



Surgical Sciences Intensive Course (SSIC)

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Course outline

Revised 2024

heti.nsw.gov.au



HETI'S VISION AND PURPOSE

VISION

To be the first-choice partner for Education and Training in NSW Health

PURPOSE

We educate for better health outcomes

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Table of content

BACKGROUND TO THE REVISED MODEL

HOW THE SSIC WORKS **Enrolment Process** Key Features

SSIC OVERVIEW

Who is the course designed for?

How is the course being delivered?

Is there a cost?

Course Requirements

Sustainability

Evaluation

Learning Outcomes

Course is considered completed when

Course Completion

SSIC PROGRAM OF DELIVERY

ON-LINE ANATOMY LIBRARY

VIRTUAL ANATOMICAL REGIONS HAND

L OF DELIVERY FOR THE SSIC	2
	4
	4
	4
	5
	5
	5
	5
	5
	6
	6
	6
	7
	7
	8
	12
OS-ON ANATOMY WORKSHOP	13



Background to the revised model of delivery for the SSIC

The original SSIC was a course designed to assist surgical trainees achieve success in the Royal Australasian College of Surgeons (RACS) General Surgical Science Examination (GSSE). The course comprised a 10 day face-to-face intensive lecture series in Anatomy, Physiology and Pathology, complemented by intensive anatomy tutorials using cadaveric specimens in a laboratory setting.

The course was conducted in January each year, immediately prior to the RACS annual offering of the Generic Surgical Science Examination each February. The course was a successful collaboration between the Health Education and Training Institute and Western Sydney University and ran from 2010 until 2017.

The original SSIC was cancelled in 2018 due to a decline in registration numbers. This decline was due to a number of factors, including the difficulties experienced by surgical trainees getting approval for 10 days of leave to attend the SSIC, given the timing of the leave (last three weeks of final terms) and the potential significant impacts on service delivery.

Representatives of the Clinical Surgical Training Council Trainee Subcommittee (n=60) were surveyed to determine what resources and existing courses trainees were utilising to support their examination preparation activities for the RACS GSSE. The survey also asked whether trainees perceived value in HETI developing or facilitating examination preparation resources. Of the 32 respondents to the survey, 22 indicated they would value both the development of online resources and weekend anatomy tutorials while 26 indicated they would value practice examination papers.

In April 2020, Dr Claire Blizard, Medical Director HETI approved formation of a Subject Matter Expert (SME) group to review the SSIC. Membership of the SME group included:

Professor Robert Rae – Original SSIC Course Coordinator

Professor David Storey - Network Director, Sydney South West Surgical Skills Network

- Professor Kerin Fielding Clinical Chair, Clinical Surgical Training Council (CSTC)
- Professor John Morley Dean of Anatomy, Western Sydney University
- Dr Sarah Whereat Education Support Officer, Sydney South West Surgical Skills Network
- Dr Lucy Hanlon Surgical Trainee, Sydney South West Surgical Skills Network
- The primary functions of the SME group were:
- Provision of strategic direction for the future delivery and administration of the SSIC, aligning with work undertaken by the Health Education and Training Institute (HETI) as appropriate.
- Oversight for the development of a clinically relevant education plan for the SSIC to support trainees attempting the Royal Australasian College of Surgeons GSSE.
- Oversight of the drafting of an options paper with recommendations for a revised education methodology for the SSIC. This included development of a model of delivery that will be sustainable into the future, an indicative budget for development of that model of delivery, as well as opportunities for cross-specialty participation in the SSIC where appropriate.

In September 2020, Adjunct Professor Annette Solman, HETI Chief Executive approved the SME group's recommendation for full development of a blended delivery methodology for the SSIC which comprises a series of online didactic lecture videos, a library of anatomy demonstration videos and a oneday weekend workshop with SMEs to explore more complex anatomical regions.

For eight months from September 2020 to April 2021, SME faculty recorded the didactic lecture series with the HETI Team, working with a professional videography team to capture the anatomy library. A pilot of the course was launched in July 2021. Following evaluation of the Pilot, the SSIC was implemented in 2022 and is now in its fourth year of delivery.

