University of
South Australia

Bachelor of Medical Radiation Science

Nuclear Medicine

Guide for Clinical Supervisors

The information in this guide is current as at March 2023.

Contents

Aims of the Guide

The guide is intended to provide the Clinical Supervisor with a simple reference to the University of South Australia students' clinical education. Please use this guide for general information and in conjunction with the information on the Clinical Placement Unit Website for Clinical Supervisors:

http://i.unisa.edu.au/students/health/cpu/

If you are not able to access the website, please contact the Course (subject) Coordinator.

This guide provides information on various issues including the roles of University of South Australia Academic Teaching Team and Clinical Supervisors, an Overview of the Bachelor of Medical Radiation Science (Nuclear Medicine) program, developed 'Nuclear Medicine Clinical Practice Supervision and Performance Guidelines', learning objectives of the student at each year level and details of clinical assessments to be carried out during clinical placement.

We hope you find this guide helpful but please contact the University of South Australia Academic Teaching Team if you have further queries regarding our program.

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Role of the University of South Australia Nuclear Medicine Academic Teaching Team

The Nuclear Medicine Academic Teaching team has the role of:

- Course coordination of all Nuclear Medicine academic and clinical courses within the Bachelor of Medical Radiation Science (Nuclear Medicine) program
- Clinical student placement allocation (local and interstate) in conjunction with the University of South Australia Clinical Placement Unit (CPU)
- Coordination and delivery of Pre-Clinical skill development workshops
- Providing learning opportunities relating to Nuclear Medicine theory
- Lecturing on Nuclear Medicine theory
- Conducting practical sessions simulated learning experiences with the on-campus Nuclear Medicine computer processing system
- Maintaining regular contact with students during their clinical placement. This includes:
    - Monitoring development and progress of assessment tasks through face to face visiting for metropolitan placement students and telephone and email contact for rural and interstate placement students
    - Monitoring of student online discussion during placement
    - Counselling of students when necessary
- Maintain regular contact with Clinical Supervisors and Mentors

Role of the Clinical Supervisor and Mentor

The clinical supervisor has an overall role of liaison with University of South Australia course coordinator, the students and the mentors within the clinical site.

The clinical supervisor is responsible for:

- Orientating students to the clinical site
- Directly supervising the student or allocating a suitable mentor to each student
- Maintaining an overall awareness of the student's progress and wellbeing by discussion with the student and mentors and liaison with the University of South Australia Nuclear Medicine Academic Teaching Team if any issues should arise
- Providing the student with formative feedback during the clinical placement
- Facilitating completion of the student summative clinical report and competency assessments
- Advising the student on how to act professionally, safely and with respect to staff and patients.

The clinical mentor is responsible for:

- Supervising the students in the clinical placement as requested by the clinical supervisor.
- Providing informal feedback during the clinical placement
- Reporting to the clinical supervisor if concerns are raised relating to the well-being or performance of the student during their clinical placement.
- Providing a role model for students within the clinical environment
- When requested assist the clinical supervisor with completion of the student's clinical report by providing information relating to the performance of the student during their placement.

Overview of the Bachelor of Medical Radiation Science (Nuclear Medicine) Program/Honours Program

The clinical component of the Bachelor of Medical Radiation Science (Nuclear Medicine) is designed to produce graduates who are life-long learners and can cope with an environment of rapidly changing technologies, with the necessary skills, knowledge and attitudes to enable them to gain accredited practitioner status. The clinical program aims to develop professional knowledge, skills and attitudes using an integrated approach, where placements are preceded by on-campus academic learning.

The Bachelor of Medical Radiation Science program of teaching and learning is built on nine graduate qualities which have been developed and integrated from the Medical Radiation Practice Board of Australia (MRPBA)'s Professional Capabilities for Medical Radiation Practice, Scope of Practice of the Australian and New Zealand Society of Nuclear Medicine (ANZSNM) and the graduate qualities of the University of South Australia. These qualities define how our graduates will act and the capabilities (knowledge, skills and professional attributes) they will demonstrate when they exit the program and begin to practise as Nuclear Medicine Technologists. As of 1 July 2012, Nuclear Medicine Technologists must also be registered under the National Registration and Accreditation Scheme (NRAS) with the MRPBA and meet the MRPBA's Registration Standards, in order to practise in Australia.

The graduate qualities of the Bachelor of Medical Radiation Science (Nuclear Medicine) Program are:

1. **Body of knowledge**

At the completion of the program the student should:

a) Demonstrate a broad and thorough knowledge/understanding of key underpinning theory (discipline specific, physics, biologic science, humanities and behavioural, information technology, research).

b) Demonstrate a broad and thorough knowledge of scope of clinical skills and practice underpinning each discipline (in principles, clinical application, procedures, participation with other health care members, information management, confidentiality, scope of practice and role within team).

2. Life-long learning

At the completion of the program the student should:

a) Demonstrate commitment to ongoing professional development: using professional standards of practice to self assess, participate regularly in professional development and self-directed learning, and participate in training programs related to the introduction of new technologies and procedures.

b) Play an active role in mentoring/teaching; participate in education of students and graduates undertaking supervised clinical practice, contribute to learning experiences and professional development of others, evaluate progress towards expected training outcomes.

c) Participate in research; demonstrate an understanding of the significance of research in contemporary practice, participate in and contribute towards research, reasoning and problem solving, conduct evidenced based practice, evaluate practice systematically and participate in audit processes.

3. Problem solving/critical thinking and evaluation

At the completion of the program the student should:

a) Assess clinical situations to determine key issues and deliver a timely and quality outcome by: applying critical thinking and problem solving skills to formulate appropriate clinical decisions, applying critical thinking skills to time management and resource utilisation and evaluate the appropriateness of patient and clinical information.

b) Analyse and respond to problems related to patient treatment and care by: identifying problems as they arise in clinical practice, applying knowledge and experience to solve problems and ensure care is delivered to achieve best practice, apply reasoning and problem solving skills to determine appropriate clinical decisions and reflect on decisions to modify future practices.

c) Analyse and respond to problems of operation and management by: identifying situations requiring problem solving and apply a systematic and logical approach, initiating resolution of problems to ensure prescribed protocols are maintained and prioritising issues for management of time and resources.

d) Initiate and evaluate research outcomes and incorporate into evidence based practice.

e) Evaluate and implement processes and procedures for ensuring quality outcomes by: ensuring all services and interventions are provided in accordance with definitive protocols and standards of practice, evaluating practice in an ongoing basis and analyse and document issues related to reportable incidents, with recommendations for future corrective actions.

4. Act ethically and responsibly/professional and ethical practice

At the completion of the program the student should:

a) Act to ensure that patient welfare and rights are appropriately respected (patient advocacy) by: implementing procedures to meet statutory and ethical health and safety requirements, engaging effectively in ethical decision making, ensuring patient confidentiality of information, implementing procedures relating to discipline, acting to ensure the rights of individuals are not compromised.

b) Act to preserve the safety of individuals and groups at all time by: demonstrating a thorough knowledge of radiation safety to a level that supports safe practice, acting to minimise infection risk, practicing within the framework of accepted policies and procedures (e.g. radiation safety, occupational health and safety) and reporting incidents.

c) Display a commitment to manage quality issues and relating to effective practice by: evaluating the quality of practice in the clinical setting, auditing , reflecting upon and reviewing practice, make reasoned decisions to initiate, continue, modify or cease treatment or the use of techniques or procedures and communicate the decisions and reasoning appropriately.

d) Display an ability to perform quality control for equipment, for patient interventions, image processing and displays a commitment to quality improvement.

e) Promote the profession in the community and the workplace.

f) Be aware of industrial and professional issues.

5. Work autonomously and collaboratively

At the completion of the program the student should:

a) Operate effectively as an autonomous and responsible practitioner by assuming responsibility for own actions, make independent professional decisions within their scope of practice, responding to and recognising own abilities, skills and capabilities and level of professional competence, maintain effective communication and ensuring documentation is accurate and maintain confidentiality.

b) Be guided in action by their own and others scope of practice by: recognising and operating within own scope of practice, recognising limitations of an experienced and student practitioner, consulting with other health care professionals when issues are beyond own scope of practice.

c) Engage in fusion technology within the scope of practice or with ANZSNM approved training, registration and licensing.

d) Establish and maintain appropriate collaborative relationships with colleagues and members of the multidisciplinary team by: working effectively within the organisation, advising members of the multidisciplinary team about individual patient needs and know when to make appropriate referrals, demonstrating respect for colleagues and other members of the multidisciplinary team, participating with other health care members of team in decision making and recognising the need for team participation in the development of resources.

6. Communicate effectively in professional practice and as a member of the community

At the completion of the program the student should:

a) Demonstrate oral, written, mathematical and visual literacies as appropriate to the discipline or professional area.

b) Display sensitivity to the audience in organising and presenting ideas.

c) Communicate appropriately with professional colleagues and the public.

d) Demonstrate a knowledge and understanding of indigenous community protocols and communication styles.

7. Demonstrate international perspectives

At the completion of the program the student should:

a) Display an ability to think globally and consider issues from a variety of perspectives.

b) Demonstrate an awareness of his/her own culture and its perspectives and other cultures and their perspectives.

c) Appreciate the relation between the field of study locally and professional traditions elsewhere.

d) Recognise intercultural issues relevant to their professional practice.

e) Appreciate the importance of multicultural diversity to professional practice and citizenship.

f) Appreciate the complex and interacting factors that contribute to notions of culture and cultural relationships.

g) Value diversity of language and culture.

h) Appreciate and demonstrate the capacity to apply international standards and practices within the discipline or professional area.

i) Demonstrate awareness of the implications of local decisions and actions for international communities and of international decisions and actions for local communities.

