Master of Engineering (Management)

Advance your knowledge to manage within engineering and technology-based organisations

RMIT Online

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Develop leadership and project management skills

Gain the qualifications necessary to face the evolving challenges of engineering management.

Learn from leading industry experts

Connect with and learn from academic and industry leaders – just as you would on-campus.

100% online - no on-campus commitments

A fast-paced way to finish your degree without compromising the coursework or your career.

Program overview

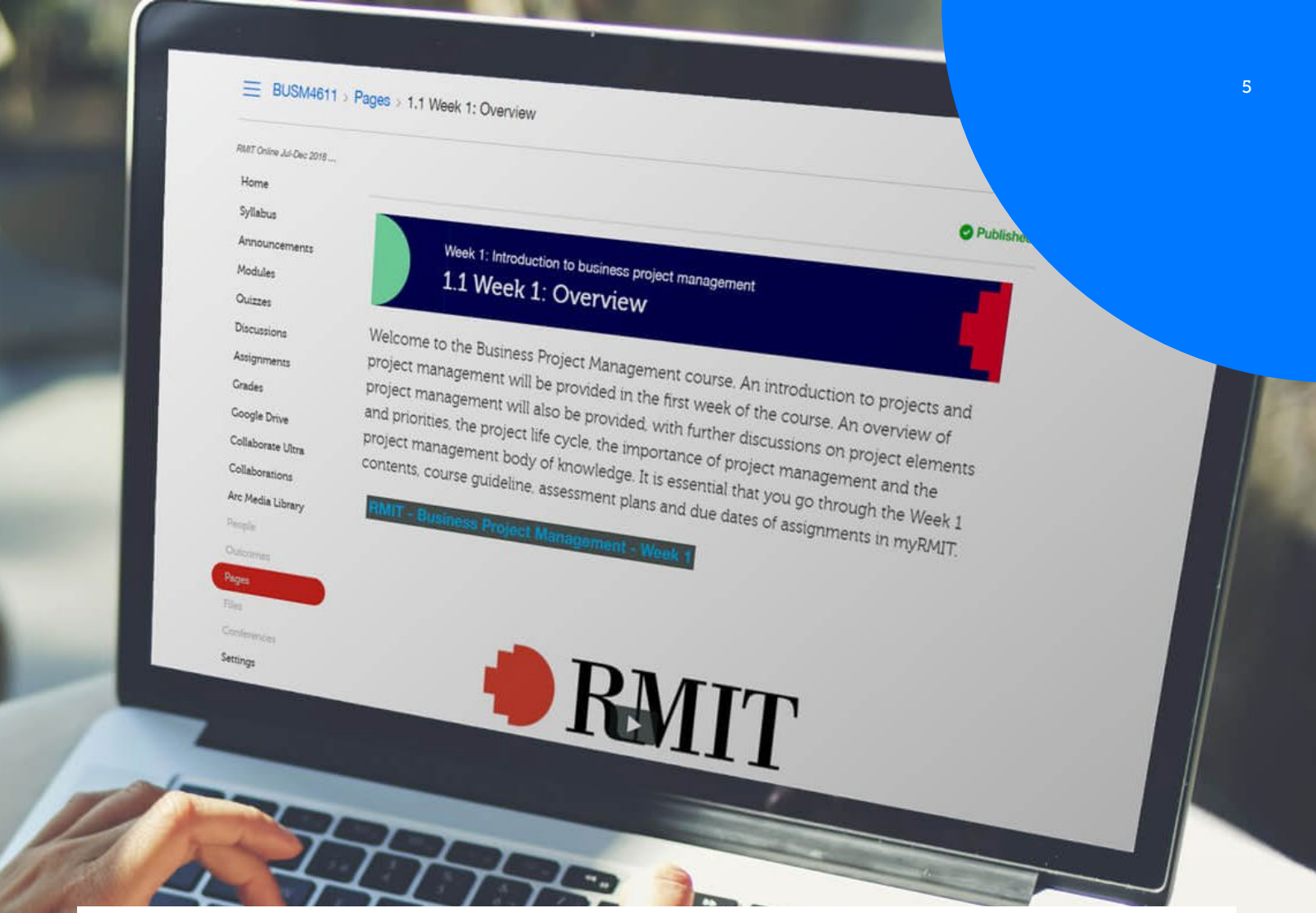
This tailored program prepares you for leadership roles and to take on a broad range of management responsibilities in engineering and technology-based organisations.

