UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of
Health Sciences

Fakulteit Gesondheidswetenskappe
Lefapha la Disaense tša Maphelo

B RAD HONOURS IN DIAGNOSTIC ULTRASOUND BRIDGING PROGRAMME: GUIDELINES FOR UNDERGRADUATE DEGREE EQUIVALENCE STATUS

DEPARTMENT OF RADIOGRAPHY

2025

COMPILED BY: Prof. RM Kekana, Dr. KM Sethole and Mrs. Z Hollard
Revised:

Table of Contents

1 INTRODUCTION

Thank you for taking the initiative to formally pursue your continued professional development through your application to the Bachelor in Radiography: Diagnostic Ultrasound Honours programme.

1.1 PURPOSE OF THE BRIDGING PROGRAMME

Applicants to the Bachelor of Radiography Honours in Diagnostic Ultrasound programme, (code: 10247017) who own an undergraduate diploma in Diagnostic Radiography or Ultrasound cannot be admitted directly to the honours programme. The reason is that the diploma is assigned to Level 6 and the honours programme is assigned to Level 8 on the National Qualifications Framework (NQF). The NQF, is a policy overseen by the South African Qualifications Authority (SAQA), with the Council on Higher Education (CHE) playing a crucial role in coordinating and generating standards for higher education qualifications within the NQF. It is therefore required that applicants demonstrate competency that they have attained a knowledge level that is equivalent to NQF – level 7 in Ultrasound. This bridging is also required to comply with General Academic Regulation G.62 of the University of Pretoria (UP) before admission to the Bachelor of Radiography Honours: in Diagnostic Ultrasound programme .

1.2 REQUIREMENTS TO COMPLETE BRIDGING PROGRAMME

To complete the bridging programme, the applicant is required to:

1.2.1 Attend and pass a Research Methodology module that carries a minimum of 16 credits and is offered at NQF – level 7.

1.2.2 Study for a minimum of six months, sit for the examinations, and pass the bridging examination in Ultrasound theory and observation. The examination is set at the level of the first and second year of the Bachelor's degree in Ultrasound, formerly approved by the Health Professions Council of South Africa. The examination is externally moderated.

1.2.3 Candidates are expected to pass all examinations, namely Research Methodology, Ultrasound Theory, with a minimum of 60%, and visit the ultrasound department for observation.

1.2.4 There are only two opportunities to pass each part of the bridging programme. Failure to pass after the second attempt of a section/s of the bridging programme will permanently exclude the candidate from challenging the bridging process.

1.3 STRUCTURE OF THE BRIDGING PROGRAMME

1.3.1 Candidates can complete the Research Methodology course independently. This course can be taken through the Enterprises Solutions, the Business wing of the University of Pretoria. This is equivalent to 16 credits and equivalent to the Research in Healthcare Sciences (RHC 480) module, which was offered by the School of Healthcare Sciences. The course offered through Enterprises Solutions is non-subsidised and offered for non-degree purposes.

Should candidates be unable to enrol in the Research Methodology course offered through the Enterprises Solutions, it is acceptable to enrol in a research methodology course offered at any institution of higher education, provided the Academic Advisory committee of the School of Health Care Sciences approves the curriculum of that institution. (Please contact the Department of Radiography for further advice on acceptable courses that can be followed).

1.4 SITTING THE WRITTEN BRIDGING EXAMINATION

1.4.1 You are required to make an online application to the University of Pretoria (UP) at *https://www.up.ac.za/online-application*. Applications open in April and close at the end of September of each year.

1.4.2 You will require a UP student number in order to sit the bridging examination.

1.4.3 The examination will be done online. You will be given special access to the University's Teaching and Learning System to take this examination.

1.4.4 The bridging examination is scheduled in March/ April and September/October of each year.

1.4.5 Please inform Prof. RM Kekana, email address: mable.kekana@up.ac.za about the examination session you wish to take.

1.4.6 It is hereby acknowledged that the bridging course candidates will acquire their experience from any clinical facility.

