THE ROYAL INSTITUTION OF NAVAL ARCHITECTS

Guidance on the Accreditation of Academic Courses

INTRODUCTION

Courses which meet the academic requirements for Corporate membership (MRINA or FRINA) may be accredited by the Institution. Graduates of accredited courses are not required to provide evidence that their academic qualification meets the requirements for membership.

ACCREDITATION

Accreditation is carried out through examination of documentary evidence by panel of a minimum of two senior members who are trained Accreditors. The Accreditation Panel does not require to visit the university or college, providing the facilities have been viewed by a senior member of the Institution or Secretariat.

Accreditation of courses is free, but universities and colleges may be required to cover or contribute to the cost of the visit.

Accreditation of courses is normally valid for 5 years. Where a new course has not completed a full cycle, accreditation may be provisional. Accreditation may also be dependent on satisfactory completion of conditions identified in the post accreditation Report. The Report may also contain recommendations for improvements to the course.

ACCREDITATION REQUIREMENTS

Courses which meet the minimum outcome criteria may be accredited as meeting the academic requirement for Corporate membership (MRINA or FRINA). The outcome criteria are defined in the Annexes .

Details of documentation required will be provided after written application for accreditation.

ADVICE AND ASSISTANCE

Further information on the accreditation of courses by the Royal Institution of Naval Architects may be obtained from the Professional Affairs Department at profaffairs@rina.org.uk

ANNEX

Minimum outcome criteria for accreditation

(Rev Oct 2016)

Annex - Minimum Outcome Criteria for Accreditation

Science and mathematics

Engineering is underpinned by science and mathematics, and other associated disciplines.

Graduates will need:

• Knowledge and understanding of the scientific principles underpinning relevant current technologies, and their evolution
• Knowledge and understanding of mathematics and an awareness of statistical methods necessary to support application of key engineering principles.

Engineering analysis

Engineering analysis involves the application of engineering concepts and tools to the solution of engineering problems.

Graduates will need:

• Ability to monitor, interpret and apply the results of analysis and modelling in
• Ability to apply quantitative methods in order to understand the performance of systems and components
• Ability to use the results of engineering analysis to solve engineering problems and to recommend appropriate action
• Ability to apply an integrated or systems approach to engineering problems through know-how of the relevant technologies and their application.

Design

Design is the creation and development of an economically viable product, process or system to meet a defined need. It involves technical and intellectual challenges and can be used to integrate all engineering understanding, knowledge and skills to the solution of real problems.

Graduates will need the knowledge, understanding and skills to:

• Be aware of business, customer and user needs, including considerations such as the wider engineering context, public perception and aesthetics
• Define the problem, identifying any constraints including environmental and sustainability limitations; ethical, health, safety, security and risk issues; intellectual property; codes of practice and standards
• Work with information that may be incomplete or uncertain and be aware that this may affect the design
• Apply problem-solving skills, technical knowledge and understanding to create or adapt design solutions that are fit for purpose including operation, maintenance, reliability etc
• Manage the design process, including cost drivers, and evaluate outcomes
• Communicate their work to technical and non-technical audiences.

Economic, legal, social, ethical and environmental context

Engineering activity can have impacts on the environment, on commerce, on society and on individuals. Graduates therefore need the skills to manage their activities and to be aware of the various legal and ethical constraints under which they are expected to operate, including:

- Understanding of the need for a high level of professional and ethical conduct in engineering and a knowledge of professional codes of conduct
- Knowledge and understanding of the commercial, economic and social context of engineering processes
- Knowledge of management techniques that may be used to achieve engineering objectives
- Understanding of the requirement for engineering activities to promote sustainable development
- Awareness of relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues
- Awareness of risk issues, including health & safety, environmental and commercial risk.

Engineering practice

This is the practical application of engineering skills, combining theory and experience, and use of other relevant knowledge and skills. This should include:

- Knowledge of contexts in which engineering knowledge can be applied (eg operations and management, application and development of technology, etc)
- Understanding of and ability to use relevant materials, equipment, tools, processes, or products
- Knowledge and understanding of workshop and laboratory practice
- Ability to use and apply information from technical literature
- Ability to use appropriate codes of practice and industry standards
- Awareness of quality issues and their application to continuous improvement
- Awareness of team roles and the ability to work as a member of an engineering team.

Additional general skills

Graduates must have developed transferable skills, additional to those set out in the other learning outcomes, that will be of value in a wide range of situations, including the ability to:

- Apply their skills in problem solving, communication, information retrieval, working with others and the effective use of general IT facilities
- Plan self-learning and improve performance, as the foundation for lifelong learning/CPD
- Plan and carry out a personal programme of work
- Exercise personal responsibility, which may be as a team member.