How the SSIC works

SSIC Overview

Who is the course

Enrolment Process

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Activity	Date	Actions and/or expectations	designed for?	interest in surgery.
Registrations open Registrations close	28 February 2024 15 April 2024	Candidates register and pay for the course.	How is the course being delivered?	The course will be delivered via the Platform.
		HETI places approved		The course will include:
Course Information	From	participants into the course		Entry and Exit examinations
	16 April 2024	HETI sends course		On-line didactic lecture sessions
		documentation pack		On-line library of Anatomy resou
Course Commences	22 May 2024 25 May 2024	Orientation to the course Entrance Examination		 Virtual Anatomy Workshop – to b University of Newcastle – 7 and 8
			Is there a cost?	Yes \$995. The course is being condu- basis. Participants are being charge and analysis of entry and exit exami anatomy weekend workshop (includ specimens, technical staff and SME
Key features			Course	TECHNOLOGY
 Course extends over a 16-week period from 22 May 2024 to 14 September 2024 			requirements	Computer/ laptop
Participants will be r	required to complete an	Entry Examination (Week		Audio (computer speakers or heat
0) and an Exit Exami	nation (Week 16). The E	ntry Examination will		• Webcam
measure baseline kn	iowledge at the comme uisition and retention fol	ncement of the course		Microphone
course.				Fast and reliable internet connect
• Content is a library o	of 71 videos recorded wi	th subject matter experts		LOCATION
in anatomy, patholog	gy and physiology.			A quiet space to work without dis
 Videos include a dida demonstrations (24) 	actic lecture series (47 v videos).	videos) and anatomy		
 Every three weeks during the course, participants will have a "content free" week – a chance to catch up if required. During this week, participants will receive exam practice questions and answers – facilitating self-reflection on individual responses. 			Sustainability	Our approach to sustainability span of our products, services, staff and t to this philosophy, the SSIC is delive principles; using digital resources o

 Week 15 will feature a virtual weekend Anatomy workshop to explore those more complex anatomical regions.

The SSIC has been developed for trainees with an

HETI My Health Learning

(video-recorded)

rces (video-recorded)

be conducted at 8 September 2024

ucted on a cost-recovery d for the cost of marking inations, and the virtual ing venue, cadaveric anatomists)

adphones)

ction

sruptions

is across every aspect facilities. Aligning ered using paper-lite nly.













Evaluation

HETI recognises that monitoring and evaluation is vital to ensure training delivery is appropriate for participants and that training achieves its intended objectives and learning outcomes. The process is underpinned by an evaluation framework where data is collected and analysed in a systematic way.

PARTICIPANT FEEDBACK

Assesses whether the programs are appropriate for their intended audiences and assess the quality of implementation.

IMPACT EVALUATION

Measures the extent to which a program's aims have been achieved.

Learning outcomes YOU ARE EXPECTED TO:

- Undertake pre-reading as stipulated in the course structure
- Undertake the entry examination prior to course commencement
- Engage in the SSIC utilizing adult- based learning, selfdirected and reflective approaches
- Participate in practice exam questions
- · Participate in the virtual anatomy workshop as scheduled
- · Undertake the exit examination at the conclusion of the course

LEARNING OUTCOMES:

By the end of the course you should be able to:

- 1. Apply feedback you receive to target specific disciplines of knowledge for further study and practice ahead of the RACS GSSE
- 2. Build a sound knowledge base in each surgical science discipline and across the board to the minimum standard required for the RACS GSSE
- 3. Identify the minimum standard of knowledge in surgical sciences and anatomy to practical skills expected of an early SET 1 trainee
- 4. Recognise the importance of strong foundations in the surgical sciences to support patient safety
- 5. Explain core basic surgical anatomy in the context of interspecialty communication
- 6. Self-assess your surgical sciences knowledge through preand post- course assessments
- 7. Approach the RACS GSSE with greater confidence and a sound knowledge base in the surgical sciences.