8. Care and clinical management

At the completion of the program the student should:

a) Fulfil the duty of care in clinical practice by acting to ensure rights of individuals are not compromised and demonstrating a duty of care in patient management (informed consent).

b) Maintain patient comfort, privacy and safety.

c) Establish and maintain effective interpersonal relationships with patients and others by showing empathy towards individuals, their carers or colleagues, applying strategies to promote individual or group esteem, act to maintain integrity and dignity of individuals or groups.

d) Respond appropriately in culturally sensitive situations by acting in ways that demonstrate respect for values, custom, spiritual beliefs and practices of individuals.

e) Demonstrate effective clinical management of individuals by identifying individual patient health issues and refer to appropriate professional groups within the multidisciplinary team, develop and document clinical procedures, participate in individual care in consultation with the team, assess the individual's condition and appropriateness to the prescribed procedure and monitoring the patient.

9. Provide services

a) At the completion of the program the student should competently provide patient services within the scope of an accredited Nuclear Medicine Technologist.

Development of Clinical Skills

Participating in clinical placements is vital for the development of the student's professional skills and competencies. When developing the objectives, aims and assessments of the student's discipline specific courses, outcome statements for key areas of practice and associated expectations within the Scope of practice from the ANZSNM and the MRPBA's professional capabilities statement for medical radiation practice (as at January 2019). The aim is that at the end of the student's degree, he/she will be competent to practice within the scope of practice of a Nuclear Medicine Technologist at registered practitioner level. This level of practice includes:

- Patient care and clinical assessment
- Interpersonal skills
- Administrative abilities
- Hospital/departmental safety
- Radiation protection
- Laboratory skills
- Radionuclide administration
- Diagnostic imaging including acquisition and processing of wide variety of scintigraphic procedures, quality control procedures and Picture Archiving and Communication Systems (PACS)
- Exposure to allied health fields including Computed Tomography, Ultrasound and Magnetic Resonance Imaging (MRI)
- Professional development
- Mentoring, clinical reasoning and research.

As the student progresses through the program, she/he will be required to build and maintain clinical competencies by taking both academic and clinical practice courses. By the time the student graduates, he/she will need to demonstrate that she/he can work independently.

Each course has stated aims and objectives that are linked to outcomes in the Scope of practice from the ANZSNM and the MRPBA's professional capabilities statement for medical radiation practice (as at January 2021). The student's discipline specific academic courses teach him/her the underlying principles and skills required for clinical competencies through lectures and tutorials sessions. The clinical courses (Nuclear Medicine Clinical Practice 1 and 2, Nuclear Medicine Clinical Practice 3 and 4, Nuclear Medicine Honours Clinical Practice 4, Nuclear Medicine Professional Entry Practice 1 and 2 and Nuclear Medicine Honours Professional Entry Practice 1) provide the student with opportunities to develop and build competencies from beginning level in early courses to advanced levels in later courses. The student will experience a number of different types of clinical placements throughout the program.

'Guiding Principles' have been developed for clinical placements, to ensure that over the period of the student's degree, she/he gets diverse experience that will allow him/her to develop the skills expected of a graduating Medical Radiation professional. Some of these principles can be controlled by the clinical placement system and others will be edited or adjusted by the Stream Coordinator and/or Course Coordinator before placements are finalised.

The Guiding Principles are:

For each clinical course (Nuclear Medicine Clinical Practice 1, 2, 3 and 4, Nuclear Medicine Honours Clinical Practice 4, Nuclear Medicine Professional Entry Practice 1 and 2 and Nuclear Medicine Honours Professional Entry Practice 1) the student may attend one or two sites clinical sites.

There are four categories of sites.

1. Public hospitals	No repeated visits at the same sites across the program (with the exception of placements in Year 1) unless deemed necessary by the course coordinator for a balanced experience.
2. Private practice (attached/not attached to a hospital)	No repeated visits at the same sites across the program (with the exception of placements in Year 1) unless deemed necessary by the course coordinator for a balanced experience.
3. Rural/Regional - Interstate	Students are required to undertake a rural/regional placement during our program to meet MRPBA accreditation requirements (minimum 3 weeks).
4. Molecular Imaging and Therapy Unit (MITRU) at SAHMRI	All students will be required to undertake a placement at the MITRU for 2 weeks (usually in fourth year).
Across the program, it is a requirement that the student participates in a range of different clinical sites from the above categories. In addition to the above, students will also be required to attend a PET site (from any site in categories 1-3).	

Assessment of Clinical Skills

Students are required to demonstrate evidence of their developing clinical skills, knowledge and attitudes through competency assessments in the clinical setting, a clinical report (from the clinical supervisor), and through other assessments administered by the academic teaching team.

Competency Milestones

To pass each clinical course the student must reach a competency milestone which is a collection of competency assessments which introduce higher grades of complexity for each subsequent course. The complexity of the milestones is determined by a prescribed set of competency assessments, each of which is categorised by levels of complexity; classes 1-3.

Failure to pass the assessments may impact on the student's progression into the next clinical course.

Competency assessments can be attempted after the student has participated in/or performed an examination a number of times. The exact requirements are outlined in the 'Clinical Portfolio'. During each clinical course the student will be assessed on a range of competencies, some of which are mandatory, some of which are elective; this gives the student some flexibility for some of the competencies that are less frequently performed and, therefore, harder to gain competency in. In some special cases, if the student is unable to achieve a mandatory competency in the clinical setting they will be given an opportunity to demonstrate it in a simulated environment. By the end of their program of study the student must have successfully completed the required number of *competency assessments* outlined in their clinical portfolio. These numbers may vary according to the changes made in consultation with industry partners and technical and procedural changes in the work place.

Type of experience expected		
Course	**Stage of program**	**Class**
Medical Radiation Clinical Human Anatomy	Second half of year 1	Observation only
Clinical Practice 1	Second half of year 2	1
Clinical Practice 2	First and second half year 3	1,2
Clinical Practice 3	First half year 4	1,2,3
Clinical Practice 4 and Honours Clinical Practice 4	First half year 4	1,2,3
Professional Entry Practice 1 and Honours Professional Entry Practice 1	Second half year 4	1,2,3
Professional Entry Practice 2	Second half year 4	1,2,3
EXPLANATION OF CLASSES:		
Class 1 (easy)	patient mobile and cooperative, with no modification to technique required	
Class 2 (moderately difficult)	patient mobile or in a wheelchair, possible communication barrier, age or language related, minor modifications to technique may be required	
Class 3 (very difficult)	immobile patient including trauma situation, ward patient, theatre case or mobile nuclear medicine, limited scanning or major modification to technique required.	
Please refer to the student's clinical portfolio for milestone requirements associated with competency assessment		

To record examinations in the portfolio for all sections, the student must undertake a major role. A major role, in this instance, is defined as the student having a greater than 70% involvement in the examination. Under this definition, it is acceptable for the supervising

technologist to assist the student. When a completed examination satisfies the current clinical department's criteria for acceptability, the supervising technologist is to print and sign their name next the examination record in the student portfolio.

When the student has performed and recorded the defined number of examinations for a particular competency they may approach the clinical supervisor or a delegated mentor to perform a *competency assessment*. The assessor will mark each section as 'Competent' or 'Not Competent' and include comments to support their decisions. Further information is also available in the student's clinical portfolio.

NOTE:

It is important for the assessor(s) to be registered and complete their details in the appropriate section of the student portfolio. These details include their name, location of employment and signature. This will facilitate cross referencing of signatures if needed when the clinical competencies are assessed.

Retention of clinical skills

Students are encouraged to not only concentrate on developing new skills, but also to maintain the ones that they have developed earlier. The student's ability to retain skills will be assessed through the clinical report (by the clinical supervisor), and also through activities that are assessed by academic staff.

Schedule of University of South Australia Program

Commencing students in the IBRS are offered a discipline specific place i.e. Medical Imaging, Nuclear Medicine or Radiation Therapy. Students are not given an option to change their discipline specific stream. In the second half of the second year of the program, students may apply to enrol in an Honours program as part of their degree. These students will enrol in all the same courses as those students not participating in the Honours program with the exception of 'Nuclear Medicine Honours Clinical Practice 4' and 'Nuclear Medicine Honours Professional Entry Practice 1'. Students completing these two courses have their written assessment workload adjusted. A representative clinical grid is available at the end of this guide to outline the clinical requirements for both the 'pass' and 'with honours' options of the program.

First Year

Academic Courses (Foundation Sciences)		**Placement**
First Half	**Second Half**	
Human Anatomy 100 Human Physiology 100 Foundations of Health Physics for Medical Radiation 1	Human Anatomy 101 Human Physiology 101 Pathology Physics for Medical Radiation 2	

Second Year

Academic Courses (Foundation Sciences and Nuclear Medicine specific)		**Clinical Placement**
First Half	**Second Half**	**Second Half**
Human Anatomy 201 Psychology Nuclear Medicine Studies 1 (academic course) Physics for Medical Radiation 3	Nuclear Medicine Studies 2 (academic course) Evidence Based Practice 1 Physics for Medical Radiation 4	**Nuclear Medicine Clinical Practice 1**

Nuclear Medicine Studies 1
Course content
Applied anatomy, physiology, and pathology in the context of nuclear medicine theory and technique of the skeletal, respiratory, endocrine and urinary systems in adult and paediatric patients. The process of image formation; digital image quality and manipulation; picture archiving and communication systems (PACS). Radiopharmacy including 99Molybdenum (Mo)/99mTechnetium (Tc) generator, kit reconstitution, quality control and radiopharmaceutical uptake in relation to the skeletal, respiratory, endocrine and urinary systems. Principles of single photon emission computed tomography (SPECT) including quality control procedures. Principles, calibration, quality control and use of the dose calibrator, the gamma camera and general Nuclear Medicine equipment including radiation and scintillation detectors. Introduction to radiation safety and radiation protection including radiation biology and regulatory and legal responsibilities. Interpersonal communication skills, responding empathically, patient consent, patient confidentiality, patients with particular needs (cultural, social, mobility, cognitive), interviewing skills, monitoring patient comfort and welfare, duty of care; team work; professionalism; ethics; legalities; medical terminology; situation analysis. National Safety and Quality in Health Service Standards.

