



ROLLING STOCK ENGINEERING CONNECT: UOW

The rail industry worldwide is faced with increasing demand in both passenger and freight services. The amount of freight carried by rail is increasing, with the overall freight task in Australia expected to double by 2020. With the increase in fuel prices and environmental concerns, passenger rail travel is also growing. The rail industry is faced with an additional, greater challenge; the current workforce is ageing and there is a shortage of skilled rolling stock engineers to take up the challenge of moving rail forward and into the future.

WHY STUDY ROLLING STOCK ENGINEERING AT UNIVERSITY?

The Rolling Stock Engineering program has been developed as a cooperative project between the University of Wollongong, Rail Innovation Australia and the Rail Industry to address the shortage of skilled rolling stock engineers. These courses are specifically designed to meet industry needs, by providing structured learning and development and providing knowledge and experience difficult to gain through workplace training programs. They have been developed and are delivered by industry professionals who are experts in their field, ensuring you will receive cutting edge, industry-specific education. The courses take a problem-based approach to learning and are focused on the technologies and challenges faced by rolling stock engineers. The course is overseen by a steering committee of industry experts who regularly review the program.

MARTIN CAMP

Executive General Manager Engineering and Manufacturing

To support the ongoing technical development of our engineering graduates, Downer Rail was very pleased to ascertain that UOW was offering postgraduate coursework in Rolling Stock Engineering specific to our industry that could be undertaken through distance study. In 2008 we encouraged participants of our Graduate Development Program to commence study with UOW towards their Graduate Certificate in Rolling Stock Engineering, with the

option of a Master degree to follow. Take up by our graduates was strong and the support offered to our students by UOW was professional. We are proud that all our students successfully achieved their Graduate Certificate and some have subsequently opted to continue on towards their Master degree. Based on the success of the previous year, in 2009 we encouraged our new engineering graduates to commence study towards this qualification. We feel the knowledge gained by those studying these courses to be invaluable in providing them with greater insight into the rail engineering industry and an ability to better contribute to our business. We firmly believe that this course is fundamental in supporting the continued development of skilled rail engineers within the rail industry and will ensure a higher level of expertise is maintained over the coming years enabling the continued success of both Downer and the Australian rail industry.

WHERE IT CAN TAKE YOU

These courses are designed to provide further education for engineering graduates interested in pursuing a career as a rolling stock engineer involved in the design, construction, operation and maintenance sectors. These programs accelerate the career development process and produce graduates with the capabilities to practice as valuable members in a broad range of rail organisations. Career opportunities exist in consulting; specialist suppliers; design and manufacturing; owner-operator and maintenance organisations within the rail industry. Our graduates are working in the rail industry for companies such as Downer, RailCorp, Bombardier, United Group Rail, WorleyParsons, Interfleet Technology, QR Limited, ARG, Department of Transport Victoria, Transadelaide and VLine.

MODES OF DELIVERY

The courses are delivered via distance, with a combination of online materials and support along with face to face workshops. The optional face to face workshops have proved to be an invaluable opportunity for networking amongst peers and experts in the field, and facilitate team work and interaction. The online materials enable students to study at a time that best suits them. The online discussion forums provide an opportunity for further interaction, feedback and continued support. This style of delivery suits professionals looking to increase or enhance their skills whilst working full time. The University of Wollongong has had experience in delivering similar courses internationally and expressions of interest are welcome.

WHAT WILL YOU STUDY?

This course enables practitioners to develop specialist knowledge and application of engineering principles to the specification, design, manufacture and maintenance of rolling stock and rolling stock systems. The key areas covered (traction, vehicle design, safety and braking systems, dynamics and bogies) are supported by subjects on rolling stock environment and the design, construction and maintenance of rolling stock as an overall system.

The Master of Rolling Stock Engineering can be completed over a period of two years. The subjects that you will study include:

- ENGG924 Railway & Rolling Stock Environment
- ENGG925 Rail Motive Power
- ENGG926 Rail Vehicle Design
- ENGG927 Rolling Stock Safety & Braking Systems
- ENGG928 Rolling Stock Dynamics and Bogies
- ENGG929 Rolling Stock Design Construction & Maintenance
- ENGG940 Dissertation in rolling stock engineering (equivalent to two subjects).

A Graduate Certificate in Rolling Stock Engineering is also available and requires the completion of four of the following subjects:

- ENGG924 Railway & Rolling Stock Environment
- ENGG925 Rail Motive Power
- ENGG926 Rail Vehicle Design
- ENGG927 Rolling Stock Safety & Braking Systems
- ENGG928 Rolling Stock Dynamics and Bogies

For detailed subject descriptions, please refer to our website.



ARUNI ARACHCHIGE

GRADUATE CERTIFICATE IN ROLLING STOCK ENGINEERING

UOW's Rolling Stock Engineering course is recognised as an essential course in the rolling stock engineering sector. After joining QR in 2007 as an electrical engineer, I wanted to expand my

knowledge and experience in rolling stock engineering. UOW is the only University in Australia to offer courses in rolling stock engineering. It suited me perfectly that the courses were offered via distance as I work full-time in Queensland and have three young children.

The workshops were an invaluable experience and I learnt a lot from industry professionals who were experts in their field. I also had the chance to meet and network with rolling stock experts, which I normally wouldn't have had the opportunity to do. I was very pleased with the academic staff who conducted the course; they were always available and promptly replied to student enquiries. Assignments were marked promptly and they always provided feedback which was very helpful and I could even apply their feedback to my work at QR. I have learnt and experienced so much throughout this course and it has provided me with the opportunity to expand my social and professional network. I really enjoyed the team work assignments and learnt effective teamwork can be achieved through communication, time management and dedication, even when there's no face to face contact. I really enjoyed the online discussion forum and it was not only helpful to exchange study ideas and suggestions with my peers but also provided me with some unexpected ideas that I could use at work. I would recommend this course to any rolling stock engineer who would like to expand their knowledge and experience. It is a very valuable course and I believe the knowledge you gain from this course is not possible to gain through work experience.

ENTRY REQUIREMENTS

A Bachelor degree in engineering from a recognised tertiary institution. Applicants without a Bachelor degree in engineering may be considered based on other tertiary qualifications together with relevant work experience.

Most enrolled students are already employed in the rail industry; however a support program for those wishing to enter the rail industry is available and applications are encouraged.

STARTING DATES

February (Autumn session) or July (Spring session)

FEES

For a full list of fees please refer to the following website: www.uow.edu.au/eng/flexibledelivery/rollingstockengineering/UOW064413.html

HOW TO APPLY

Please visit the following website for detailed information on how to apply: www.uow.edu.au/future/postgrad/apply/coursework

WANT MORE INFORMATION?

For more detailed information please visit our website: www.uow.edu.au/eng/flexibledelivery/engineeringassetmanagement