1.4.7 An observation checklist specially designed for the bridging course will be prepared in accordance with learning objectives as outlined in the bridging programme.

1.5 UNIVERSITY PROCESS ON SUCCESSFUL COMPLETION OF BRIDGING PROGRAMME

On passing the examinations, you will need to submit the following documentation:

a) a certified copy of your diploma in diagnostic radiography.
b) a transcript of your results for the 3 years of training,
c) a certified copy of your identity document,
d) a certified copy of your matriculation certificate,
e) a letter addressed to the head of department motivating your reasons for wanting to enrol in the B Rad Honours programme.

All documentation, together with the entrance examination results, is presented by the Department of Radiography to the Academic Advisory Committee of the School of Health Care Sciences, thereafter to the Faculty Board of Health Sciences. The submission is then presented for final approval by the University Senate meeting for permission to be granted special status to be admitted to the honours programme. This administrative process takes 9-12 months to complete. Once approval is granted by Senate, you will be admitted to the honours programme.

2 SCOPE OF THE BRIDGING PROGRAMME

2.1 RESEARCH MODULE

Expected Learning Outcomes:
Upon successful completion of the course, the student will know the following: Concepts of research; research process; research studies appraisal; planning and developing literature review; developing research idea and research question; research principles in designing research proposal; research proposal writing

Content

Dates (specific to be announced)	Content	Lecturer
Week 1	Orientation to health sciences research; research and theory.	
Week 2	Overview of the research process and identifying research problems	
Week 3	Literature review; defining the research question and formulating a hypothesis	
Week 4	Preparing a research proposal – presentation of group research idea	
Week 5	Quantitative research	
Week 6	Quantitative research	
Week 7	Introduction of qualitative research	
Week 8	Qualitative research	
Week 9	Mixed-method research	
Week 10	Module test – online in **Computer Based Test (CBT) lab – Prinshof South campus?**	
Week 11	Ethical considerations in the conduct of health sciences research	
Week 12	Ethical considerations and practical applications	
Week 13	**Special test according to the university regulations** **Compulsory Assignment submission**	
Week 14	Feedback on module test and preparation for the examination.	
Week 15 (2 hours summative examination) Date to be confirmed	Summative examination – on-line in the Computer **Based Test (CBT) lab – Prinshof South campus?**	

Assessments

Formative assessment (Semester mark)		Summative assessment: Exam mark	
Class test	10%		
Module test	50%	Theory examination	100%
Research proposal (Group Project)	40%		

Pass mark calculation: Semester mark + Exam Mark/ 2 = 50%
To be admitted to the B Rad Hons programme, the candidate must have obtained 60% and above as the final pass mark.

Learning sources

a. Botma, Y, Greef, M, Mulaudzi, FM & Wright SCD. 2010. *Research in health sciences.* Heinemann, Cape Town. **ISBN:** 978-0-7962-2840-6.

b. Brink, H, Van der Walt, C & Van Rensburg G. 2017. *Fundamentals of research methodology for healthcare professionals.* Fourth Edition. Juta, Cape Town. **ISBN:** 9781485124689

2.2 ANATOMY, PHYSIOLOGY & EMBRYOLOGY

Expected Learning Outcomes:
The module will enable students to gain the relevant anatomy and physiological background applicable to MIRS in the following topics: Terminology, Basic Chemistry, The Cell, Skeletal system, Osseous Tissue, Female Reproductive system, Endocrine system, Nervous system, Special senses, Cardiovascular system, Respiratory system, and Digestive system.