Nuclear Medicine Studies 2
Course content
Applied anatomy, physiology, and pathology in the context of nuclear medicine theory and technique of the gastrointestinal and cardiac systems in adult and paediatric patients. Radiopharmaceutical bio-distribution and scan findings of Nuclear Medicine techniques of the gastrointestinal tract and cardiovascular system pertaining to a wide range of patients; image quality and manipulation; accuracy of techniques; radiation protection; interpersonal communication skills - interviewing skills, conflict resolution, patients with particular needs (cultural, social, mobility, cognitive), provisional diagnosis/professional identity and patient advocacy; patient care - handling difficult situations, clinical and social implications of disease, processes of ageing; team work including with other health care professionals; professionalism; ethics; legalities; medical terminology; situation analysis.
Nuclear Medicine Clinical Practice 1
Course content
Clinical skills development at beginner level, building technical skills including patient care and communication, safety, professional behaviour, team work, self-motivation, self-directed learning and clinical reasoning.

Third Year

Academic Courses (Foundation Sciences and Nuclear Medicine specific)		**Nuclear Medicine Clinical Placement**
First Half	**Second Half**	**First & Second Half**
Nuclear Medicine Studies 3 (academic course) CT and PET imaging (academic course) Evidence Based Practice 2 Elective	Specialised (academic course) Nuclear Medicine Studies 4 (academic course)	**Nuclear Medicine Clinical Practice 2 Part A & Part B** (clinical course)

Nuclear Medicine Studies 3
Course content
Applied anatomy, physiology and pathology in the context of nuclear medicine theory and technique of the central nervous system and positron emission tomography in a range of patient populations as related to radiopharmaceutical bio-distribution and scan findings; techniques of the central nervous system and positron emission tomography (PET); image quality and manipulation; accuracy of techniques; radiopharmaceuticals used and their mechanisms of uptake in relation to the central nervous system and positron emission tomography (PET); positron emission tomography (PET) instrumentation; the cyclotron; good manufacturing practice; positron emission tomography (PET) radiopharmaceutical production; radiation protection; verbal/non-verbal communication skills; patient care - handling difficult situations, the unconscious patient, the deteriorating patient; team work including with other health care professionals; professionalism; ethics; legalities; medical terminology; situation analysis; National Safety and Quality in Health Service Standards (NSQHS).
CT and PET Imaging
Course content
Physical principles of CT and PET/CT and their application to medical diagnosis and treatment; instrumentation; generations of scanners; Helical/spiral CT systems; multislice scanners; imaging/scanning parameters; patient positioning; examination preparation; contrast media;

venepuncture; image reconstruction; image quality; artefacts; quality assurance procedures; image evaluation; image interpretation; anatomy recognition in multiple planes; pathology; image manipulation; patient and staff safety issues; biological effects; patient care including risk factors; radiation safety; dosimetry; interpersonal communication, skills contact, responding empathically, nursing skills/patient interactions; hybrid imaging; image co-registration; image fusion; attenuation correction; clinical applications of co-registration and image fusion; quality assurance and control; protocols of contemporary practice; advanced current CT procedures; radioisotopes, biodistribution of radiopharmaceuticals, paediatric considerations; radiation therapy simulation and planning; professionalism; ethics; legalities.

Nuclear Medicine Studies 4

Course content

Applied anatomy, physiology and pathology of tumour, infection/ inflammatory, lymphatic, , lacrimal procedures as related to radiopharmaceutical distribution and scan findings; techniques of tumour, infection/inflammatory, lymphatic, and lacrimal procedures pertaining to a range of patient populations; image quality and manipulation; accuracy of techniques; radiopharmaceuticals used and their mechanisms of uptake in relation to tumour, infection/inflammatory, lymphatic, and lacrimal procedures; principles, calibration, quality control and use of a bone densitometer; principles of venesection and issues relevant to occupational health and safety; the centrifuge and biosafety hazard cabinet; laboratory safety; therapy and theranostics; radiation protection; interpersonal communication skills -; patient care - handling difficult situations, clinical and social implications of disease; team work including with other health care professionals; professionalism; ethics; legalities; medical terminology; situation analysis; National Safety and Quality in Health Service Standards (NSQHS).

Specialised Medical Radiation

Course content

Principles of MRI and US and their application to medical diagnosis and treatment; instrumentation; imaging parameters; image reconstruction; image quality; artefacts; image evaluation; anatomy recognition in multiple planes; pathology; diagnosis, staging, treatment and follow-up; patient and MRI staff safety issues; biological effects; patient care including risk factors; interpersonal communication skills, responding empathically, nursing skills and/patient interactions; multi-modality diagnosis and treatment pathways; patient focused multi-disciplinary care; image co-registration; International Electrotechnical Commission (IEC) 'Standards for Australia/New Zealand'; DICOM standards; professionalism; ethics; legalities; quality management; NM Therapy; MRI in RT planning; IMRT; Brachytherapy; MRI fusion imagery; clinical and research applications of emerging medical radiation technologies.

Nuclear Medicine Clinical Practice 2

Course content

Clinical skills development (developing level) building on technical skills gained in previous clinical courses including patient care and communication, safety, professional behaviour, team working, self motivation, self directed learning and clinical reasoning.

Fourth Year

Nuclear Medicine Skills Development	
First Half	**Second Half**
Nuclear Medicine Clinical Practice 3 (clinical course) **Nuclear Medicine Clinical Practice 4 (clinical course)/Nuclear Medicine Honours Clinical Practice 4 (clinical course)** **Nuclear Medicine Professional Practice 4 (clinical course)**	**Nuclear Medicine Professional Entry Practice 1 (clinical course)/Nuclear Medicine Honours Professional Entry Practice 1 (clinical course)** **Nuclear Medicine Professional Entry Practice 2 (clinical course)**

Nuclear Medicine Clinical Practice 3
Course content
Clinical skills development (independent level) building on technical skills gained in previous clinical courses including patient care and communication, safety, professional behaviour, team working, self motivation, self directed learning and clinical reasoning, development of resources and current practices and continuing education and professional development and nuclear medicine promotion.
Nuclear Medicine Clinical Practice 4/Nuclear Medicine Honours Clinical Practice 4
Course content
Clinical skills development to a level of advanced student knowledge and understanding of the technical skills; patient care and communication; safety; professional behaviour; team work; self motivation; legal and ethical issues; scope of practice; self reflection; clinical reasoning. preparation of recruitment and job selection procedures.
Nuclear Medicine Professional Entry Practice 1/Nuclear Medicine Honours Professional Entry Practice 1
Course content
Clinical skills development at a proficient level, building on technical skills gained in previous clinical courses including patient care and communication, safety, professional behaviour, team working, self-motivation, self-directed learning and clinical reasoning, mentoring.
Nuclear Medicine Professional Entry Practice 2
Course content
Clinical skills (at an entry level), building on technical skills gained in previous clinical courses including patient care and communication, safety, professional behaviour, team working, self-motivation, self-directed learning and clinical reasoning, identifying learning needs, continuing professional development.

Specific Information Provided for Each Clinical Placement

The student has a 'Clinical Portfolio' which they will use to demonstrate her/his performance and attendance. The student should ask the Clinical Supervisor to fill out some documentation in this 'Clinical Portfolio', including:

- Attendance records (so the student's clinical attendance can be tracked)
- Nuclear Medicine Technologists' specimen signatures (so signatures can be verified)
- Competency records and competency assessments

The Clinical Supervisor will also be asked to assess the student mid-placement ('Formative Clinical Report') and at the end of each clinical placement ('Summative Clinical Report'). The student will pass this separate documentation to the Clinical Supervisor on the first day of her/his clinical placement.

Attendance (Satisfactory / Unsatisfactory)

The University of South Australia Clinical Placement Unit (CPU) will roster each student via the placement rostering system to a clinical department, in accordance with the published teaching schedule for the Bachelor of Medical Radiation Science program.

Students are required to attend all scheduled clinical days, subject to the 'Clinical Placement Attendance' Policy of this program. Student hours are 8.30am - 5.00pm (7.5 hours per day), but may be adjusted to fit within departmental normal work patterns.

Students must record the date, actual start and finish times (even if the Clinical Supervisor/Mentor permits them to leave the clinical site earlier than anticipated), lunch breaks and total hours per day for each full day (7.5 hours) attended.

It is compulsory for students to have a minimum half hour break for lunch and total clinical hours will be calculated based on this requirement. This half hour lunch break cannot be substituted for missed clinical time. Tea breaks may be given at the discretion of the Clinical Supervisor/Mentor.

Each full or part day for which the student is absent from clinical placement must be recorded in the right-hand column by giving the exact time absent and reason for absence.

The student is required to sign the record and present it at the completion of each day to the Clinical Supervisor/Mentor to verify all information is correct by he/she signing against 'Mentor's Signature'.

Students should also mark clearly any public holidays or days attended at pre- or post- clinical workshops, Honours days or presentations that fall during the scheduled Clinical course.

Please note: No correction fluid or pencil (black or blue pen only) is to be used on Clinical Placement Attendance Records. If correction fluid is used, this section of the timesheet will be considered invalid and treated as missed clinical time.

If a student is unable to attend clinical placement due unexpected circumstances they must contact the Clinical Supervisor at the placement no later than 30 minutes after the scheduled starting time and email (or telephone) the University of South Australia Course Coordinator on the same working day.

At the end of the study period, completed clinical placement hours will be calculated.
Absences **may** need to be made up by the student at the discretion of the University of

South Australia Course Coordinator. If time is to be made up this will be organised by the student in liaison with the University of South Australia Course Coordinator **i.e. students are required to negotiate with the University of South Australia Course Coordinator and then the Clinical Supervisor a suitable time/s for additional clinical placement time due to absent days / times.** These 'make up' hours are to be recorded on a clinical placement attendance record which will be signed by the Clinical Supervisor/Mentor.