You will be encouraged to think strategically, address problems with a different perspective, challenge existing practices, innovate new system approaches and build a deeper understanding of the ever-changing technology base, exposing you to real-world, global issues and how to address them.

The program courses include:

- System Engineering Principles
- Management of Technology
- Building Quality Organisations
- Sustainable Engineering Systems and Environment
- Integrated Logistics Support Management
- Risk Management and Feasibility
- Engineering Economic Strategy
- International Engineering Management
- Performance Management Foundations
- Project Management
- Master's Research Project 1
- Master's Research Project 2

Full unit details can be found from page 11



The RMIT Online student experience

- A flexible student experience allows you to utilise study tools **anywhere**, **anytime**.
- Our **cutting-edge learning environment** means you don't have to be a computer whiz to use it.
- **Industry-experienced academics** are there to guide you every step of the way.
- Online doesn't mean you're alone – **connect with fellow students** to share ideas, organise study groups and for further support.
- **One-on-one support and assistance** from our 'study concierge' keeps you motivated and helps you reach your goals.
- Build your **professional network** through the connections you make while studying.
- Graduate with a **globally-recognised qualification** without compromising your life or career trajectory.

What you can expect from each course

Initial communication

Students can use the online forum to introduce themselves to each other and course instructors. This is where students can form 'study groups' and find information about course topics, teachers, readings, assignment key dates and grading considerations.

Learning content format

Learning materials consist of a variety of components, including video, text-based content, animations and more. Each week's content is presented and linked to learning objectives, as well as overall course goals. This provides an environment where students can monitor their progress and prepare for upcoming topics and concepts.

Synchronised study sessions

With at least one per seven-week course, these sessions bridge gaps between the content and student comprehension, and are scheduled well in advance to facilitate student planning. Times are rotated to accommodate students in multiple time zones. These sessions are also recorded and available for review purposes.

Ongoing support and re-enrolment

Each student will have a dedicated advisor to help guide and motivate you through coursework, enabling you to manage your study/work/life balance, and help keep you informed of re-enrolment for upcoming study periods. This one-on-one support continues through to graduation.

Discussion boards

The discussion boards are open throughout the duration of each course, helping to promote critical thinking and interaction. Instructors use tagging/reply features to ensure that all students get important program and course notifications. Discussions are created and moderated by the course instructor or section instructor and, depending on the course, are included in participation grades.

Assessment

While you will have no formalised on-campus exams, all RMIT postgraduate programs include rigorous assessments in the form of case studies, reports, online discussion, interaction and engagement. This ensures that all learning is valuable, authentic and applicable to your work immediately. There may be some tests, quizzes or other online assessments, however, you will not have to attend traditional on-campus examinations.

Discover RMIT online

Explore the RMIT online learning environment and get an insight into what your course and assessments will be like using Discover RMIT Online.

Sign up today

Work-connected learning

The driving force behind our Masters program is the industry connections you'll make while studying. Learn from renowned academics and industry leaders, while guided by a notable advisory board of executives.