Content: Anatomy
- Describe and apply all anatomical terminology.
- Describe the osteology of the appendicular skeleton.
- Describe the osteology of the axial skeleton.
- Describe the types of tissues in the body.
- Discuss the classification and functions of epithelial tissue.
- Compare the structures and functions of the various types of connective tissue.
- Describe the muscle and neural tissue of the body.
- Locate the major endocrine organs.
- Describe the anatomy of the female reproductive system
- Describe the mammary glands
- Discuss the organisation of the nervous system
- Describe the structure of nervous tissue
- Outline the structure of the central nervous system
- Describe the structure of the peripheral nervous system
- Describe the structure of the eye, ear, and tongue
- Describe the anatomy of the heart.
- Discuss the structure of blood vessels.
- Describe the anatomy of the respiratory system
- Describe the structure of the gastrointestinal tract
- Describe the structure of the oral cavity, pharynx, and oesophagus
- Describe the structure of the stomach
- Describe the structure of the small intestine and associated glandular organs
- Know anatomy of abdomen/pelvis and obstetrics, liver, kidneys, spleen etc.

Content: Physiology

- Define the basic principles, terms, and concepts of Physiology.
- Describe the different levels of organisation in living organisms.
- Identify the organ systems of the body.
- Outline the characteristics of living organisms.
- Discuss the survival needs of living organisms.
- Discuss the importance of homeostasis in living organisms.

2.3 PROFESSIONAL PRACTICE

Expected Learning Outcomes:

The learner acquires the knowledge and skills required to become a professional member of the healthcare team. The learner will have insight, knowledge, and skills regarding your role as a member of the medical profession in terms of patient care, first aid procedures, ethical responsibilities, and the ability to communicate with different types of patients in the Ultrasound department. The learner will also have knowledge and skills learnt in this module that will further be developed in the B Rad Honours degree.

Content

- Basic Safety in the medical imaging department
- Academic Literacy
- Introduction to the professional environment
- Human rights, Ethics & Medical law
- Basic communication skills
- Immobilisation and transfer techniques
- Infection, Hygiene & Sterilis ation
- Practical patient care procedures
- Drugs used in the medical imaging department
- The emergency
- Cultural and social diversity
- First Aid

2.4 PATHOLOGY

Expected Learning Outcomes:

The purpose of the module is to make students conversant with basic medical terminology related to pathological conditions. It introduces the student to the foundational principles of pathological processes that will underpin the knowledge of the specific systems pathology, which will be integrated into the subsequent years of study.

Content

- Introduction to Medical Terminology
- Aetiology of disease
- Cell necrosis and degeneration
- Inflammation and infection
- Repair and healing
- The immune response

- Disorders of growth
- Circulatory disorders
- Genetic disorders & effects of radiation on normal tissue - Infective diseases

2.5 ULTRASOUND IMAGING TECHNOLOGY

Expected Learning Outcomes:
The purpose of this module is to introduce the student to the physical principles of diagnostic ultrasound, and its interactions with human tissue, which allow its use as a valuable diagnostic imaging modality. This module will form a basis for application in the clinical context when registered for BRad Honours UltraS.

Content
- Introduction to Ultrasound Nomenclature
- Knobology, Basic Machine Overview and Setup
- Image Optimisation Techniques
- Image orientation
- The Elementary Physics of Waves
- Pulse-echo Principle, Piezo-electric Effect and Attenuation in Tissue
- Ultrasound Beam
- Power and Intensity
- Transducers – Frequency and Shape
- Types of ultrasound imaging: A-Mode, B-Mode (gray-scale), Doppler, 3D, 4D
- Artefacts

2.6 ULTRASOUND PRACTICE

The student would have a basic knowledge of the ultrasound examination procedure: preparation of the workstation and the patient, selection of transducer, the ultrasound technique and the basic anatomical structures demonstrated on the ultrasound images of specific ultrasound examinations:

Content
- Introduction to ultrasound, terminology, clinical principles, and the role of the sonographer
- Ultrasound assessment/examination of the abdomen - liver, gall bladder, spleen, pancreas, kidneys, urinary bladder, aorta and IVC.
- Ultrasound assessment of the non-pregnant female reproductive system (Gynaecology) – urinary bladder, uterus, ovaries.