Course completion

Participants completing all of the above will be issued with a HETI Certificate of Participation.







SSIC Program of Delivery

Session	Presenter	Should be completed (Week)	Date
Orientation Evening and Entrance Exam			
 Introduction to the SSIC: Course structure and self-directed learning approach Reading list: Lasts, Ganong, Introductory Pathology, Wests (recommended) Entry and Exit Examinations Practice Questions in Revision Weeks Anatomy Library 	HETI SSIC Team	Orientation Week	Wed 22/5
Entry Examination (Online - Time limited – 3 hours)	HETI Administration	Orientation Week	Sat 25/5
Week 1			
General Pathology 1 General Pathology 2 General Pathology 3 Overview of Genetics Cancer Genetics	Tristan Rutland	1	Mon 27/5
Week 2			
Common Cancers 1 Common Cancers 2 Pathology of Adaptive Growth and Neoplasia Non-Ischaemic types of Cell Injury	Tristan Rutland	2	Mon 3/6
Week 3			
Revision/Catch Up Week The Revision/Catch Up Weeks have been incorporated into the program to facilitate your timely progression through the SSIC. As busy clinicians it is important that you have sufficient time to review the SME lectures and demonstrations, as well as to complete recommended readings. This time should also be used to study the anatomy learning outcomes as you	SSIC Participants	3	Mon 10/6



progress though the Anatomy Library.

E Coli Fimbriae

Week 4

Microbiology 2 Microbiology 3

CNS Physiology 1: Autonomic Nervous System CNS Physiology 2: CSF and cerebral circulation physiology CNS Physiology 3: Electrical properties of nerves CNS Physiology 4: Hypothalamus and physiology of sensory systems Pain Physiology	Peter Kam	4	Mon 17/6
Week 5			
Chest Wall and Lungs	Robert Rae		
Cardiovascular Physiology 1: Applied DVS physiology topics Cardiovascular Physiology 2: Determinants and regulation of blood pressure	Peter Kam Peter Kam	5	Mon 24/6
Cardiovascular Physiology 3: Determinants of cardiac function	Peter Kam		
Week 6			
Revision/Catch Up Weeks The Revision/Catch Up Weeks have been incorporated into the program to facilitate your timely progression through the SSIC. As busy clinicians it is important that you have sufficient time to review the SME lectures and demonstrations, as well as to complete recommended readings. This time should also be used to study the anatomy learning outcomes as you progress though the Anatomy Library.	SSIC Participants	6	Mon 1/7
Week 7			
Cardiovascular Physiology 4: Electromechanical events of the heart	Peter Kam		
Cardiovascular Physiology 5: Peripheral blood vessels and regional circulation	Peter Kam		
Microbiology 1	Emma Sweeney	7	Mon 8/7
Microbiology-Stains	Robert Rae		
Microbiology 2	Emma Sweeney		
Microbiology 3	Emma Sweeney		



S Aureus

GI Tract histology

Week 8

Respiratory Physiology 1: Overview of respiratory function (Includes: brief review of metabolism & also important physiological indices & how to derive them) Respiratory Physiology 2:			
volumes; compliance, resistance & gas flow	Blair Munford	8	Mon 15/7
Respiratory Physiology 3: Gas exchange in the lungs: Alveolar gas equation; diffusion; pulmonary blood flow & V/Q matching; shunt & dead space			
Practical Pharmacology			
Week 9			
Revision/Catch Up Weeks The Revision/Catch Up Weeks have been incorporated into the program to facilitate your timely progression through the SSIC. As busy clinicians it is important that you have sufficient time to review the SME lectures and demonstrations, as well as to complete recommended readings. This time should also be used to study the anatomy learning outcomes as you progress though the Anatomy Library.	SSIC Participants	9	Mon 22/7
Week 10			
Respiratory Physiology 4: Gas transport & acid-base physiology: 02 & CO2 transport; classification & pathophysiology of hypoxia; acid-base balance & disorders	Blair Munford		
Respiratory Physiology 5: Control of ventilation & respiratory pathophysiology: Control of ventilation in health & abnormal/disease states; principles of mechanical ventilation.	Blair Munford	10	Mon 29/7
Immunology 1 Immunology 2 (Immunological responses/diagnostic immunology/transplantation immunology)	Connie Katelaris Connie Katelaris		
Week 11			
Anatomy of the Gastrointestinal Tract Gastrointestinal Tract Physiology 1 Gastrointestinal Tract Physiology 2 Gastrointestinal Tract Histology Metabolism, Nutrition and Surgery	David Storey David Storey David Storey Robert Rae David Storey	11	Mon 5/8