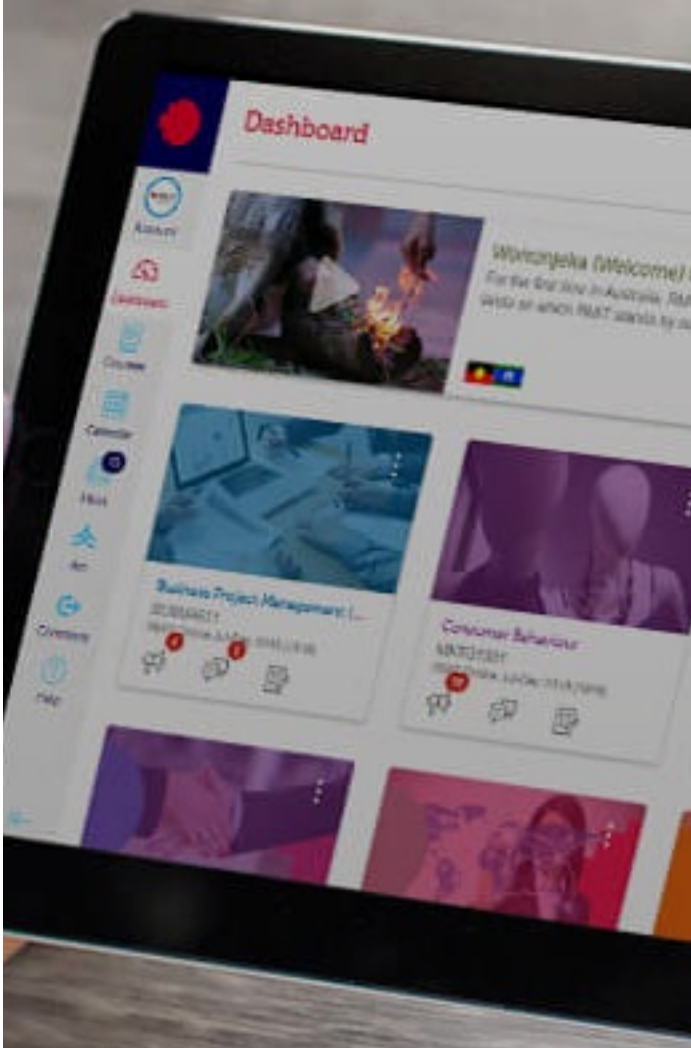
Professor Sabu John

Professor of Smart Materials & Systems

Sabu John is Professor of Smart Materials and Systems in the School of Engineering at RMIT University in Melbourne, Australia. He has a Master of Science in Advanced Applied Mechanics and a Ph.D. in Advanced Materials in Mechanical Engineering from Imperial College, London, UK. He also has a MBA from RMIT University.

He has over 180 published articles in journals (60+) and peer-reviewed conferences and has been involved in three patents, including one on the world's first Cricket bat on Active Vibration Control. His current research interests include advanced composite materials, vibration control in smart structures, embedded communication devices in composite structures, structural health monitoring of structures. He has worked on numerous funded projects in the aforementioned areas worth over A$3.25m, including nine Australian Research Council (ARC) grants. He currently lectures in Materials Engineering, Smart Materials and Structures and Strategic Manufacturing Planning. He has been on the editorial board of an Industrial Engineering Journal and has served on several University-wide committees.

The School Program Advisory Committee (PAC) comprises of industry representatives, academic staff and alumni. Membership plays an important role in the development, delivery and assessment of this program.



Program details

Fees

2023 tuition fees are $3,720^ per course, totalling $44,640^ for 12 courses.

See our fees page for further information. Fees are listed in Australian dollars and apply to 2023 only. Fees are adjusted on an annual basis; these fees should only be used as a guide.

^ Plus a capped Student Services and Amenities Fee (SSAF) based on your credit point enrolment load.

Program intakes

Six intakes annually
(January, March, May, July, August and October).

Program duration

12 courses | Two years intensive part-time.*

Each course is seven weeks in duration and requires a minimum of 15–20 hours study per week.

Nested qualifications

Our Master of Engineering (Management) encompasses courses that make up our Graduate Certificate, so should you need to exit the program early you still have earned a postgraduate qualification.

Ready to apply?