2.7 ULTRASOUND CLINICAL PRACTICE 1

Content

- Communication
- Professionalism
- Care of the patient

3 ASSESSMENTS

3.1 ULTRASOUND PRACTICE AND THEORY

Practice	
visit an ultrasound department to observe cases – compile a logbook for the observed cases *(addendum 1).* To be admitted to the bridging examination, the candidate must submit the observation log book and the completed tick sheet.	
Theory-based.	**Written examination**
Part A: Anatomy, Physiology and Pathology. (2 hours paper)	100 marks
Part B: Ultrasound content and Physics (2 hours paper)	100 marks

Pass mark calculation for written examination: To be admitted to the B Rad Honours programme, the candidate must have obtained 60% and above as the final pass mark in each of the three Parts of the Examination.

4 LEARNING SOURCES

1. Hall JE and Hall ME. Guyton and Hall Textbook of Medical Physiology, Fourteenth Edition. 2021
2. Drake RL, Vogl AW, Mitchell AWM. Gray's Anatomy for Students. 5th ed; 2024.
3. Netter FH. Atlas of Human Anatomy. 8th ed. Elsevier Inc.; 2022*C20180044345)
4. SHELTON, H. (2025) *KOWALCZYK'S RADIOGRAPHIC PATHOLOGY FOR TECHNOLOGISTS: radiographic pathology for... technologists*. [S.l.]: CHURCHILL LIVINGSTONE.
5. Bates, J. (2018). Abdominal ultrasound: How, why and when (3rd ed.). Elsevier. ISBN: 9780702075372
6. Bushong, S. (2021). Radiographic science for technologists (12th ed.). Elsevier. ISBN: 9780323081351
7. Chudleigh, P., & Thilaganathan, B. (2018). Obstetric ultrasound: How, why and when (5th ed.). Elsevier. ISBN: 9780702075372
8. Gibbs, V. (2009). Ultrasound physics and technology: How, why and when (1st ed.). Elsevier. ISBN: 9780702030340
9. Gibbs, Vivien; Cole, D. and Sassano, A. (2014) Ultrasound Physics and Technology: How, Why and When. eBook. London: Elsevier Health Sciences UK, 9780702049927, 0702049921
10. Kowalczyk, N., & Mace, J. D. (2022). Radiographic pathology for technologists (7th ed.). Elsevier. ISBN: 9780323089029
11. Watson, N. (2019). Chapman and Nakielny's guide to radiological procedures (7th ed.). Elsevier. ISBN: 9780702072562

5 ADDENDUM 1

5.1 LOGBOOK

The logbook serves as evidence on which your clinical competency will be measured. This logbook aims to help the student record their clinical training from the ultrasound department, in compliance with the Professional Board for Radiography and Clinical Technology, of the Health Professions Council of South Africa. The logbook consists of Form A, Form B, Form C and Form D.

Important note:
The prospective ultrasound student will be making observations in ultrasound departments, that are not necessarily approved by the Radiography and Clinical Technology Board of the HPCSA. The prospective students are also not registered as Ultrasound students yet. It is for that reason that they are only allowed to observe the examinations being performed in the Ultrasound department.

They will only be expected to perform the Ultrasound examinations, upon their registration as Ultrasound students, with the Department of Radiography at the University of Pretoria. Upon this registration, they will also be registered with the HPCSA as ultrasound students. This registration will allow them to practice, learn and perform ultrasound examinations under the supervision and guidance of a qualified ultrasound practitioner, as approved by the RCT Board of the HPCSA.

Guidelines on completing the log book:

The prospective student is expected to observe the qualified ultrasonographer or another healthcare professional performing ultrasound examinations. These can be radiologists, clinical technologists or any other medical specialists as registered by the Health Professions Council of South Africa (HPCSA). To help the prospective student keep an accurate record of the observations made, the log book has been structured in a way that will enable both the prospective student and lecturer at the University to determine the development needs and progress in the ultrasound clinical environment.

FORM A: Attendance register

The student must record the hospital/department/ level, the student worked in during a particular week. You are advised to print out this form and use it every time you visit the ultrasound department. Provide dates and times of arrival and departure in the clinical setting, to monitor punctuality. If you visited the department on March 15, record it as such or April 09 Etc. There is no specific number of days stipulated. Make sure that you can record the activities that you observed as you are preparing for the bridging course. Let the supervisor for the day sign the time in and time out on the correct date.