Due to the work and commitment required by students who undertake an Honours program, these students are allowed in their 4th year of study, 15 days of clinical placement time that may be substituted for Honours related work (e.g. data collection, thesis writing). Conditions are as follows:

- Any clinical day substituted for honours-related activities must be negotiated with the clinical supervisor and the course coordinator **at least 5 working days prior to the claimed day**. The Honours Coordinator needs to be included in this correspondence (e.g. cc'd in the email).
- Students must state the objectives they want to achieve and may be asked to produce evidence.
- The substituted day must be recorded in the student's clinical record, and authorised by the course coordinator and the clinical supervisor.
- The 15 substitution days may be taken up to 2 days consecutively. Days greater than 2 must be negotiated with the clinical supervisor and the course coordinator.
- The 15 available substitution days do not have to be taken, and are not a replacement for sick days. Sick days will still need to be made up according to the Clinical Attendance Policy.
- Students must reach the required competency levels for courses. Honours concession days will not be granted if the course coordinator or clinical supervisor believe the student is at risk of failing to meet the minimum competency level.

The University of South Australia Medical Radiation Clinical Placement Policies and Procedures

The University of South Australia Medical Radiation Clinical Placement policies and procedures are listed below and the current policies can be found via the Clinical Placement Unit (CPU) website http://i.unisa.edu.au/students/health/cpu/forms/

- Uniform policy
- Name badge policy
- Clinical placement attendance policy
- Luxel policy
- Radiation guidelines (including pregnancy)

Accident / Incident Report

If a student is involved in an accident / incident, please inform the Course Coordinator as soon as possible (i.e. same day if possible). It is the student's responsibility to complete a University of South Australia incident report form (Fs24) and submit this to the course coordinator.

The incident report form can be downloaded from the CPU website
http://i.unisa.edu.au/students/health/cpu/forms/

'Passport to Placement' Folder

The University of South Australia, Bachelor of Medical Radiation Science student is required to maintain their 'Passport to Placement' folder to contain updated evidence of all pre-clinical documentation (e.g. immunisation record, first aid course, National Criminal History Record Check etc.). The student is asked to carry their 'Passport to Placement' with them to each clinical site and if requested present this folder to the clinical supervisor.

Nuclear Medicine Clinical Practice Supervision and Performance Guidelines

A set of 'Nuclear Medicine Clinical Practice Supervision and Performance Guidelines' have been compiled to assist the Clinical Supervisor in the supervision and assessment of students participating on clinical placement.

As the student progresses through the program, he/she will **gradually** build and maintain clinical skills by completing both academic and clinical courses. It is, therefore, vital that the Clinical Supervisor is aware of the expected level of performance of a student during any clinical course and, hence, the level of supervision the student should be provided with.

On the following pages, you will find a set of guidelines ('Nuclear Medicine Clinical Practice Supervision and Performance Guidelines') to assist in the supervision and assessment of students. There is a set of guidelines for each clinical course/placement. The information under the headings 'Communication and Patient Care', 'Student Characteristics/Clinical Decision Making', 'Nuclear Medicine Practice/Equipment/Instrumentation' and Image Critique/Interpretation' relate to the student's performance during a course and the information under 'Supervision level, Supervision Characteristics' is the recommended level/type of supervision required by a student participating on clinical placement. You will see that as the student gains more experience and clinical skills and, hence, becomes more independent, the close supervision of the student is slowly withdrawn.

It is extremely important, that the Clinical Supervisor/s familiarise themselves with the guidelines as they form the basis of the completion of the 'Formative' and 'Summative' Clinical Reports.

	Communication and Patient Care	Student Characteristics / Clinical Decision Making	Nuclear Medicine Practice / Equipment / Instrumentation	Image Critique / Interpretation	Supervision Level /Supervision Characteristics
<u>Year 2</u> **(Second Half)** **<u>Course:</u>** **Nuclear Medicine Clinical Practice 1** ***Entrance Level*** ***'Novice Student'***	Exhibits basic communication skills with patients, staff and significant others. Communicates with patients at a basic level eg collect and change patients.	Shows very little experience in the clinical environment. Understands the principles of privacy and confidentiality.	Observes and then attempts simple examinations. No experience with imaging and accessory equipment. Requires extra time for examinations. Able to follow departmental procedures and policies. Demonstrates limited confidence in the Nuclear Medicine environment.	Shows very limited ability to critique and interpret images.	**Supportive supervision** Close support. Demonstration of procedures. Immediate feedback to promote confidence building. Simple, clear direction. Focus on direction for fewer tasks at a time.

	Communication and Patient Care	Student Characteristics / Clinical Decision Making	Nuclear Medicine Practice / Equipment / Instrumentation	Image Critique / Interpretation	Supervision Level /Supervision Characteristics
<u>Year 3</u> **(First Half)** **<u>Course:</u>** **Nuclear Medicine Clinical Practice 2** ***'Primary Student'***	Exhibits basic communication skills with patients, staff and significant others. Communicates with patients at a basic level e.g. collect and change patients or explain simple procedures. Gives limited instructions to patients. Ability to focus on patient care and technical aspects simultaneously (beginning level).	Shows some experience in basic procedures but still requires close supervision for all examinations. Demonstrates limited practice to less complex patients. Displays knowledge of radiation protection and infection control measures to a level to support safe practice. Reflects and discusses ways to improve their clinical practice.	Attempts patient positioning. Limited experience with imaging and accessory equipment. Performs one task at a time well. Completes tasks given extra time. Demonstrates limited confidence in the Nuclear Medicine environment. Shows understanding of the departmental structure and patient pathway. Shows understanding of incident reporting mechanisms.	Shows ability to identify basic errors in resultant images, although, may not be able to accurately identify how to correct errors. Demonstrates ability to identify obvious basic abnormality, although, may not be able to use correct medical / scientific terminology to name the abnormality.	**Supportive supervision** Close support. Demonstration of procedures. Immediate feedback to promote confidence building. Simple, clear direction. Focus on direction for fewer tasks at a time.

Nuclear Medicine Clinical Practice Supervision and Performance Guidelines

	Communication and Patient Care	Student Characteristics / Clinical Decision Making	Nuclear Medicine Practice / Equipment / Instrumentation	Image Critique / Interpretation	Supervision Level Supervision Characteristics
<u>Year 3</u> (Second Half) **<u>Course:</u> Nuclear Medicine Clinical Practice 2** ***'Intermediate Student'***	Exhibits a higher level of communication skills. Able to explain straightforward procedures and examinations to patients. Able to manage and respond appropriately to simple patient care requests. Participates confidently in patient transfers. Manages patient auxiliary equipment e.g catheter, oxygen during transfer or procedures.	Able to attempt all basic examinations and procedures with supervision. Able to assess their own competence and seek assistance with complex patients. Able to recognise possible patient situations and report concerns to clinical mentor. Able to reflect upon their performance during and after examinations.	Capable of performing routine procedures on uncomplicated patients. Shows some experience with imaging and accessory equipment. Able to follow protocols but requires guidance for any protocol variation. Requires extra time to perform procedures. Demonstrates greater confidence in the Nuclear Medicine environment. Increasing ability to follow and interpret departmental policies and procedures. Able to source information relating to policies and procedures in the clinical environment. Understands the structure of the clinical environment beyond their department and the role of the department in the patient's journey.	Increasing ability to identify basic errors in resultant images. Able to attempt to identify how to correct errors. Able to identify basic abnormalities, although, may not be able to use correct medical / scientific terminology to name the abnormality. Needs extra time to critique images and detect abnormalities	**Supportive supervision** Close support. Demonstration of procedures. Immediate feedback to promote confidence building. Simple, clear directions. Care exercised with pacing of instructions to avoid confusion. Withdrawal to a slightly more distant supervision (corner of the room) is encouraged through this module as the mentor and student gain confidence with each other.

Nuclear Medicine Clinical Practice Supervision and Performance Guidelines

	Communication and Patient Care	Student Characteristics / Clinical Decision Making	Nuclear Medicine Practice / Equipment / Instrumentation	Image Critique / Interpretation	Supervision Level / Supervision Characteristics
<u>Year 4</u> **(First Half)** **<u>Course:</u>** **Nuclear Medicine Clinical Practice 3** ***'Independent Student'***	Displays a higher level of patient interaction. Uses suitable language to explain procedures to patients. Uses more eye contact and personalised instructions for the patient. Able to manage more complex patient presentations and auxiliary equipment. Readily anticipates patient care issues associated with Nuclear Medicine examinations and procedures.	Shows good skills with basic examinations / procedures on less complex patients. Able to undertake, with supervision, more complex examinations / procedures on more challenging patient presentations. Able to cope with more than one demand at a time. Demonstrates strong history taking skills and is now able to act upon information gained and make suggestions to improve the patient experience with guidance.	Shows an integration of knowledge from previous cases and academic knowledge. Confident with most imaging and accessory equipment. Still requires guidance for any protocol variation for unusual patient presentations. More aware of underlying pathology and its effect on images taken eg obliques, SPECT. Still requires extra time to perform procedures. Understands and implements all departmental policies and procedures. Able to identify procedures required to implement improvements. Comfortable in the clinical environment though may still be apprehensive in remote or unusual locations eg wards, ICU, HDU, hospital clinics.	Critiques all images produced though at times requires assistance in correcting images or taking different types of images. Able to identify and name common abnormalities in images produced. Good use of medical and Nuclear Medicine terminology. Able to identify more complex abnormalities but not name at this stage.	**Collaborative supervision:** Tailoring style of supervision to what the student already knows. Immediate feedback still encouraged. Able to withdraw slightly for supervision. Instructions are able to be more complex. Still assessing suitability of patients for the student's level of comfort with the procedure / examination. At this stage the student is encouraged to be actively involved in this process.