We recommend speaking with one of our Enrolment Advisors before applying for this program. Alternatively, you can apply by logging in and following the instructions in the Application Portal. To ensure you select the right program in your application, please use the below program code:

MC226KP16 - Master of Engineering (Management)

**Completion time dependent on individual study path and course availability. Please speak to a Student Advisor for more information.*

Entry requirements

To be eligible for the Master of Engineering (Management), you must have:

- An Australian Bachelor of Technology, Bachelor of Engineering Science or Bachelor of Engineering, or equivalent, in any engineering discipline, or a Bachelor of Business, or equivalent, in any business discipline, with a Grade Point Average (GPA) of equal to or greater than 2.0 out of 4.0. Applicants with a GPA less than 2.0 out of 4.0 may be considered on a case-by-case basis, with consideration given to at least two years of relevant work experience in engineering or business; **or**
- An Australian Master of Engineering, Master of Business or PhD, or equivalent, in any engineering or business discipline; **or**
- A Graduate Certificate in Business at AQF8 level or equivalent, in any business discipline;

International qualifications are assessed for comparability to Australian qualifications according to the Australian Qualifications Framework (AQF). International students are required to provide current evidence of English language proficiency for admission to RMIT University.

English language

International students are required to provide current evidence of English language proficiency for admission to RMIT University.

You can provide your results from one of these three options:

1. an accepted English language proficiency test, **or**
2. an accepted English language provider, **or**
3. a recognised Australian or international qualification.

For detailed information on English language requirements and other proficiency tests recognised by RMIT, visit English language requirements and equivalency information.

Australian student visas

RMIT's Online Master of Engineering (Management) does not meet Australian student visa requirements. For an Australian student visa, you must have an on-campus place in a program of study. For more details on RMIT's on-campus programs visit rmit.edu.au.

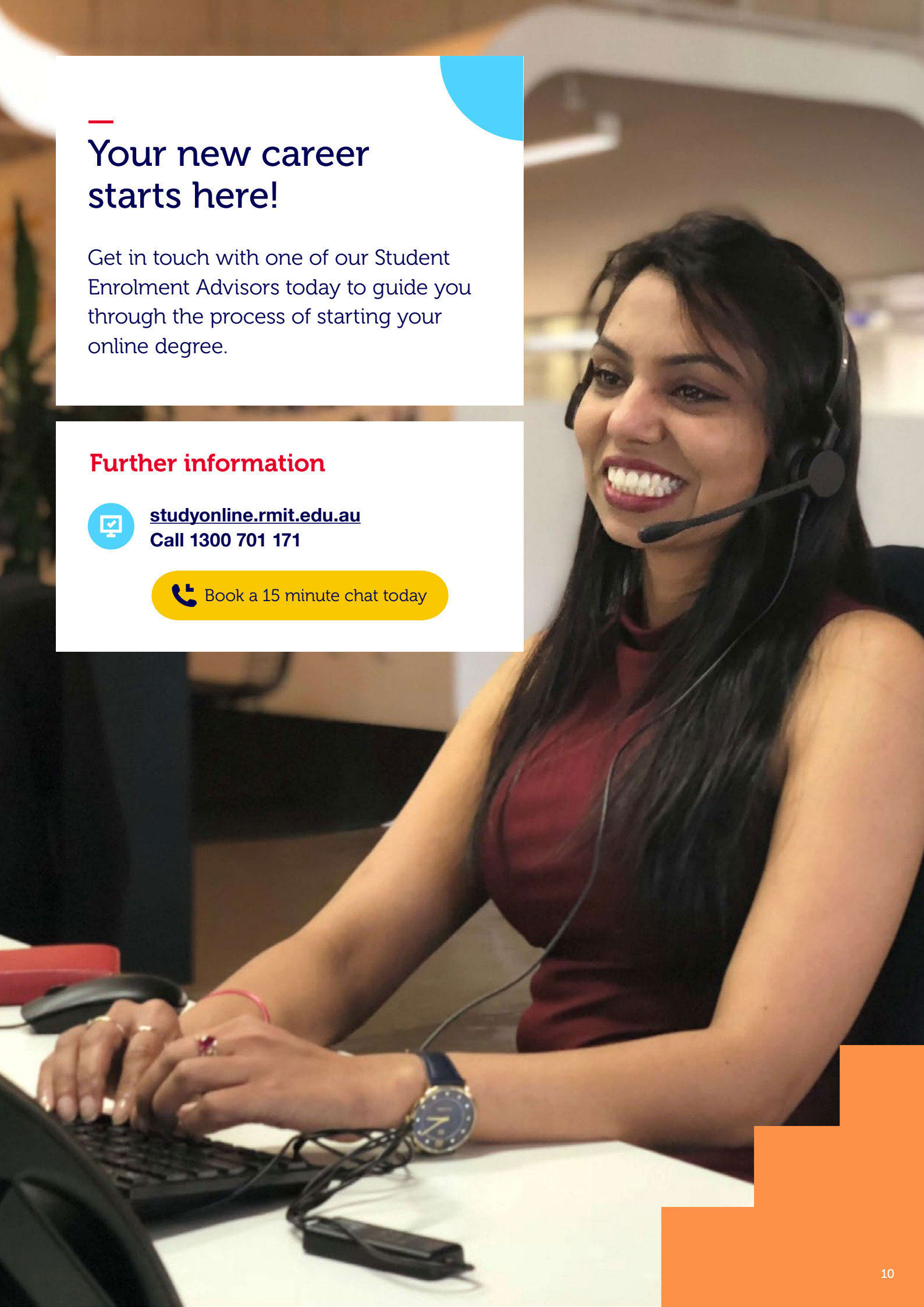
Your new career starts here!

