Build on your existing computer science or information and communications technology skills and apply them to cutting-edge developments in computing with a Master of Computer Science.

This Master’s degree is for people with an undergraduate degree in computer science, information and communications technology (ICT) or significant work experience. It’s suitable for students who wish to study advanced computer science topics to enhance their career prospects.

You will move through a wide range of real-world problems, developing a skill set spanning theoretical and algorithmic foundations and innovative developments in computing.

You will specialise in one of these industry-focused areas:
- big data management
- cloud computing
- mobile computing
- security
- software architecture
- web systems and search technology.

You’ll undertake a major research or industry-based project, which will enhance your understanding of computer science fundamentals and develop your skills in research, communication and project management.

On graduation you’ll have excellent programming skills, be capable of designing, implementing and maintaining complex software systems, and be able to readily adapt to new advances in the rapidly changing information technology environment.

This program aims to help you develop and apply the knowledge and skills that are essential to be employed as a capable software developer, with potential to move into a leadership role.

Through the Master of Computer Science you will move from theory to the practice of coding solutions to real-world problems. It will also provide you with opportunities to undertake further studies in research, including Master of Computer Science by Research and PhD in Computer Science.

Learning and teaching
RMIT is committed to providing students with an education that closely links formal learning with workplace experience.

Learning experiences will contain a broad mix of study modes, including lectures, tutorials, practical classes, project work and seminars, using face-to-face, online and other flexible delivery mechanisms.

Assessment is designed to give you opportunities to demonstrate your capabilities. You will find that the assessment used may be different for each course, depending on the course objectives and learning outcomes.

You will have access to specialised computer laboratories both for use during scheduled classes and outside scheduled class times. These laboratories provide access to a range of computer environments including a variety of database products under different operating systems.

Industry connections
RMIT University has substantial links with the ICT industry both within Australia and internationally.

Employers and industry professionals are members of the Industry Advisory Committee and have contributed to the initial development and ongoing improvement of the program. Their involvement ensures that the Master of Computer Science remains relevant to your needs and the needs of graduate employers. It also actively contributes to the program through participation in seminars, industry awards and scholarships.

Many of the teaching staff within the program are practising (or have been) industry professionals with extensive industry experience and contact networks. This experience, when integrated into teaching and learning practice, enriches your learning environment.

You’ll also have the chance to undertake an industry-based project with an employer. You’ll be doing specific courses that focus on Work Integrated Learning (WIL). You will be assessed on professional work in a work place setting (real or simulated) and receive feedback from those involved in your industry.
Career outlook

On graduation you’ll have the knowledge and skills to solve complex social, economic and technical problems in an ICT context and be able to play leading roles in the ICT industry.

Depending on your specialisation, possible careers can include:

- **Big data management**: data analyst; data mining specialist; data centre manager; data quality engineer; knowledge engineer; big data tech lead; database specialist; research analyst; information architect; Hadoop architect/developer; business intelligence expert
- **Cloud computing**: cloud solution architect; IaaS architect/developer; SaaS architect/developer; Hadoop specialist; cloud and big data specialist
- **Mobile computing**: Android, iPhone, Windows mobile applications development; mobile games architect/developer; mobile architect/mobile software platform architect; mobile security expert; mobile application tech lead; IT infrastructure manager
- **Security**: information security specialist; information assurance professional; computer systems auditor; information consultant; information manager, with potential to progress to a role as a researcher in information security
- **Software architecture**: business analyst; electronic commerce developer; internet professional; multimedia design; systems design; software design; systems management; applications and analyst programming; senior programmer; software engineer; systems programmer; system architect; IT architect; software architect, or enterprise architect
- **Web systems and search technology**: web information architect; web security analyst; web application architect or tech lead, developer; web content manager; webmaster

Professional recognition

Graduates are eligible to apply for professional-level membership of the Australian Computer Society.

Program structure

**This Master consists of 144 credit points.**

Upon completion of the first year of the program (96 credit points), including core courses, you will be eligible to exit the program with the Graduate Diploma in Computer Science.