Week 12

Revision/Catch Up Week

The Revision/Catch Up Weeks have been incorporated into the program to facilitate your timely progression through the SSIC. As busy clinicians it is important that you have sufficien time to review the SME lectures and demonstrations, as well as to complete recommended readings. This time should also be used to study the anatomy learning outcomes as you progress though the Anatomy Library.

Week 13

Anatomy, Histology and Function of the Kidney Liver Segments Radiology 1 (Cancer) Radiology 2 (Trauma) Haematology 1

Week 14

Haematology 2 Pharmacology 1 Pharmacology 2 Endocrine Histology and Physiology Embryology

Week 15

Virtual Anatomy Weekend Workshop - University of Newcastle

Week 16

Revision Week for Exit Exam

Online Exit Examinations (Anatomy, Physiology and Pathology)

e ent l	SSIC Participants	12	Mon 12/8
	Robert Rae Robert Rae Noel Young Noel Young Zaid Househ	13	Mon 19/8
	Zaid Househ Gerald Muench Gerald Muench Robert Rae Tristan Rutland	14	Mon 26/8
	Subject Matter Expert Surgeons and Anatomists	15	Sat 7/9 & Sun 8/9
	SSIC Participants		Mon 9/9
	HETI Administration	16	Sat 14/9

Online Anatomy Library

	Demonstrator	Review Weeks
Neuroanatomy		
Brain, cerebellum, cranial nerves-origin and course, blood vessels, circle of Willis. Clinical Assessment Brain histology, optic tracts, pituitary hypothalamus, ventricles	Erica Jacobsen John Morley	1-15
Chest		
Chest wall, lungs, diaphragm Trans-thoracic plane (Sternal Plane) Heart and lungs Chest–Anatomy and Radiology	Robert Rae Robert Rae Bruce French Robert Rae	1-15
Abdomen		
Oesophagus and stomach Liver Segments Kidneys and ureters Colon, rectum, anus and pelvis/pelvic floor Pancreas, biliary tree Aorta and IVC – branches and veins	David Storey Robert Rae Robert Rae Scott MacKenzie David Storey Cherylea Browne	1-15
Neck		
Skull foramina, vertebrae and cartilages Thyroid, parathyroids, nerves tracheotomy, cricothyroidectomy Root of Neck: Blood vessels, penetrating injuries, surgical approaches	Cherylea Browne Peter Campbell Robert Rae	1-15
Upper Limb		
Brachial plexus, nerves Bones, joints, muscles of the hand	Cherylea Browne James Powell	1-15
Lower limb		
Blood vessels Bones, joints, muscles of the foot Neurovascular continuities in and out of the pelvis Femoral Triangle Popliteal Fossa Nerves of the Lower Limb Part I Nerves of the Lower Limb Part II	Ellen Hardy James Powell David Storey Cherylea Browne Cherylea Browne Cherylea Browne Cherylea Browne	1-15

Virtual Anatomy Workshop **Complex Anatomical Regions**

University of Newcastle Biomedical Sciences Team Saturday and Sunday, 7 and 8 September 2024

	Clinical Consequences	Should be completed (Week)
Neuroanatomy-CNS	Erica Jacobson	15
Head and Neck	TBC	15
Thorax	TBC	15
Heart	Bruce French	15
Abdomen I	David Storey/Pat Alley	15
Abdomen II	David Storey/Pat Alley	15
Upper Limb	Cherylea Browne	15
Lower Limb	Cherylea Browne	15

Brachial plexus





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