Get in touch with one of our Student Enrolment Advisors today to guide you through the process of starting your online degree.

Further information

studyonline.rmit.edu.au
Call 1300 701 171

Book a 15 minute chat today



System Engineering Principles

Course coordinator

Professor John Mo - School of Engineering

Course overview

Learn the concepts of systems, systems thinking and systems lifecycle, all of which are necessary when dealing with complex problems. This course will examine several main systems approaches that deal with complex problems in the planning, developing and managing of engineering and technological systems.

Particular attention will be given to developing your competency in applying systems engineering approach and your understanding of the fundamental systems concepts. This will allow you to participate effectively in large-scale system design and support projects involving systems engineering activities that focus on the creation of engineering solutions.

Learning outcomes

On successful completion of this course, you will be able to:

- Apply principles of system engineering and system lifecycle approaches to analyse and design complex engineering solutions to real-life problems;
- Develop new operational capability using system engineering management approaches;
- Apply system engineering approach for development of new engineering products or improvements of in-service engineering assets;
- Analyse implications of legacy systems on technology insertion and upgrades in relation to the system as a whole; and
- Manage complex engineering projects including operations, design, sustainment and decommissioning.

Management of Technology

Course overview

Learn the analytical structure and processes of organisations concerned with developing and/or utilising technology. You will develop skills to apply this knowledge to help decision-making for shaping and accomplishing the strategic and operational objectives of the organisation.

This course will expose you to the process of planning and strategic technology management, particularly the integration of technology strategy with business strategy in the context of engineering and technological organisations, the operational aspects of managing technology including the relationship with production, marketing R&D and human resources activities and a framework for understanding current technology management issues.

You will explore—with an integrated view—the full impact of technology by effectively linking engineering, science, business and management disciplines. Through case study analysis and selected readings, you'll develop new insights leading to more effective decision-making in the practice of integrating technology strategy with business strategy in a technology-based organisation.

