

MSc, PGDip, PGCert

Railway Systems Engineering and Integration



The complex nature of railways requires a systems approach to the integration of advanced technologies and to the design of operations.

Professor Felix Schmid, Programme Director,

School of Civil Engineering, University of Birmingham

MSc, PGDip, PGCert Railway Systems Engineering and Integration

Established in 1995, and constantly evolving to remain relevant for the 21st Century, this programme offers a gold standard in railway systems engineering. Many graduates now occupy senior positions around the world in the railway industry.

Programme overview

Students of this programme gain a thorough understanding of the principles involved in developing, designing and operating modern railway systems; and a deep understanding of the issues involved in managing the interface between existing and new railway systems.

Topics studied include strategic management, rolling stock systems, traction, infrastructure, control systems, economics and human factors, all of which link together to provide knowledge and education of the full railway system.

Lectures, workshops, tutorials and team-based exercises are provided in collaboration by world-leading researchers and industrial supporters. This ensures the very latest and most relevant content is provided, and offers opportunities for students to become familiar with the wider railway engineering industry.

Pathways

This programme is available to study to Postgraduate Certificate (5 modules, encompassing the core of the programme), Postgraduate Diploma (8 modules) and the full MSc, which includes a research project. This project may be taken at the University or in industry, according to the preference of the student and any industrial sponsor.

Study is possible full-time, part-time (for UK-based students only), or on a distance learning basis. Distance learning students will attend only for the taught elements, and will usually take 2-3 years to complete the full MSc.

The course is taught in intensive, week-long blocks so it is possible to combine work and part-time or distance-learning study from anywhere in the world. By way of extra flexibility, individual modules may be taken as Continuous Professional Development.

Who should attend

This programme is aimed at practising railway engineers and managers from a range of disciplines and functional specialisations. However, it is applicable also to new entrants to the industry, whether these are experienced professionals from other fields or new graduates,



as the course will allow these students to familiarise themselves with the specialist disciplines involved in railway systems while gaining a strong understanding of the complex interactions between each subsystem.

Entry requirements

A good honours degree in a numerate discipline, such as engineering, physics, mathematics or economics. Most candidates will have at least 2-3 years of relevant experience in the railway industry; pre-course placements may be possible for recent graduates. Relevant experience in industry will also be taken into account when considering applications.

Learn more

Mrs Joy Grey
Programme Administrator
University of Birmingham
T: +44 (0) 121 414 4342
E: j.grey@bham.ac.uk

Professor Felix Schmid
Programme Director
University of Birmingham
T: +44 (0) 121 414 5138
E: f.schmid@bham.ac.uk

www.birmingham.ac.uk/mscrailway