



**Criterion 7.4 - Subject outlines identifying content focused on or related to critical inquiry and evidence-based research across the course.**

**Professional Issues for Sonographers: RADY 5024**

Although students have come to the Medical Sonography courses with an undergraduate degree, it is not possible to work with the assumption that they already have a developed critical inquiry skill set. Nor are we able to assume a strong understanding of finding and appraising the evidence base behind particular learning topics.

This subject provides students with an orientation to these concepts, and the assessments are established to provide a base on which students can build their understanding and working knowledge of critical inquiry and evidence appraisal as they progress through the rest of the course. Foundational concepts of research ethics are also reinforced.

**Ultrasound Physics and Instrumentation: RADY 5030**

Students are encouraged to actively participate in online discussions where they can help each other with difficult topics. The subject coordinator initiates discussions, and actively encourages students to answer each other's questions and talk about answers.

The three written assignments require the student to access a wide range of scholarly reading including textbook, journal articles and reputable websites for sourcing information.

**Superficial Parts Sonography: RADY 5015**

This is a level 1 subject, with the assessments based on appropriate Research skill development framework (RSD) and work skill development levels (WSD) for the development of research skills in sonography graduates.

Case scenario assignment (written and presentation)

Clinical reasoning, problem solving, and critical reflective questions are included in the case scenario assignment.

Students are to recommend modifications to clinical scanning practice based on their case scenario findings and are also required to look at literature on the topic.

**Abdominal Sonography: RADY 5013**

Active engagement in online discussions is strongly encouraged in this course. The course coordinator takes the lead by posing questions on the online discussion forum and during real time zoom sessions, motivating students to not only respond to these queries but also engage in discussions with their peers. This collaborative approach fosters a dynamic learning environment and encourages students to think critically.



There are also two case study assignments which necessitate students to delve into a set of questions centred around provided case scenarios. Employing critical inquiry skills, students analyse the real-world case provided for the assignment and delve into a plethora of scholarly resources, including textbooks and journal articles, to effectively address a number of directed questions related to the clinical setting. Given the introductory nature of this course (level 1), assessors provide substantial feedback to guide students in reflecting on their critical analysis and research-building skills. This feedback is integral to students applying these skills to the second assignment, ensuring a robust learning progression throughout the study period and allows students to develop and then build on their critical thinking and research skills.

### **Vascular Sonography: RADY 5016**

This is a level 2 subject: students are required to build on their level 1 course work and utilise research skills in assessments and self-directed learning. The Assessments encourage students to think critically and to further develop their research skills in relation to sonography best practice in the clinical setting. The summative Clinical Decision-Making case study require students to create a presentation and then share with other students. This provides an avenue of reflection and dialogue for each student as they review others work.

Background to research is the utilisation of scholarly resources, including journal articles and textbooks. This process involves a critical comparison between their own practices and evidence-based standards. The goal is for students to reflect on their own practice in vascular settings and integrate and consolidate their findings into their clinical practice, thereby advancing their proficiency in vascular imaging.

This course also encourages active engagement of students in the online discussion forum and the real time online zoom sessions. The course coordinator takes the lead by posing questions on the online discussion forum and during real time zoom sessions, motivating students to not only respond to these queries but also engage in discussions with their peers. This collaborative approach fosters a dynamic learning environment and encourages students to think critically in a time sensitive environment which helps students practice this skill in a safe environment to then apply to their fast-paced work environment.

### **Obstetric and Gynaecologic Sonography: RADY 5014**

This is a level 2 subject, with the assessments based on appropriate Research skill development framework (RSD) levels for the development of research skills in sonography graduates.

The summative and formative assessments help to teach students research skills, as well as to upskill their digital presentation skills. Self-evaluation and peer sharing helps students examine their own practices, and to become reflective with elements of self-regulation. The subject fosters ongoing dialogue between students and teachers about what constitutes



good work and how it can be achieved. It develops students' capacity to create 'internal feedback', self-assessment ability, and the capability to seek and process feedback information. This works to increase student confidence and enables them to look at areas where they are successful or need to seek help – all of which are very important attributes in a workplace.

### **Musculoskeletal Sonography: RADY 5029**

This is also a level 2 subject, with assessments based on encouraging students to think critically and to further develop their research skills in relation to sonography best practice and how this can apply to the clinical setting. The summative case study assignment requires students to perform a routine shoulder ultrasound and then reflect on their practice.

To complete the assignment, students employ scholarly resources, including journal articles and textbooks. This process involves a critical comparison between their own practices and evidence-based standards. The ultimate goal is for students to offer recommendations on integrating these findings into their clinical practice, thereby advancing their proficiency in musculoskeletal skills.

This course also encourages active engagement of students in the online discussion forum and also the real time online zoom sessions. The course coordinator takes the lead by posing questions on the online discussion forum and during real time zoom sessions, motivating students to not only respond to these queries but also engage in discussions with their peers. This collaborative approach fosters a dynamic learning environment and encourages students to think critically in a time sensitive environment which helps students practice this skill in a safe environment to then apply to their fast-paced work environment.

