centre website, and take the other Skills' Centre Canvas module, to set yourself up for academic success. See <http://skillscentre.ucc.ie/>

BOOLE LIBRARY

<https://libguides.ucc.ie/library>

A series of workshops for incoming students will run in the Boole Library throughout September. No need to book, just turn up on the day. It is important that you attend these workshops as they are a vital resource in your studies, and you will receive guidelines on all aspects of academic writing.





IMPORTANT WEBSITE LINK

Book of Modules <http://www.ucc.ie/modules/>

College Calendars <https://www.ucc.ie/admin/registrar/calendar/science/sci002.html#CK401>

Examinations <http://www.ucc.ie/en/exams/>

Fees <http://www.ucc.ie/en/financeoffice/fees/>

Marks and Standards <http://www.ucc.ie/admin/registrar/marksandstandards/>

Registration <http://www.ucc.ie/calendar/general/info014j.html>

Includes information on the following

General

Address details

Identity ID cards

Workload Guidelines

Attendance

Elective Modules

Change of Module/Subject

Special Permission to depart from published regulations

Attendance at additional modules

Student Leave of Absence

Withdrawal from course programme during the academic year

Fees Refund - Fees Office

Attendance in a repeat year

Transcripts



LIST OF LECTURING STAFF

Lecturing Staff	Tel. No.	Room No.	Email
Dr Frank Boehme	420-5916	G-60	f.boehme@cs.ucc.ie
Dr Derek Bridge	420-5907	2-64	d.bridge@cs.ucc.ie
Prof. Ken Brown	420-5952	2-50	k.brown@cs.ucc.ie
Dr James Doherty	420-5929	1-72	j.doherty@cs.ucc.ie
Dr Dan Grigoras	420-5918	G-65	d.grigoras@cs.ucc.ie
Dr John Herbert	420-5925	1-78	j.herbert@cs.ucc.ie
Dr Kieran Herley	420-5905	G-63	k.herley@cs.ucc.ie
Dr Laura Maye	420-5889	G-70	l.maye@cs.ucc.ie
Dr Rosane Minghim	420-4879	1-76	r.minghim@cs.ucc.ie
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Dr Steve Prestwich	420-5911	2-58	s.prestwich@cs.ucc.ie
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Dr Marc van Dongen	420-5903	G-64	dongen@cs.ucc.ie
Dr Andrea Visentin	420-5909	G-71	Andrea.visentin@ucc.ie
Dr Ahmed Zahran	420-5926	1-82	a.zahran@cs.ucc.ie

CONTACT DETAILS

The School Office is situated in Room 1.28 on the First Floor of the Western Gateway Building.

Contact Details:

- Margaret Hynes/Julie Walsh
- Phone: +353 21 4205892
- Email: csoffice@cs.ucc.ie

The School Office opening hours is from 9.00 a.m. – 1.00 p.m. and 2.00 p.m. – 5.00 p.m. Monday – Friday to help you with any queries.