	Communication and Patient Care	Student Characteristics / Clinical Decision Making	Nuclear Medicine Practice / Equipment / Instrumentation	Image Critique / Interpretation	Supervision Level/ Supervision Characteristics
<u>Year 4</u> (First Half) **<u>Course:</u> Nuclear Medicine Clinical Practice 4** **Nuclear Medicine Honours Clinical Practice 4** ***'Autonomous Student'***	Displays a higher level of patient interaction. Uses more eye contact and personalised instructions for the patient. Able to answer basic patient questions. Able to provide information at a basic level to patients. Able to manage more complex patient presentations and auxiliary equipment. Readily anticipates patient care issues associated with Nuclear Medicine examinations and procedures. Beginning to develop a patient centred approach to their examinations.	Attempts all examinations / procedures with increasing complexity and challenges. Able to structure examinations in a logical sequence only requiring minor assistance. Able to cope with multiple demands and begin to prioritise their work demands with guidance. Demonstrates strong clinical history taking skills and able to anticipate basic alterations to technique or protocol as a result of information gained. Shows ability to make suggestions of adaptations to technique required for more straightforward examinations. Requires assistance for more complex situations.	Shows an integration of knowledge from previous cases and academic knowledge. Confident with imaging and accessory equipment. Showing increase confidence for any protocol variation for unusual patient presentations. Shows greater awareness of underlying pathology and its effect on images taken eg obliques, SPECT. Able to anticipate potential problems so mistakes are fewer. Becoming faster at examinations and procedures. Comfortable in the clinical environment and remote or unusual locations eg wards, ICU, HDU, hospital clinics. Shows an understanding of the Nuclear Medicine Technologist's role in the multidisciplinary team.	Critiques all images produced and corrects images or identifies different types of image required. Greater ability to identify and name common abnormalities in images produced. Uses appropriate medical and Nuclear Medicine terminology most of the time. Attempts to identify and name more complex abnormalities.	**Collaborative supervision:** Tailoring style of supervision to what the student already knows. Immediate feedback still encouraged. Able to withdraw slightly for supervision. Instructions are able to be more complex. Still assessing suitability of patients for the student's level of comfort with the procedure / examination. At this stage the student is encouraged to be actively involved in this process. Supervisor still prioritising student's workload though at this stage the student is encouraged to take a greater role in this process. As the course progresses the supervision moves to a little more remote though still within 'geographical area' of the examination room.

	Communication and Patient Care	Student Characteristics / Clinical Decision Making	Nuclear Medicine Practice / Equipment / Instrumentation	Image Critique / Interpretation	Supervision Level / Supervision Characteristics
Year 4 (Second Half) **Courses:** **Nuclear Medicine Professional Entry Practice 1** **and** **Nuclear Medicine Honours Professional Entry Practice 1** ***'Proficient Student'***	Able to comfortably communicate with patients and readily answer their questions. Beginning to converse with other health professionals in relation to required imaging procedures and benefits of differing techniques and modalities. Able to use evidence based practice to support clinical decisions. Problems with patients are solved as they arise. Able to adapt where necessary to the patient's values, customs, spiritual beliefs and practices. Adopting a patient centred approach to Nuclear Medicine procedures and examinations.	Able to complete all examinations with the ability to set priorities and solve problems as they arise. Works independently with only remote supervision. Able to reflect critically on their clinical performance. Demonstrates good collection of complex patient histories and acts upon this information appropriately. Effectively solves most problems relating to patient situations as they arise. Seeks help when required but solves own problems when possible.	Able to anticipate problems and solve them as they arise. Demonstrates ability to prioritise workflow within a defined area of practice. Still requires assistance organising workflow across areas of practice. Requires less time to complete examinations. Comfortable in the clinical environment. Able to suggest possible policy improvements. Shows a greater understanding of the Nuclear Medicine Technologist's role in the multidisciplinary team. Demonstrates developing mentoring relationships with less experienced students.	Critiques images produced and corrects images or identifies different types of image required. Greater ability to identify and name common abnormalities in images produced. Uses appropriate medical and Nuclear Medicine terminology at all times. Able to identify and name more complex abnormalities.	**Consultative supervision:** Supervision would still be provided for these students though it is now provided in a remote manner. Supervisor encouraging the student to lead the examination process. Supervisor consulted at the beginning of the examination to ensure comfort on both sides with patient and examination / procedure. Gradual changing of roles across this course from supervisor initiated to student initiated discussion and decisions.

	Communication and Patient Care	Student Characteristics / Clinical Decision Making	Nuclear Medicine Practice / Equipment / Instrumentation	Image Critique / Interpretation	Supervision Level / Supervision Characteristics
<u>Year 4</u> (Second Half) **<u>Course:</u> Nuclear Medicine Professional Entry Practice 2** ***'Entry Level Practitioner'***	Shows competence in discussing issue with patients or their significant others relating to Nuclear Medicine procedures. Able to answer patient questions and provide information to them in a manner appropriate to the patient. Demonstrates ability to communicate with other members of the multidisciplinary team in a professional and informed manner. Communicates well with all levels of staff as required including at a level associated with decisions relating to imaging procedures and examinations. Able to support ideas with evidence from the literature.	Able to complete all examinations within Scope of Practice, with the ability to set priorities and solve problems as they arise. Demonstrate ability to predict and accommodate possible difficulties and challenges in the workflow and patient presentations. Able to prioritise their workload in accordance with guidelines operating within current clinical placement. Shows competence in gathering patient history, adapting techniques and anticipating issues based on information gathered. Proficient at solving many of the clinical problems as they arise and adapt techniques to situations encountered.	Shows greater confidence in their own ability to modify protocols in relation to patient history / pathology. Demonstrates ability to organise workflow across areas of practice. Able to competently and efficiently perform complex procedures on most patients. Proficient at assessing own strengths and requests assistance when required. Shows ability to take responsibility for planning entire examination / procedure. Capable of planning workload within department.	Critiques all images produced and corrects images or identifies different types of images required. Able to seek assistance when required to identify more unusual abnormalities and pathologies. Demonstrates ability to discuss all images with referring clinicians in a professional manner.	**Consultative supervision:** Supervisor available for consultation by student, as support still needed. Supervision would still be provided for these students though it is now provided in a remote manner. Students to seek assistance from supervisor.

Continuation Year 4 (Second Half)	**Communication and Patient Care**	**Student Characteristics / Clinical Decision Making**	**Nuclear Medicine Practice / Equipment / Instrumentation**	**Image Critique / Interpretation**	**Supervision Level / Supervision Characteristics**
Continuation Year 4 (Second Half) **Course: Nuclear Medicine Professional Entry Practice 2** ***'Entry Level Practitioner'***	Exhibits good ability to anticipate most situations where assistance is required and takes the leading role in most examinations regardless of the patient presentation. Shows ability to adapt to the patient presentation in most situations and ensures care is delivered to achieve best practice. Shows ability to empathise with patients. Shows a patient centred approach to examinations.	Able to reflect on and improve their clinical performance. Demonstrates ability to accurately assess the patient's ability to continue with the examination. Capable of discussing decisions with members of the multidisciplinary team in a professional and appropriate manner.	Performs procedures in a time efficient and organised manner Shows confidence in the clinical environment. Capable of discussing and implementing policy changes being suggested, within the clinical environment, based on evidence of best practice. Shows confidence in identifying best practice within the clinical environment and uses this to develop their own practice. Able to provide further assistance for less experienced students within the clinical environment.		Supervisor involved in decision making process but gradually withdrawing their input across the course. Supervisor may verify the student's decision making process.

Competency Assessments

As part of the assessment requirements of clinical courses, the student is to complete 'Competency Assessments', which are a series of short practical examinations on specific Nuclear Medicine procedures. The student has a number of 'competency assessments which are to be performed and passed whilst in the clinical setting - the type and number required will vary between clinical courses.

The student must firstly record entries in the 'Competency Record' section of the 'Clinical Portfolio, studies in which she/he has undertaken a major role. That is, the student must have had a greater than 70% involvement in the examination.

When completing Competency Assessments in the clinical environment, an assessment can only be attempted **when the minimum number of competencies (shaded area) has been completed in the competency record table.** The assessment for competency will be undertaken by a Clinical Mentor (ideally a technologist with more than 12 months Nuclear Medicine experience), who can perform this assessment using the form provided at the completion of each module.

The assessing Nuclear Medicine Technologist will mark the student as competent/not competent beside each aspect of each category that is reflective of the student's performance and include comments as necessary. ***The student will be assessed in all aspects listed below. Please note, the aspects may vary depending on the Competency Assessment being completed.***

1. **SAFE PRACTICE** - appropriate personal and patient safety, safe application of equipment, safe application of manual handling
2. **PROFESSIONAL CONDUCT** - professional behaviour shown to staff, patient and carers at all times, name badge and Luxel visible and maintenance of strict patient confidentiality
3. **COMMUNICATION AND CARE** - clear explanations to the patient, respect and courtesy shown at all times, recognition of patient needs, respects rights and sensitivities of the patient, appropriate interaction with other members of the health care team
4. **MOTIVATION AND ORGANISATION** – seeks new information, displays respect and trust in authority of others, responds well to constructive criticism, shows initiative
5. **RADIATION PROTECTION** - checks request form for authorisation and clinical details, checks patient identity, checks for pregnancy/ breastfeeding and responds appropriately, uses appropriate radiation protection for self and others, adheres to ALARA principle
6. **ROOM AND EQUIPMENT** - correct set-up and operation of imaging equipment and accessory equipment, correct choice of collimator
7. **TECHNICAL SKILLS & KNOWLEDGE** - check for correct radiopharmaceutical and dose, check appropriate patient preparation, ensure all technical factors are correct prior to acquisition, accurately positions the patient and equipment, appropriate use of immobilisation/positioning aids (if applicable), appropriate views acquired and in a logical order
8. **IMAGE ANALYSIS/PROCESSING/DISPLAY** - check integrity of raw data and offer suggestions for improvement where applicable (i.e. adequate cover of area of interest, patient movement, evaluate for artefacts), accurate ROI's drawn (if applicable), appropriate display (including intensity/windowing) and correct annotation of images

9. **IMAGE EVALUATION** –demonstrate a good understanding of normal and abnormal image appearances and quantitative results (where applicable), relate the findings to the patient history/clinical indication
10. **CONCLUSION OF EXAMINATION** – correct department pathway followed for study completion, offers appropriate information to the patient, assesses patient status prior to discharge from the department

Competency Assessments must not be attempted until the theoretical content for that examination has been covered in a preceding academic course. The full schedule for when each competency can be attempted is outlined in the 'Clinical Portfolio'.