FORM B: Evidence of the examinations and procedures observed

Record the date and the procedures/ radiographic examinations performed, and the patient clinical history for each examination done, one patient per row. Patients' hospital numbers should be recorded correctly as they will be used as evidence of examinations observed and will be used to retrieve patient information should the need arise. All examinations must be

signed out by the qualified sonographer who approved the final images for the examination. A minimum of 10-20 examinations should be observed. Please make sure the examinations observed are for the different body parts for different clinical conditions.

FORM C: Professional conduct form

Form C, is used by the supervisors to report on student conduct and working relations. On completion, the supervisor must provide an overall rating of the prospective student's conduct. The supervisor must also write their name in full, not just a signature.

Please take note: Accurate record-keeping is very important, as it is the only way that we can determine if the prospective student has observed ultrasound examinations and procedures as required.

FORM D: Declaration for plagiarism

All students and prospective students must complete and sign the form for plagiarism before submission as confirmation that the contents of the logbook are their own work.

Submission guidelines and dates

Contents of the Logbook must be submitted as a PORTFOLIO OF EVIDENCE. The template is provided at the end of this document, after the Declaration of Plagiarism.

The logbook submission dates:

The portfolio must be completed and submitted to the Radiography Department, **two weeks prior to the examination date**. A click-up submission link will be provided. Students who do not comply with this requirement will miss the bridging examination for that year.

FORM A: ATTENDANCE REGISTER

Month: 2025						
Day:						
1 Name/time in Name/time out	2 Name/time in Name/time out	3 Name/time in Name/time out	4 Name/time in Name/time out	5 Name/time in Name/time out	6 Name/time in Name/time out	7 Name/time in Name/time out
8 Name/time in Name/time out	9 Name/time in Name/time out	10 Name/time in Name/time out	11 Name/time in Name/time out	12 Name/time in Name/time out	13 Name/time in Name/time out	14 Name/time in Name/time out
15 Name/time in Name/time out	16 Name/time in Name/time out	17 Name/time in Name/time out	18 Name/time in Name/time out	19 Name/time in Name/time out	20 Name/time in Name/time out	21 Name/time in Name/time out
22 Name/time in Name/time out	23 Name/time in Name/time out	24 Name/time in Name/time out	25 Name/time in Name/time out	26 Name/time in Name/time out	27 Name/time in Name/time out	28 Name/time in Name/time out
29 Name/time in Name/time out	30 Name/time in Name/time out	31 Name/time in Name/time out				

FORM B: EVIDENCE OF THE EXAMINATIONS/PROCEDURES OBSERVED: ULTRASOUND

Date	**Hospital number**	**Clinical history**	Supervisor name	Supervisor signature

FORM B: EVIDENCE OF THE EXAMINATIONS/PROCEDURES OBSERVED: ULTRASOUND

Date	**Hospital number**	**Clinical history**	Supervisor name	Supervisor signature

FORM C: Clinical evaluation, HOSPITAL/DEPARTMENT: (name must be provided)

You must complete the form with accurate and truthful information, as this is a fundamental aspect of the assessment process.

A.Personal appearance

Always neatly dressed and adherence to program dress code and personal cleanliness	Seldom neatly dressed adherence to program dress code and personal cleanliness	Never neatly dressed and does not adherence to program dress code

B.Acceptance of criticism and suggestions

Appreciate and willing	Reluctant	Resentful

C.Planning and assisting staff with organization of examinations

Excellent	Above average	Average	Waits to be told

D.Initiative and willing to work:

Self-starter asks for jobs. Looks for work to do. Acts voluntarily	Acts voluntarily in routine matters	Relies on others. Must be frequently told what to do	Waits to be told what to do

E.Responsibility

Excellent sense of responsibility	Willing to accept responsibility	Reluctant to accept responsibility	Irresponsible

F.Relationship with staff

Always works in harmony. Excellent team worker	A team player under normal circumstances	Difficult to work with. Antagonizes others	Frequently quarrelsome and causes friction

I. Empathy, communication and person centered care

Excellent person centred care and communication skills	Satisfactory explanation of procedures and empathy	Poor empathy and explanation of procedures	Very poor communication and no empathy

Thank you: ***The name*** *of the supervisor is required and not the signature only*

Supervisor name	**Supervisor signature**	**Date**

	UNIVERSITEIT VAN PRETORIA UNIVERSITY OF PRETORIA YUNIBESITHI YA PRETORIA Faculty of Health Sciences Department of Radiography

Student name:

……

ID number ……...