Learning outcomes

On successful completion of this course, you will be able to:

- Apply engineering knowledge and skills to integrate technology strategy with business strategy in an organisation from the basic research stage through to transferring to, and implementation in, industry effectively;
- Reduce time and effort in development programs, appraise risk and uncertainty more realistically and address discrepancies between operational conventions and strategic goals;
- Participate and be able to lead decision making about continued use of existing technology, introduction or development of new technology and commercialisation of technology;
- Offer guidance for developing competencies in technology development management in a performance-demanding technical organisation;

- Explain the role of a technology audit, technology transfer and global technology strategies in developing a technology strategy, including in a wider business context;
- Describe the key concepts and principles underpinning technology management, the broad innovation process, R&D management, product and process development, concurrent engineering and technology protection processes in managing technology projects; and
- Integrate technology strategies and operations within an organisation including the: technology-production interface, technology-marketing interface and organisational issues.

Building Quality Organisations

Course overview

This course introduces the general principles of quality management in an engineering and technology-based environment. Specific emphasis is placed on the application of organisational theory and practice, human resource management strategies and an appreciation of the many approaches available to implement quality management and continuous improvement in organisations.

Learning outcomes

On successful completion of this course, you will be able to:

- Identify key influences of an organisational structure and utilise this to improve quality;
- Apply human resource management concepts to HR planning, job analysis and design, recruitment and skills training; and
- Select, develop and promote strategic quality management systems to support continuous improvement practices.

Sustainable Engineering Systems and Environment

Course overview

Learn the essential principles and concepts of applying information technology in industrial settings for the purpose of cleaner production, ecologically sustainable industrial development.

Apply systems thinking and systems lifecycle approaches towards defining and solving complex, real-world problems in the planning, developing and managing of engineering and technology-based environments. You will focus on the value of developing strategically focused corporate IT policies and examine corporate issues of introducing corporate environmental policies.

Learning outcomes

On successful completion of this course, you will be able to:

- Apply a systems approach to problem definition of sustainable industrial systems, cleaner production and ecologically responsible organisations;
- Investigate and consolidate ideas on the application of new sustainable technologies to satisfy legal, social and economic requirements of industrial systems in their operating environment;
- Apply recent developments in strategic planning and strategic management practice in the application and management of modern technology based information and communication systems;
- Design and evaluate the effectiveness and impacts of technology development strategies against the goals of sustainable environment; and
- Participate and contribute to the development of policies in technological development for the application of environmental management systems such as cleaner production monitoring.

Integrated Logistics Support Management

Course overview

Understand how a systems approach can be used to solve logistics problems and integrate logistics function with other management functions in an engineering-oriented organisation. In this course, you will explore concepts in integrated logistics support, system design and analysis of logistics systems, development of logistic support, and its requirement analysis and equipment supportability.

You will develop skills in data collection from a variety of logistics activities and points of operation, personnel organisation and communication system.

Learning outcomes

On successful completion of this course, you will be able to:

- Apply fundamentals of logistics engineering, design supportability criteria, support infrastructures and physical support resources for the management of logistics support function;
- Apply theory and practice of availability, reliability and maintainability analysis in the design of integrated logistics support systems to improve supportability;
- Analyse and quantify risks in logistics support using mathematical techniques and develop approaches to mitigation of the analysis outcomes; and
- Identify and analyse, within the content of the logistics support system, all functions such as material flows, distribution, manpower and personnel, training and training devices, and the sustaining of lifecycle maintenance, operation and support for the development of improvement plan.

Risk Management and Feasibility

Course overview

Analyse risk and the effect of technology on the management of risk. This course will enable you to develop your ability to use a systematic and reasonably consistent method of deciding actions on the risks a system needs to handle.

You will learn to identify, accept and prioritise risks within the constraints of a system. You will explore key aspects of risk management and integrate with the concept of feasibility in engineering projects and business development. You will examine project feasibility in three directions: market feasibility, financial feasibility and technical feasibility. These three directions set the systematic process in which all key risks in a project can be identified and treated prior to any detrimental event happens.