It is the student's responsibility to supply the Clinical Supervisor with the relevant 'Competency Assessment' form in the 'Clinical Portfolio' at the time of assessment.

Examples of both the 'Competency Record' and the 'Competency Assessment' form for a Bone Scan can be found on the following pages.

PART 1.1 WBBS +/- LOCALISED VIEWS
Competency Record

Examination	Patient Class	Date completed	*Verified by: (print name)	Signature
WBBS +/- Localised Views				
WBBS +/- Localised Views				
WBBS +/- Localised Views				
WBBS +/- Localised Views				
WBBS +/- Localised Views				
WBBS +/- Localised Views				
WBBS +/- Localised Views				
WBBS +/- Localised Views				
WBBS +/- Localised Views				
WBBS +/- Localised Views				
After completing the minimum number of competencies (shaded area above) and once you feel ready, you should approach your clinical supervisor to arrange to complete the 'Competency Assessment'.				

Please ensure each assessor has recorded their details in the 'Registered Technologist/Assessor's Specimen Signatures' section.

Please note: It is <u>not</u> a requirement of this assessment for the student to perform or process any SPECT or SPECT/CT component if done as part of a Whole Body Bone or Localised Bone Study. This will be assessed in a different competency assessment.

Class 1 EASY	• **Mobile** • **Cooperative** • **No modification to technique required**
Class 2 MODERATELY DIFFICULT	• **Mobile or in a wheelchair** • **Possible communication barrier; age or language related** • **Minor modifications to technique may be required**
Class 3 VERY DIFFICULT	• **Immobile patient including trauma situation, ward patient, theatre case or mobile Nuclear Medicine** • **Limited scanning or major modification to technique required** • **Student likely to require Nuclear Medicine Technologist assistance**

PART 1.1 WBBS +/- LOCALISED VIEWS
Competency Assessment

The student must be deemed competent in all aspects listed below to achieve a pass for this assessment.

EXAMINATION COMPONENTS	COMPETENT/ NOT COMPETENT (PLEASE INCLUDE COMMENTS)
SAFE PRACTICE - appropriate personal and patient safety, safe application of equipment, safe application of manual handling	
PROFESSIONAL CONDUCT - professional behaviour shown to staff, patient and carers at all times, name badge and Luxel visible and maintenance of strict patient confidentiality	
COMMUNICATION AND CARE - clear explanations to the patient, respect and courtesy shown at all times, recognition of patient needs, respects rights and sensitivities of the patient, appropriate interaction with other members of the health care team	
MOTIVATION AND ORGANISATION – seeks new information, displays respect and trust in authority of others, responds well to constructive criticism, shows initiative	
RADIATION PROTECTION - checks request form for authorisation and clinical details, checks patient identity, checks for pregnancy/ breastfeeding and responds appropriately, uses appropriate radiation protection for self and others, adheres to ALARA principle	
ROOM AND EQUIPMENT - correct set-up and operation of imaging equipment and accessory equipment, correct choice of collimator	
TECHNICAL SKILLS & KNOWLEDGE - check for correct radiopharmaceutical and dose, check appropriate patient preparation, ensure all technical factors are correct prior to acquisition, accurately positions the patient and equipment, appropriate use of immobilisation/positioning aids (if applicable), appropriate views acquired and in a logical order	
IMAGE ANALYSIS/PROCESSING/DISPLAY - check integrity of raw data and offer suggestions for improvement where applicable (i.e. adequate cover of area of interest, patient movement, evaluate for artefacts), accurate ROI's drawn (if applicable), appropriate display (including intensity/windowing) and correct annotation of images	
IMAGE EVALUATION –demonstrate a good understanding of normal and abnormal image appearances and quantitative results (where applicable), relate the findings to the patient history/clinical indication	
CONCLUSION OF EXAMINATION – correct department pathway followed for study completion, offers appropriate information to the patient, assesses patient status prior to discharge from the department	
DATE:	
ASSESSOR'S NAME/SIGNATURE	

Please note: It is <u>not</u> a requirement of this assessment for the student to perform or process any SPECT or SPECT/CT component if done as part of a Whole Body Bone or Localised Bone Study. This will be assessed in a different competency assessment.

ASSESSOR'S COMMENTS

Assessor's Name (Please print clearly): _____

Assessor's Signature: _____ **Date:** _____

STUDENT'S REFLECTION (Mandatory)

Student's Signature: _____ **Date:** _____

Clinical Reports

For each clinical course, the student will be assessed using both a 'Formative' and 'Summative' Clinical Report. Details regarding the reports and an example of each can be found below and on the following pages.

Formative Clinical Report

Mid-way through each clinical placement the Clinical Supervisor will be responsible for completing a 'Formative Clinical Report' as a performance indicator for the student. **A set of 'Nuclear Medicine Clinical Practice Performance Guidelines' have been compiled please see example of 'Formative Clinical Report' and 'Summative Clinical Report' on following pages for complete set of guidelines to assist the Clinical Supervisor in this process.** The 'Formative Clinical Report' is an important assessment of progress and provides an opportunity to identify learning needs and goals for the student for the remainder of the placement. The mid-placement assessment should provide the foundation for the end of placement 'Summative Clinical Report' and should **NOT** be omitted without prior consultation with the Course Coordinator. It is expected that the 'Formative Clinical Report' will be discussed with the student, highlighting areas for improvement.

To complete the 'Formative Clinical Report', the Clinical Supervisor should:

1. Circle 'Satisfactory' or 'Unsatisfactory' for the sections of 'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct', making comments if required.
2. **Carefully read the 'Nuclear Medicine Clinical Practice Performance Guidelines' and then comment on the student's performance taking into consideration the standard expected for a student at this level and his/her overall performance and not isolated incidents.**
3. Include his/her name, signature and date along with any additional comments in the section provided.
4. Discuss the contents of this report with the student highlighting strengths and areas for improvement.

Summative Clinical Report

At the end of each clinical placement, the Clinical Supervisor will be responsible for completing the 'Summative Clinical Report', which will be based on the student's performance during that placement. It is to be signed by the student and the Clinical Supervisor. The 'Summative Clinical Report' is completed at the end of the placement and will contribute to the final mark.

The contents of the 'Summative Clinical Report' should be discussed with the student. The student is encouraged to comment, in the space provided, before signing the report.

To complete the 'Summative Clinical Report' the Clinical Supervisor should:

1. Circle 'Satisfactory' or 'Unsatisfactory' for the sections of 'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct', making comments if required.
2. **Carefully read the 'Nuclear Medicine Clinical Practice Performance Guidelines' and then place a 'tick' (✓) beside each aspect of each category that is reflective of the student's performance. The student should be assessed taking into consideration the standard expected for a student at this level and his/her overall performance and not isolated incidents.**

3. Include her/his, signature and date along with any additional comments in the section provided.
4. Discuss the contents of this report with the student highlighting strengths and areas for improvement.

'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct'

It is an expectation of the Clinical sites and the University that students follow safe practices whilst completing this clinical experience and students who breach 'Safety and Duty of Care' and/or 'Professional and Ethical Conduct' will be excluded from completing the placement.

Safe Practice and Duty of Care:

The student must demonstrate safe practice in the clinical setting.

Safe Practice will be demonstrated by the student who:

- Demonstrates awareness of manual handling principles in patient and staff safety
- Demonstrates the safe application of all equipment
- Is responsible for patient and personal safety
- Does not put other persons in the workplace at any risk
- Demonstrates an awareness of infection control practices
- Demonstrates an awareness of the ALARA principle

Professional and Ethical Conduct:

The student must behave in a professional and ethical manner, according to the ANZSNM Code of Conduct and Ethics as well as the University of South Australia Clinical Policies, throughout the clinical placement.

Professional conduct is demonstrated by the student who:

- Clearly wears the student identification badge at all times
- Wears a current Luxel at all times in accordance with the Medical Radiation 'Luxel' policy
- Is punctual at all times in accordance with the Medical Radiation attendance policy
- Maintains confidentiality of staff and patient information at all times
- Maintains personal hygiene and dress as stated in the Medical Radiation 'Uniform' policy
- Behaves in a professional manner to colleagues, supervisors, patients and their families at all times

If a student is deemed unsafe or unprofessional at any time during clinical practice, she/he may be removed from the clinical placement, subject to a review to assess his/her suitability to participate in the clinical course, as per the University of South Australia 'Assessment Policies and Procedures Manual, 2021' (please refer to Section 4, 'Practice-based learning', found at: http://w3.unisa.edu.au/policies/manual/default.asp).

A satisfactory grade in both of the ‘Summative’ components of ‘Safe Practice and Duty of Care’ and ‘Professional and Ethical Conduct’ is essential to pass the clinical course.

Examples of the Formative and Summative Clinical Reports are on the following pages

University of South Australia

Bachelor of Medical Radiation Science

FORMATIVE CLINICAL REPORT

Nuclear Medicine Clinical Practice 1

Student's Name:

_____

Placement Location: _____Clinical block (A or B);_____

The Graduate Qualities Assessed by this Formative Clinical Report:

1 Your body of knowledge will be expanded in the clinical environment, with particular regard to more complex nuclear medicine examinations.

2 In the clinical environment you will continually develop problem solving skills to deal with a variety of situations that arise.

3 You will be able to further develop effective team working skills within the clinical environment.

4 You will be acting in an ethical and socially responsible manner whilst on clinical placement and in your dealings with the patients and the public.

5 You will demonstrate effective communication all with members of the professional healthcare team, patients and the public. You will be able to translate written instruction to clinical situations.

6 You will demonstrate an awareness of cultural diversities encountered within the clinical setting.

Formative Clinical Report Instructions

Mid-way through each Clinical Placement the Clinical Supervisor will be responsible for completing this Formative Clinical Report as a performance indicator for the student. **A set of 'Nuclear Medicine Clinical Practice Performance Guidelines' have been compiled (on the next page) to assist you in this process.** This Formative Clinical Report is an important assessment of progress and provides an opportunity to identify learning needs and goals for the remainder of the placement. This mid-placement assessment should provide the foundation for the end of placement Summative Clinical Report and should **NOT** be omitted without prior consultation with the University of South Australia Clinical Educator / Coordinator. It is expected that this Formative Clinical Report will be discussed with the student, highlighting areas for improvement.

The contents of this Formative Clinical Report should be discussed with the student. The student is encouraged to comment, in the space provided, before signing the report.

To complete the Formative Clinical Report the Clinical Mentor should:

1. Circle 'Satisfactory' or 'Unsatisfactory' for the sections of 'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct', making comments if required.
2. **Carefully read the 'Nuclear Medicine Clinical Practice Performance Guidelines' (on the next page) and then place a 'tick' (✓) beside each aspect of each category that is reflective of the student's performance. The student should be assessed taking into consideration the standard expected for a student at this level and his / her overall performance and not isolated incidents.**
3. Include your name, signature and date along with any additional comments in the section provided.
4. Discuss the contents of this report with the student highlighting strengths and areas for improvement.

****STUDENTS TO CHECK BEFORE SUBMISSION TO COURSE COORDINATOR:**

- The clinical supervisor has completed all required sections, including signatures on page 3, 4 and 5.
- The student has commented and signed the required section on page 5.

'Nuclear Medicine Clinical Practice Performance Guidelines' *(to be referred to when assessing the student)*

These statements have been written as a guide to a student's level of expertise in a clinical practical environment. Please use them to help you when completing this Formative Clinical Report.

At the completion of the clinical placement the student should be able to:

Communication and Patient Care

- Exhibit basic communication skills with patients, staff and significant others.
- Communicate with patients at a basic level eg collect and change patients or explain simple procedures.
- Give limited instructions to patients.
- Focus on patient care and technical aspects simultaneously (beginning level).

Student Characteristics / Clinical Decision Making

- Show some experience in basic procedures but still requires close supervision for all examinations.
- Demonstrate limited practice to less complex patients.
- Display knowledge of radiation protection and infection control measures to a level to support safe practice.
- Reflect and discuss ways to improve their clinical practice.

Nuclear Medicine Practice / Equipment / Instrumentation

- Attempt patient positioning.
- Demonstrate limited experience with imaging and accessory equipment.
- Perform one task at a time well.
- Complete tasks given extra time.
- Demonstrate limited confidence in the Nuclear Medicine environment.
- Show understanding of the departmental structure and patient pathway.
- **Show understanding of incident reporting mechanisms.**

Image Critique / Interpretation

- Show ability to identify basic errors in resultant images, although, may not be able to accurately identify how to correct errors.
- **Demonstrate ability to identify obvious basic abnormality, although may not be able to use correct medical / scientific terminology to name the abnormality.**

STUDENT:

SUPERVISOR SIGNATURE:

STUDENT: _____ LOCATION: _____

'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct'

'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct' are essential components of clinical practice. Please circle either 'Satisfactory' or 'Unsatisfactory' for these elements. A 'Satisfactory' grade in both of the Formative components of 'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct' is essential to pass this clinical placement.

'Safe Practice and Duty of Care'

The student has demonstrated 'Safe Practice and Duty of Care' in the clinical setting (including appropriate personal and patient safety, safe application of Nuclear Medicine equipment, safe application of manual handling and effective infection control practices). Application of the NSQHS standards where applicable to clinical practice.

Formative	**Satisfactory / Unsatisfactory**

Comment (if required):

'Professional and Ethical Conduct'

The student must behave in a 'Professional and Ethical' manner throughout the clinical placement (including punctuality, correct attire including name badge and luxel and maintains strict patient confidentiality at all times).

Formative	**Satisfactory / Unsatisfactory**

Comment (if required):

Clinical Supervisor's name (Please print clearly): _____

Clinical Supervisor's signature: _____ Date: _____

With reference to the 'Nuclear Medicine Clinical Practice Performance Guidelines', please assess the following.

FORMATIVE CLINICAL REPORT	Well above expected level	Above expected level	At expected level	Below expected level	Well below expected level
COMMUNICATION AND PATIENT CARE					
Greets patients courteously and verifies their identity					
Attempts patient explanations for Nuclear Medicine studies					
Communicates appropriate instructions to the patient, with guidance					
Recognises changes in patient's condition and notifies a health professional					
Safely handles equipment attached to patients (O2, IV), with supervision					
Recognises patient's physical needs					
Responds appropriately to patient's physical needs, with guidance					
Respects the rights and sensitivities of patients and their families					
Correctly responds to instructions					
Clearly expresses any concerns to the appropriate staff member					
Interacts appropriately with other members of the health care team					
STUDENT CHARACTERISTICS / CLINICAL DECISION MAKING					
Seeks new information and knowledge					
Shows initiative and actively participates in assisting patients and the Nuclear Medicine team					
Displays respect and trust in the authority of others					
Responds positively to constructive criticism					
Prepares the imaging room before the patient enters, with guidance					
Maintains a neat and orderly work area					
Displays initiative but understands own limitations					
Attempts to improve technical skills and knowledge during placement					
Checks request form for authorisation					
Adheres to the ALARA principle					
Wears, changes and removes gloves / gown when appropriate					
Uses appropriate radiation protection for self and others					
NUCLEAR MEDICINE PRACTICE / EQUIPMENT / INSTRUMENTATION					
Checks the request details and ensures correct patient has presented for study					
Attempts patient positioning for routine studies					
Attempts equipment positioning for routine studies					
Attempts to take appropriate views in a logical sequence, with guidance					
Demonstrates knowledge and application of theory covered during university program					
Practices 'Standard Precautions', as necessary					
Shows understanding of departmental structure and patient pathways					
Safely manipulates instruments and accessory equipment with supervision					
Returns accessory equipment to storage location					
Displays a basic knowledge of the gamma camera and control console					
IMAGE CRITIQUE / INTERPRETATION					
Labels film (if applicable) / screen captures and uses appropriate intensity, with guidance					
Attempts to evaluate technical aspects of resultant images					
Demonstrates ability to identify obvious and basic abnormalities					
Correctly follows department pathway at study completion					

If the Clinical Mentor is unable to rate a particular criterion at the time of assessment, she/he should indicate this by entering N/A adjacent to the appropriate criterion.

CLINICAL SUPERVISOR'S COMMENTS:

I understand the clinical requirements of / for the student for the course Nuclear Medicine Clinical Practice 1.

Clinical Supervisor's name (Please print clearly): _____

Clinical Supervisor's signature: _____ Date: _____

STUDENT'S COMMENTS (mandatory):

I understand the clinical requirements for the course Nuclear Medicine Clinical Practice 1.

Student's Signature: _____ Date: _____

Report Form adapted from the 'Student Clinical Handbook', The Michener Institute for Applied Health Sciences, Toronto, Ontario. (Revised by Kelly Dohnt and Dr Diana Gentilcore, March 2011, Updated 2020).

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University of South Australia

Bachelor of Medical Radiation Science

SUMMATIVE CLINICAL REPORT

Nuclear Medicine Clinical Practice 1

Student's Name:

_____

Placement Location: _____Clinical block (A or B);_____

The Graduate Qualities Assessed by this Summative Clinical Report:

1 Your body of knowledge will be expanded in the clinical environment, with particular regard to more complex nuclear medicine examinations.

2 In the clinical environment you will continually develop problem solving skills to deal with a variety of situations that arise.

3 You will be able to further develop effective team working skills within the clinical environment.

4 You will be acting in an ethical and socially responsible manner whilst on clinical placement and in your dealings with the patients and the public.

5 You will demonstrate effective communication all with members of the professional healthcare team, patients and the public. You will be able to translate written instruction to clinical situations.

6 You will demonstrate an awareness of cultural diversities encountered within the clinical setting.

Summative Clinical Report Instructions

At the end of each clinical placement, the Clinical Mentor will be responsible for completing this Summative Clinical Report, which will be based on the student's performance during that placement. It is to be signed by the student and the Clinical Mentor. This Summative Clinical Report is completed at the end of the placement and will contribute to the final mark.

The contents of this Summative Clinical Report should be discussed with the student. The student is encouraged to comment, in the space provided, before signing the report.

To complete the Summative Clinical Report the Clinical Mentor should:

1. Circle 'Satisfactory' or 'Unsatisfactory' for the sections of 'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct', making comments if required.
2. **Carefully read the 'Nuclear Medicine Clinical Practice Performance Guidelines' (on the next page) and then place a 'tick' (✓) beside each aspect of each category that is reflective of the student's performance. The student should be assessed taking into consideration the standard expected for a student at this level and his / her overall performance and not isolated incidents.**
3. Include your name, signature and date along with any additional comments in the section provided.
4. Discuss the contents of this report with the student highlighting strengths and areas for improvement.

****STUDENTS TO CHECK BEFORE SUBMISSION TO COURSE COORDINATOR:**

- The clinical supervisor has completed all required sections, including signatures on page 3, 4 and 5.
- The student has commented and signed the required section on page 5.

'Nuclear Medicine Clinical Practice Performance Guidelines' *(to be referred to when assessing the student)*

These statements have been written as a guide to a student's level of expertise in a clinical practical environment. Please use them to help you when completing this Summative Clinical Report.

At the completion of the clinical placement the student should be able to:

Communication and Patient Care

- Exhibit basic communication skills with patients, staff and significant others.
- Communicate with patients at a basic level eg collect and change patients or explain simple procedures.
- Give limited instructions to patients.
- Focus on patient care and technical aspects simultaneously (beginning level).

Student Characteristics / Clinical Decision Making

- Show some experience in basic procedures but still requires close supervision for all examinations.
- Demonstrate limited practice to less complex patients.
- Display knowledge of radiation protection and infection control measures to a level to support safe practice.
- Reflect and discuss ways to improve their clinical practice.