	Unsatisfactory	Satisfactory
Clinical Attendance		
Professional presentation and conduct		
Interprofessional relations and person-centred care		

FORM D: Declaration of Plagiarism

UNIVERSITY OF PRETORIA, FACULTY OF HEALTH SCIENCES, DEPARTMENT OF RADIOGRAPHY

The Department of Radiography places specific emphasis on integrity and ethical behaviour with regard to the preparation of all written work to be submitted for academic evaluation.
Although academic personnel will provide you with information regarding reference techniques as well as ways to avoid plagiarism, you also have a responsibility to fulfill in this regard. Should you at any time feel unsure about the requirements, you must consult the lecturer concerned before you submit any written work.
You are guilty of plagiarism when you extract information from a book, article or web page without acknowledging the source and pretend that it is your own work. In truth, you are stealing someone else's property. This doesn't only apply to cases where you quote verbatim, but also when you present someone else's work in a somewhat amended format (paraphrase), or even when you use someone else's deliberation without the necessary acknowledgement. You are not allowed to use another student's previous work. You are furthermore not allowed to let anyone copy or use your work with the intention of presenting it as his/her own.
Students who are guilty of plagiarism will forfeit all credit for the work concerned. In addition, the matter can also be referred to the Committee for Discipline (Students) for a ruling to be made. Plagiarism is considered a serious violation of the University's regulations and may lead to suspension from the University.
For the period that you are a student at the Department Radiography, the under mentioned declaration must accompany all written work to be submitted. No written work will be accepted unless the declaration has been completed and attached.

I …….. (Full names)
Student number ……
Subject of the work ……

Declaration

1. I understand what plagiarism entails and am aware of the University's policy in this regard.
2. I declare that this (e.g., essay, report, project, assignment, dissertation, thesis etc.) is my own, original work. Where someone else's work was used (whether from a printed source, the internet, or any other source) due acknowledgement was given and reference was made according to departmental requirements.
3. I did not make use of another student's previous work and submitted it as my own.
4. I did not allow and will not allow anyone to copy my work with the intention of presenting it as his or her own work.

Signature

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences
School of Health Care Sciences
Radiography Department

PORTFOLIO OF EVIDENCE FOR CLINICAL OBSERVATION IN ULTRASOUND

---

1. Personal and Professional Details

Surname and First Name:…….

Student/Trainee ID:……

Clinical Placement Site/s:……

Department:

Placement Duration (Start & End Dates):

---

2. Learning Objectives and Goals

The prospective ultrasound student will be making observations in ultrasound departments, that are not necessarily approved by the Radiography and Clinical Technology Board of the HPCSA. The prospective students are also not registered as Ultrasound students yet. It is for that reason that they are only allowed to observe the examinations being performed in the Ultrasound department.

---

3. Clinical Observation Logbook

3.1 Form A: Attendance Register

3.2 Form B Evidence of the examinations or procedures observed

3.3 Form C: Professional conduct form

3.4 Form D: Declaration of Plagiarism

---

4. Reflective Practice Entries

At the end of the observation period, do some reflection on your learning:

- Key learning points
- Challenges faced
- Impact on understanding of pathology, technique, and patient care
- Ethical considerations encountered

Example Reflection Entry: During my observation at the clinical facility,

I appreciated the following about the Ultrasound practice

……

……

……

……

I did not appreciate the following about Ultrasound practice.

……

……

……

……

Signature of Prospective Student……..
Date: