



BSc (Honours) Software Development

"Software is a great combination between artistry and engineering."
- Bill Gates

If you have a passion for programming this flagship bachelor's degree can open up multiple career opportunities for you. Software engineers design and develop large complex systems used in industry, banking, manufacturing, financial services, logistics, technology and medical applications, to name but a few.

As this is a modern industry-linked degree you will study relevant up-to-date modules. The programme was designed with several pillars. These pillars include Computer Science, Software Development, Data Science, Operating Systems and Software Engineering.

The Software Development pillar takes you on a journey from Programming Fundamentals to Modular Programming to Object Oriented Principles to

Object Oriented Programming to Distributed Systems Programming to App Development Frameworks topping off with Data Driven Microservices.

The Data Science pillar starts with an Introduction to Databases before moving on to Database Design, NoSQL Data Architectures, Programming for Data Analytics, Machine Learning and finally Big Data & Analytics. Please refer to the programme schedule for all module details.

The programme has a significant work placement element where students are placed with selected employers for up to 9 months starting in January of year three.

Undergraduate

This programme is delivered full-time over four academic years.

Contact us

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Department of Computer Science

The Department of Computer Science at MTU Cork is one of the largest Computer Science departments in Ireland. We offer a range of modern undergraduate programmes and a host of opportunities at master's degree and at PhD level. Our industry engaged programmes match the needs of our economy and have an excellent reputation for producing the most employable computer science graduates. These highly skilled graduates are in huge demand and contribute significantly to the development of the region. As technology plays a greater role in our society the growth in the demand for these graduates will continue year after year.

BSc (Honours) Software Development Programme Schedule

Detailed programme descriptors can be viewed at <https://cs.cit.ie/sdh-schedule>.

Year 1 - Semester 1	CR	Year 1 - Semester 2	CR
Programming Fundamentals (SOFT6018)	5	Modular Programming (SOFT6017)	5
Web Development Fundamentals (SOFT6007)	5	Introduction to Databases (COMP6041)	5
Computer Architecture (COMH6002)	5	Operating Systems in Practice (COMP6042)	5
Computer Security Principles (COMP6035)	5	Networking Fundamentals (COMP6027)	5
Maths for Computer Science (MATH6055)	5	Discrete Mathematics (MATH6004)	5
Creativity, Innovation & Teamwork (CMOD6001)	5	Physical Computing (COMP6043)	5
Year 2 - Semester 1	CR	Year 2 - Semester 2	CR
Object Oriented Principles (SOFT7004)	5	Object Oriented Programming (COMP7013)	5
Database Design (SOFT7022)	5	NoSQL Data Architectures (COMP7037)	5
Operating Systems (SOFT7006)	5	C Programming (SOFT7019)	5
Requirements Engineering (SOFT7007)	5	OO Analysis and Design (SOFT7005)	5
Linear Data Structures & Algorithms (COMP7035)	5	Nonlinear Data Structures & Algorithms (COMP7038)	5
Server-side Web Development (SOFT7008) (E)	5	Probability & Statistics (STAT7007)	5
Year 3 - Semester 1	CR	Year 3 - Semester 2	CR
Distributed Systems Programming (SOFT8023)	5	Work Placement/Internship (PLAC7009)	30
Group Project (SOFT7003)	5		
Programming Mobile Devices (SOFT7035)	5		
Agile Processes (COMP7039)	5		
Programming for Data Analytics (SOFT8032)	5		
Technical Writing Using XML (COMP7040) (E)	5		
Year 4 - Semester 1	CR	Year 4 - Semester 2	CR
Application Development Frameworks (SOFT8020)	5	Data Driven Microservices (SOFT8026)	5
Project Research Phase (INTR8016)	5	Project Implementation Phase (INTR8015)	10
Embedded Systems Tools & Models (COMP8049)	5	Advanced OS & Virtualisation (COMP8051)	5
Security for Software Systems (COMP8050)	5	Big Data & Analytics (SOFT8033)	5
Machine Learning (COMP8043)	5	Applied Cryptography (COMP8004) (E)	5
Game Development (SOFT8009) (E)	5		

CR = ECTS Credit, (E) = Example elective module. Work Placement is normally paid and organised by the department.