### **Clinical Sonography Portfolio: RADY 5026**

This capstone subject utilises assessments which are based on Research skill development framework (RSD) and work-skill development framework (WSD) appropriate to this level in the development of research skills and work readiness in sonography graduates. Students are reflective in their own clinical training as well as reviewing their own departmental protocols for their major assessment piece, the Protocol Review. Peer sharing of these assessments helps students examine their own practices, and to become reflective on other students' protocols and issues. This fosters ongoing dialogue between students and teachers. This course also encourages active engagement of students in the online discussion forum separate to assignment submissions and the real time online zoom/tutorial sessions. Students are encouraged to pose questions, which in turn motivates students to not only respond to these queries but also engage in discussions with their peers. This collaborative approach fosters a dynamic learning environment and encourages students to think critically in a time sensitive environment which helps students practice this skill in a safe environment to then apply to their fast-paced work environment.



### **Fetal echocardiography: RADY 5027**

This masters elective course enables students develop advanced concepts and knowledge in the course through critical inquiry and application of evidence-based practice.

Assignments require students to conduct a comprehensive but succinct literature review, critically appraise journal articles and discuss them, identify international guidelines and protocols and apply it to their assignment. Blogs and reflective entries encourage them to reflect on any aspect of their study or practice as well as design protocols for departments where specific protocols do not exist.

### **Advanced Obstetric and gynaecologic sonography RADY 5031**

This is another master elective course which enables critical inquiry, self-reflection, development and application of evidence-based practice through project-based learning.

Assignments are designed such that students can explore concepts and topics in depth, examine protocols, get upskilled in advanced areas of obstetric and gynaecologic scanning and create outputs that are useful for their department. These could be protocols, information resources for patients such as information pamphlets or videos, training modules in specific aspects or design improvements for clinical practice, all of which require critical inquiry and reflective practice.

### **Breast Sonography: RADY 5002**

The case scenario authentic assessment requires selection of an interesting case by the student and critical problem-solving including evaluation of protocol and clinical sonographic features based on evidence. A grading matrix based on research skill framework is provided. (RSD)

The on-going e-portfolio discussion is based on work-skill development framework (WSD) and all the four activities is designed to cover relevant work practice skills in breast sonography.

### **Advanced Vascular Sonography RADY 5034**

This is a level 3 elective master's course. It offers student development in evidence-based practice through modular learning, and assessments in advanced vascular settings as set out on in the Professional Competency Framework. The summative assignments are designed to encourage students to explore clinical decision-making assessment of patient care, and then review and share with others.

Students are tasked with crafting a PowerPoint presentation using evidence-based research clinical scenario of their choosing. They are then required to present their findings to the student cohort via learnonline pages. These pages offer students to have a comprehensive



discussion of the presented case, reflect on diverse clinical practices, and provide and receive constructive feedback from peers.

The course coordinator also utilises the discussion forum to post interesting peer reviewed journal articles or cases that are relevant to the weekly module being completed by students. Students are also encouraged to post any interesting cases that they have encountered within their workplace which then prompts the cohort to reflect on their practice and conduct their own inquiry and research to ensure best evidence-based practice is being upheld within the clinical setting.

### **Advanced Musculoskeletal Sonography: RADY 5025**

The case scenario and case report assessments for this master's course challenge students to exhibit a high level of advanced critical inquiry and the dissemination of evidence-based research. In the case scenario assessment, students are tasked with crafting a PowerPoint presentation using evidence-based research on a chosen case study. They are then required to present their findings to the student cohort via zoom. This interactive session involves students lead by the course coordinator to have a comprehensive discussion of the presented case, reflect on diverse clinical practices, and provide and receive constructive feedback from peers.

For the case report assessment, students are required to reflect on and present an advanced musculoskeletal examination that they have performed in their clinical workplace in the form of a journal article. This involves conducting in-depth research on scholarly references using critical inquiry to elucidate evidence-based best practices. In addition, students provide insightful perspectives and recommendations to enhance clinical practice, showcasing a thorough understanding of advanced musculoskeletal skills.

The course coordinator also utilises the discussion forum to post interesting peer reviewed journal articles or cases that are relevant to the weekly module being completed by students. Students are also encouraged to post any interesting cases that they have encountered within their workplace which then prompts the cohort to reflect on their practice and conduct their own inquiry and research to ensure best evidence-based practice is being upheld within the clinical setting.

### **Mammography: RADY 5003**

- Group workshops encourage reflective practice where individual cases are discussed from the workshop and related to clinical practice.
- Communication lecture includes reflective practice on client communications in the workplace.
- Imaging the difficult to position client is a lecture with group discussion on individual experiences.
- The assignment and case study are designed to encourage reflective practice with marks awarded for own experience.