Nuclear Medicine Practice / Equipment / Instrumentation

- Attempt patient positioning.
- Demonstrate limited experience with imaging and accessory equipment.
- Perform one task at a time well.
- Complete tasks given extra time.
- Demonstrate limited confidence in the Nuclear Medicine environment.
- Show understanding of the departmental structure and patient pathway.
- **Show understanding of incident reporting mechanisms.**

Image Critique / Interpretation

- Show ability to identify basic errors in resultant images, although, may not be able to accurately identify how to correct errors.
- **Demonstrate ability to identify obvious basic abnormality, although may not be able to use correct medical / scientific terminology to name the abnormality.**

STUDENT:

SUPERVISOR SIGNATURE:

STUDENT: _____ LOCATION: _____

'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct'

'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct' are essential components of clinical practice. Please circle either 'Satisfactory' or 'Unsatisfactory' for these elements. A 'Satisfactory' grade in both of the Summative components of 'Safe Practice and Duty of Care' and 'Professional and Ethical Conduct' is essential to pass this clinical placement.

'Safe Practice and Duty of Care'

The student has demonstrated 'Safe Practice and Duty of Care' in the clinical setting (including appropriate personal and patient safety, safe application of Nuclear Medicine equipment, safe application of manual handling and effective infection control practices). Application of the NSQHS standards where applicable to clinical practice.

Summative	**Satisfactory / Unsatisfactory**

Comment (if required):

'Professional and Ethical Conduct'

The student must behave in a 'Professional and Ethical' manner throughout the clinical placement (including punctuality, correct attire including name badge and luxel and maintains strict patient confidentiality at all times).

Summative	**Satisfactory / Unsatisfactory**

Comment (if required):

Clinical Supervisor's name (Please print clearly): _____

Clinical Supervisor's signature: _____ Date: _____

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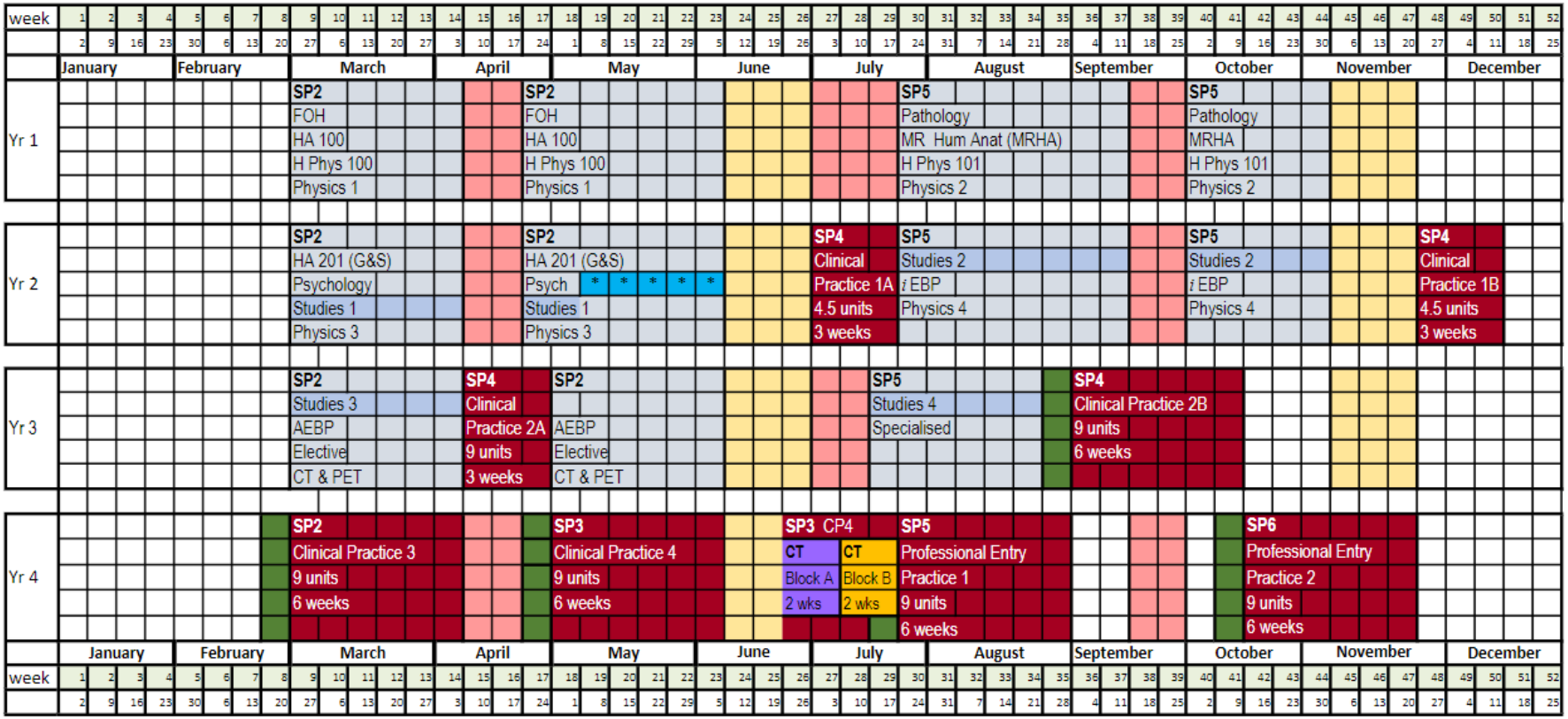
Grid of University of South Australia Program 2023

2023 (NM) Non-Honours Clinical Grid

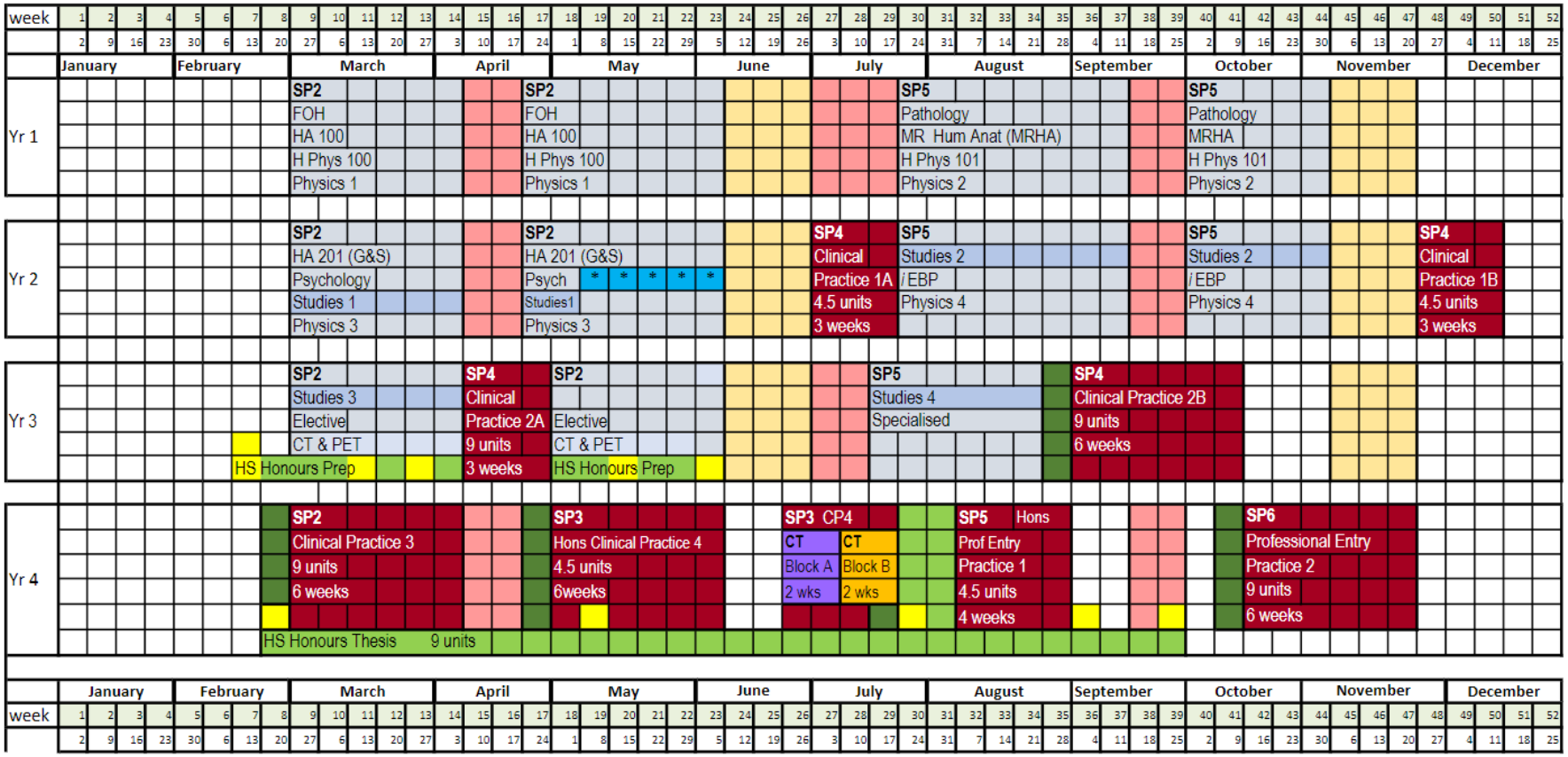


KEY:

	Shared academic course		Regular University breaks		Clinical course (Placement)	*	One hour CP1 workshop per week
	Discipline specific academic course		Exam period		Pre-clinical workshop		
					CT Placement 1		
					CT Placement 2		

Grid of University of South Australia 'with Honours' Program 2023

2023 (NM) Honours Clinical Grid



KEY:

	Shared academic course		Regular University breaks		Clinical course (Placement)	*	One hour CP1 workshop per week
	Discipline specific academic course		Exam period		Pre-clinical workshop		
	Honours Course		Honours sessions				