This includes advanced computer science core courses, four courses from your area or areas of specialisation, one program elective (or an additional specialisation course) and minor thesis or a software engineering project.

Choose from the following specialisations:

- **Big data management**
  
  The world is facing an information overload thanks to the profusion of data from a diverse and growing range of new and evolving sources, including social media, mobile devices and cameras.

  While the technological capacity to store information doubles every 3 years, 2.5 quintillion bytes of data were created each day in 2012, producing collections of data sets that are becoming too large and complex for the capabilities of existing database management tools and traditional data processing applications.

  With a specialisation in big data management you’ll learn to manage the challenges of big data and exploit its potential – capture, curation, storage, search, sharing, transfer, analysis and visualisation.

  Analysis of big data can lead to key organisational insights such as identifying business trends, determining research quality. These insights can be applied to diverse areas and projects such as delivering preventive healthcare, or linking legal citations to combat crime.

- **Cloud computing**

  Cloud computing allows computing tasks – running applications, storing data, and so on – to be carried out remotely.

  The opportunity to exploit the potential economies of scale, while creating efficiencies and cost savings, has given great impetus to cloud computing over recent years.

  Through this specialisation you’ll gain insights into many cloud computing systems, including Google AppEngine, Microsoft Azure, Yahoo’s Hadoop, Google’s MapReduce, Amazon EC2 and S3.

- **Mobile computing**

  With mobile technologies facilitating advances in communications, finance, and information exchange and sharing, we’ve only just begun to explore the potential for this technology.

  As a platform for creating key applications for industry, government and commerce, the demand for skill sets in mobile computing systems is sure to grow, especially given the growth in internet and web-based systems.

  You’ll develop skills in the key areas in mobile computing including mobile software, mobile hardware, and mobile communication and security.

- **Security**

  At all levels, critical infrastructure relies upon information and database systems to store, process and exchange information.

  Organisations with diverse functions collect, process and store vast amounts of confidential information about employees, customers, products, research and more, on computers and database systems.

  Consequently, the security of this data, whether in banks or transport networks, telecommunications or utilities, has become vitally important.
In this specialisation you’ll develop technical and management skills to enhance security in computer systems. This is applicable to organisations whose functions are varied, such as governments, the military, corporations, hospitals, financial institutions, universities or private businesses.

Software architecture

Software architects oversee the high-level design and structure of the ICT systems that underpin the infrastructure of an organisation.

With the accelerating growth and evolution in the technologies available for developing software applications and systems, greater efficiency and flexibility will be highly sought after in all types of organisations.

You’ll gain expertise in advanced software development techniques and technologies, exploiting modern development environments and languages, and balancing a range of usability issues when designing solutions.

Web systems and search technology

The explosion of web resources and internet applications presents us with unprecedented choices and opportunities; however searching and deciding on what to use, choose or lose is becoming trickier.

More than ever web users need more sophisticated search technologies and effective and efficient tools for locating, managing and exchanging all sorts of information, including documents, pictures and other structured and unstructured data.

You’ll learn about the design and implementation of search engines, search engine optimisation, structured and unstructured information management and web services.

Courses

The following is an example of courses offered. Some courses listed may not be available each semester.

Core courses:
- Algorithms and Analysis
- Software Engineering Project Management
- Usability Engineering

Capstone courses:
- Research Stream – A: Complete the following two courses:
  - Research Methods
  - Minor Thesis/Project
  OR
- Project Stream – A: Complete the following two courses:
  - Advanced Professional Development
  - Software Engineering Postgraduate Project

Specialisation elective courses:
- Advanced Topics in Artificial Intelligence
- Advanced Topics in Distributed Systems and Networks
- Advanced Topics in Search Technology
- Advanced Topics in Software Engineering
- Big Data Infrastructures
- Big Data Processing
- Cloud Computing
- Cloud Infrastructures
- Cloud Security
- Computer and Internet Forensics
- Cryptography and Security
- Data Mining
- Database Systems
- Enterprise Architecture
- Foundations Distributed Computing
- Games and Artificial Intelligence Techniques
- Information Retrieval
- Intelligent Web Systems
- Internet and Intranet Document Engineering
- iPhone Software Engineering
- Knowledge and Data Warehousing
- Mobile Application Development
- Object Oriented Software Design
- Secure Electronic Commerce
- Secure Network Programming
- Software Requirements Engineering
- Systems Architecture
- Web Services

Program elective courses:
- Artificial Intelligence
- Broadcast Networks and Applications
- Database Administration
- Digital Media Computing
- Document Mark-Up Languages
- Electronic Commerce and Enterprise Systems
- Game Mechanics and Game Play
- Programming
- Scripting Language Programming
- Software Architecture: Design and Implementation
- Software Testing
- Unix Systems Administration and Programming
- Web Database Applications
- Web Development Technologies
- Web Servers and Web Technology
Master of Computer Science

Entry requirements

You must have one of the following:

- A bachelor degree with a minimum GPA of 2.0 out of 4.0 in computer science; software, computer, network engineering; or information technology or similar discipline; or

- Five years current relevant work experience in programming, web, application, database software engineering; system, functional or business analysis; information, system or enterprise architecture; ICT management.

Credit and exemptions

You may be eligible for advanced standing based on industry experience or academic results in your previous studies.

If you have completed one of the following qualifications majoring in software engineering, computer science or information technology, subject to RMIT RPL policy and AQF Volume of Learning requirements, you will be eligible for exemptions as follows (see table):

How to apply

Direct to RMIT University: rmit.edu.au/programs/apply/direct

Application dates Semester 1, 2017
- Applications open 14 August 2016
- Timely applications close 10 November 2016.

Semester 2, 2017
- Applications open 1 May 2017
- Timely applications close 31 May 2017

Late applications will be accepted after this date if places are available.

Fees

2017 indicative fees

The annual tuition fee for full-fee places in 2017 is AU$24,000.

This program is offered on a full-fee paying basis only. If you are offered a place, you will need to pay the full tuition costs of your program. However, eligible students (such as Australian citizens or holders of an Australian permanent humanitarian visa) may apply to defer payment of some or all of their tuition fees via the Commonwealth Government’s FEE-HELP loan scheme.

Fees shown above apply to 2017 only and are based on an annual full-time study load of 96 credit points unless otherwise noted. A proportionate fee applies for more or less than the full-time study load. Tuition fees are adjusted on an annual basis and these fees should only be used as a guide.

For more information and to learn how to calculate your exact tuition fees see: www.rmit.edu.au/programs/fees/postgraduate

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#### Qualification level

<table>
<thead>
<tr>
<th>Qualification level</th>
<th>Exemptions</th>
<th>Remaining program duration</th>
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<tbody>
<tr>
<td>Bachelor of Software Engineering, Bachelor of Computer Science, or Bachelor of Information Technology</td>
<td>No exemptions</td>
<td>Minimum of 144 credit points (equivalent to three semesters of full-time study)</td>
</tr>
<tr>
<td>Bachelor of Computer Science (Honours)</td>
<td>Up to 48 credit points (equivalent to one semester of full-time study)</td>
<td>Minimum of 96 credit points (equivalent to two semesters of full-time study)</td>
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<tr>
<td>[Cognate] Graduate Diploma in Software Engineering or Computer Science, which require the completion of a Bachelors Degree in Software Engineering or Computer Science as the entry requirement.</td>
<td>Up to 48 credit points (equivalent to one semester of full-time study)</td>
<td>Minimum of 96 credit points (equivalent to two semesters of full-time study)</td>
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This information is designed for Australian and New Zealand citizens and permanent residents of Australia.

Disclaimer: Every effort has been made to ensure the information contained in this publication is accurate and current at the date of printing. For the most up-to-date information, please refer to the RMIT University website before lodging your application. Visit www.rmit.edu.au RMIT University CRICOS Provider Code: 00122A. Prepared September 2016.