Learning outcomes

On successful completion of this course, you will be able to:

- Identify risks in engineering and project management and strategic decision-making;
- Apply the basic concepts and techniques of evaluating reliability and assessing risk;
- Design, develop and implement a systems approach to identify business opportunities and risks of engineering projects and to develop strategies and plans to investigate, analyse and synthesise complex information, problems, concepts and theories for achieving the desired outcomes;
- Analyse and manage risks in an engineering project and technology-focused business environment and develop a plan of mitigation. Establish principles from concepts and develop standard processes for sustainable management;
- Manage risk in technologically intensive organisations including those with an ever-changing technology base; and
- Adopt and elaborate innovative ideas and incorporate these into management processes.

Engineering Economic Strategy

Course overview

Gain the foundational knowledge of corporate strategic planning for enterprises and organisations that have a significant engineering and technology base.

Throughout this course, you will develop strategies enabling your engineering organisation to compete in the national and global marketplace. You will investigate market mechanisms within national and international economies in which modern industrial enterprises operate, and the impacts that they have on individual firms competing in national and global markets.

You will also examine the effective integration of economic and corporate aspects of strategic planning, policy influence and study cases?which are especially relevant to engineering and technology-based enterprises and organisations.

Learning outcomes

On successful completion of this course, you will be able to:

- Analyse a technology-based organisation or enterprise company in terms of its internal and external economic environment and associated processes;
- Analyse factors that influence national and international economic policy and development and assess their impact on an individual firm;
- Develop strategies that relate various marketplace mechanisms and economic systems to the successful operations of industrial organisations, which are appropriate for the organisation and the markets and economies in which they operate; and
- Prepare sound arguments to improve national and international policies of research and development in the strategic interest of an engineering and technology-based enterprise or organisation.

International Engineering Management

Course overview

Explore the implication of policy issues related to a firm's strategy, organisational structure, manufacturing, materials management, marketing, R&D, human relations and financial management that arise in an international engineering and technological organisation.

You will study these impacts together with the consideration of external influences due to economic, political and cultural environment in which the management of engineering companies working across country boundaries takes place.

Through case study analysis and idea sharing, you will also develop new insights and methods leading to more effective strategic decision-making in the practice of international management in a technological organisation.

Learning outcomes

On successful completion of this course, you will be able to:

- Establish your theory on how globalisation of the world economy and the continually changing nature of international trade affects nearly every aspect of business decision-making in technological firms;
- Explain the differences between the operation of domestic and international firms, especially in relation to the complex competitive nature of global markets;
- Integrate effectively the engineering and technical skills that exist in different parts and locations within an international organisation;
- Apply your knowledge in relation to issues affecting international operations of their firm to strategic decision making and tactical problem-solving process;
- Demonstrate your knowledge and capability in the internationalisation process and be better prepared for personal involvement including the possibility of an overseas posting; and
- Develop proposals and compile recommendation reports on internationalisation issues in different forms including individual work initiatives, market research analysis and presentation.

Performance Management Foundations

Course overview

Develop the skills required to analyse data captured from engineering enterprises and systems. This course will introduce you to key planning and control mechanisms for effective outcome and performance management, as well as the general principles and methodologies of data analysis and statistics, which form the basis for modelling of engineering systems.

You will work on sample models that will help you to realise the causal relationships of different operating parameters. Furthermore, you'll develop skills in data analysis fundamentals, regression analysis, data mining, forecasting, discriminant analysis, simulation and queuing analysis, project control, decision support management tools—some of which will be developed on spreadsheets.

