ACCREDITED BY RACS
Royal Australasian College of Surgeons

THE UNIVERSITY of ADELAIDE

Master of Surgical Science 2015

The Master of Surgical Science is designed to provide a professional qualification for those wanting to enhance their research and scientific skills and who are embarking on a career in surgery. In particular, the aim of the program is to give candidates a solid grounding in the academic side of surgery with emphasis on developing the skills of writing, research, attracting funding and promoting scholarly activity.

There is a clinical, coursework and research component to the Masters and it is delivered through weekly lectures and tutorials around fulltime clinical commitments. Students can study full-time over one year or part-time over two years.

Research Projects provided:
There is a list of surgical research projects available with a supervisor. Students may choose one of these or present their own.

RACS Accreditation:
Formal accreditation with the Royal Australasian College of Surgeons (RACS) has been approved. (http://www.surgeons.org/education-training-providers/course-cpd-accreditation/course-accreditation/accredited-courses/)

FEE-HELP: The University of Adelaide offers FEE-HELP to assist students with paying their tuition fees. The FEE-HELP loan allows students to borrow from the Commonwealth, up to the FEE-HELP limit, to cover some or all of their tuition fees. For more information on FEE-HELP: http://www.adelaide.edu.au/student/finance/assistance/help/fee/

Full-time or Part-time study options:
The program is now available over one year as full-time study or over two years as part-time study.

Academic prizes: The Master of Surgical Science Academic Prize rewards up to four successful applicants with a contribution of $10,000 towards their tuition fees.

Outline of program:
This program is taught at The Queen Elizabeth Hospital and Royal Adelaide Hospital, Adelaide and comprises:

- Lectures and tutorials
- Practical clinical teaching sessions
- The completion of a research project and production of a research publication which is deemed suitable for submission to a peer reviewed journal

and the course is delivered around full time clinical commitments.

Learning Objectives:

1. Identify and describe the key principles of surgery.
2. Demonstrate and apply the key aspects of surgical thinking and decision making.
3. Discuss and apply the ethics of surgery in both clinical and research settings.
4. Explain the relationship and association of molecular biology, surgical immunology and infectious diseases as related to surgery.
5. Acquire an understanding of the principles of oncology and radiation oncology.
6. Learn the basics of design, ergonomics and materials technology as applied to surgery.

7. Appreciate the use of medical imaging
8. Plan, design and implement a research proposal.
9. Demonstrate an understanding of research methodology and techniques, and the ability to determine the correct methods and techniques required.
10. Employ skills in the use of computing and statistics applied to surgery.
11. Retrieve information from scientific papers and/or databases and perform data-analysis to formulate an answer to a specific research question.
12. Critically evaluate scientific literature and formulate an overview of a topic that is assessed by its merits in a logical balanced discussion.
13. Produce a research paper suitable for publication in a peer reviewed journal.
14. Present research work to a group of peers and colleagues and answer questions relating to this research.

Courses:

Surgical Science – Theory and Principles I

The course will provide students' with a theoretical and practical understanding of the history of surgery and the integration of surgery and science. The course addresses a range of topics and technologies to consolidate and deepen the student's knowledge of the relevant anatomy, pathophysiology and internal medicine as related to surgery. It will provide an introduction to a more scientific approach to the study of surgery from a clinical, developmental and evolutionary perspective. It will focus on the physiological changes and the immunological ramifications of surgery; and the course will also look at the issues surrounding tumour biology and genetics and the appropriate use of surgical techniques in its management. In addition the course provides an insight into the complex processes that underlie surgical care in acute hospitals with seminars exploring teamwork, decision making and safe practice.

Surgical Science – Theory and Principles II

The course will follow from Surgical Science – Theory and Principles 1 and will further address key issues in the application of surgery. It will provide teaching on the implications and causes for surgery including wound care and healing, infection control and pain. It will present the current cellular and molecular knowledge for common diseases including how this knowledge has impacted on diagnosis and current treatment options. It will also provide an overview of radiological imaging in the surgical patient and the use of simulation in surgical training. The course will also include consideration of the development of materials and prosthetics for implantation into patients. Finally the course will investigate the current innovations in surgery, including robotic and laparoscopic surgery and their principles and practice.

Surgical Science and Clinical Practice I

The course will provide comprehensive clinical training to a high level of competency in surgical thinking, techniques and practice. It will extend students beyond acquisition of essential knowledge and skills to also develop the scholarly skills of reflection and critical thinking essential for independent clinical practice.

Surgical Science and Clinical Practice II

This course builds from the experience students received from Surgical Science and Clinical Practice 1 and provides further comprehensive clinical training, with emphasis on quality assurance practices, clinical handover, clinical leadership and quaity of life issues.

Surgical Science – Research and Development I & II

This course, run over over one or two years, encourages students to carry out their own research into relevant topics in surgery. Students will complete a research proposal for a given research project before having hands-on experience completing the individual scientific research project, supervised by senior surgical clinicians. Students will be able to consolidate this experience and knowledge with the preparation of a paper suitable for publication in a peer reviewed journal. Students will learn how to appraise relevant scientific literature and to summarise review findings based on logical argument and evidence based medicine.

Eligibility

In order to be eligible for acceptance into this program, applicants must meet the following criteria:

Professional requirements:

- Applicants will have a Bachelor of Medicine, Bachelor of Surgery (MBBS), or equivalent
- Applicants should be eligible to hold full AHPRA registration
- Applicants should be employed as a resident medical officer or registrar in an Australian public hospital, achieved a satisfactory interview, obtained satisfactory references, and approval by Program Director or their nominee
- Applicants should be able to attend weekly tutorials in Adelaide

For more information please contact:

Program Director, Professor Guy Maddern at guy.maddern@adelaide.edu.au or
Program Coordinator, A/Professor George Kiroff at george.kiroff@adelaide.edu.au