Learning outcomes

On successful completion of this course, you will be able to:

- Perform a thorough data analysis of the performance data set and summarise the findings;
- Recognise situations and apply the appropriate forecasting models to represent the trend of the business;
- Fit some parts of the data set to a regression analysis model and interpret the implication of the model in terms of the enterprise's past and future performance;
- Define and apply the Monte Carlo technique to a number of different business modelling situations;
- Restructure the provided data set into different interpretable modelling frameworks;
- Apply decision-making techniques to the different forms of data models and investigate 'what-if' scenarios;
- Create innovative solutions to solve problems recognised in the 'what-if' scenarios; and
- Apply theories of mathematics and statistics to consolidate the provided data to an indicative decision support data structure, then apply decision-making techniques.

Project Management

Course overview

Understand the concept of customer-driven project management through the design and development of project proposals, based on actual case studies and public tenders.

By exploring the requirements and expectations of the case studies and tenders, you will develop specific skills in initiating and controlling project management systems and exploring related commercial business strategies. Furthermore, you will develop the knowledge, skills and understanding necessary to manage projects including project planning, project control, project lifecycle, organisational behaviour and systems, and procedures of project management practices.

Learning outcomes

On successful completion of this course, you will be able to:

- Apply different stages of a project, lifecycle costing, project design concepts, structures and environments through reviewing contemporary case study projects;
- Integrate systems engineering processes and project management practices to critically assess and evaluate project designs by using proposal/expression of interest case studies;
- Identify project management tools and techniques and develop project proposals in response to client project briefing documents; and
- Apply a robust project risk identification, assessment and treatment process to ensure success of the project.

Master's Research Project: Part 1

Course overview

Consolidate and expand the knowledge gained throughout the Master's program through an in-depth experimental and/or analytical study of a highly technical and/or engineering management application.

In this course, you will plan your research project, conduct a critical analysis of relevant literature, undertake research work to a high-level standard of professional engineers and researchers, evaluate and report your research findings.

This project is completed in the companion course Master's Research Project Part 2. Both courses constitute the major experimental and/or analytical research project for the program and engage you in achieving the objectives of a research project investigated and formulated in research.

Learning outcomes

On successful completion of this course, you will be able to:

- Plan an independent research project at an advanced professional engineering level;
- Locate and critically analyse scientific literature and use this to inform the planning and management of a research project;
- Apply sound engineering practices and research methods to undertake project work; and
- Communicate the context, goals and risks and progress of a research project to a professional audience.

Master's Research Project: Part 2

Course overview

Manage and complete the research project you commenced in Part 1 of this two-part course. You will conduct a critical analysis of relevant literature, undertake research to a high professional standard, and synthesise and report your findings.

This course is designed to consolidate and expand the knowledge gained throughout the program through an in-depth experimental and/or analytical study of a highly technical engineering management application.

This course is to be undertaken in the final stages of your Master's degree, in conjunction with the Master's Research Project: Part 1 course.

Learning outcomes

On successful completion of this course, you will be able to:

- Manage an independent research project at an advanced professional engineering level;
- Locate and critically analyse scientific literature and use this to inform the conduct and findings of a research project;
- Apply sound engineering practices and research methods to undertake project work and synthesise results; and
- Communicate the outcomes, impact and limitations of a research project to a professional audience.

Where we rank

As one of Australia's original tertiary institutions, RMIT University prides itself on being a world leader in education, earning its international reputation for creating exceptional, employable and highly skilled graduates.

Five-star QS ranking for excellence in higher education

37th in the world for the international profile of academic staff*

In the top 15 universities in Australia*

Top 10 in Australia for employer reputation*

** 2017–18 QS World University Rankings*

RMIT has been known as the pioneer in engineering for several decades. With their globally-recognised, industry-experienced staff, it proved to be the right choice for me, providing a well-rounded experience.

Shashank Banerjee
student in Master of Engineering (Management)

RMIT Online

Further information

studyonline.rmit.edu.au
Call 1300 701 171

Book a 15 minute chat today

Every effort has been made to ensure the information contained in this publication is accurate and current at the date of publishing. For the most up-to-date information, please refer to the RMIT University website before lodging your application.

Prepared November 2022.

RMIT University CRICOS

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