OYAM INSTITUTE OF SCIENCES AND TECHNOLOGY
Strive for Distinctiveness
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DIPLOMA IN DIAGNOSTIC MEDICAL SONOGRAPHY – FOUNDATIONS OF DIAGNOSTIC MEDICAL SONOGRAPHY

OIST Online · Health & Medicine · course outline
Issued 22 November 2026

Level	**Beginner**
Duration	**15 weeks**
Weekly effort	**About 18 hours a week (270 hours: 90 theory + 180 practice)**
Content	**2 modules · 93 lessons · 30 h 59 min**
Format	**Online, self-paced**
Fee	**Free**
Certificate	**Certificate of Completion**
Instructor	**Eng. Emmanuel Ogwang, Course Instructor, Diploma in Diagnostic Medical Sonography, OIST**

Start your journey as a sonographer: ultrasound physics, the machine and transducers, patient care, safety and ethics, and normal sonographic anatomy. Learn at your own pace through short videos, 3D models and guided scanning practice, and send all assignments to info@oist.ac.ug.

WHAT YOU WILL LEARN

- Explain how ultrasound is produced, travels through tissue and returns to form an image
- Operate an ultrasound machine safely: choose the transducer, preset, depth, gain, focus and TGC
- Recognise and correct common artefacts and know which ones help diagnosis
- Prepare, position and care for patients with respect, privacy and infection control
- Use correct sonographic terminology, scan planes and image labelling
- Identify the normal sonographic appearance of the liver, gallbladder, pancreas, spleen, great vessels, kidneys, bladder and pelvic organs
- Apply ALARA and the thermal and mechanical indices to scan safely
- Practise within the ethical, legal and professional rules for sonographers in Uganda
- Record scans in a logbook and write a clear normal ultrasound report

REQUIREMENTS

- Admission to the Diploma in Diagnostic Medical Sonography at OIST
- Basic biology, physics and English at O-level or above
- A smartphone or computer with internet to watch videos and open 3D models
- Scheduled practical time at the OIST scanning room (book through the OIST office or your instructor)

- A notebook for your logbook and a clean white coat for practical sessions

ABOUT THIS COURSE

About this course

Foundations of Diagnostic Medical Sonography is the first-semester core of the Diploma in Diagnostic Medical Sonography at Oyam Institute of Sciences and Technology. It is prepared by Eng. Emmanuel Ogwang to guide his students from their first day with an ultrasound machine to confident, safe scanning of normal abdominal and pelvic anatomy.

The course has two modules that run side by side for 15 weeks:

- TDDS111 Foundations of Diagnostic Medical Sonography (Theory) – 6 credit units, 90 hours.
- TDDS112 Foundations of Diagnostic Medical Sonography (Practice) – 9 credit units, 180 hours.

How you learn

Every week follows the same path: Watch a short expert video, Explore a 3D model, Recognise the key points in short notes, Practise on the machine or a partner, and Prove it with a quiz or a checklist. There are no live classes; you move at your own pace and book scanning time with the OIST office or your instructor.

Assignments

Send every assignment, logbook page and checklist to info@oist.ac.ug. Use the subject line: DMS – module code – lesson name – your full name – registration number. Then press Submit in the lesson to confirm you have sent it.

Assessment

- TDDS111: weekly quizzes 10%, CAT 1 and CAT 2 20%, assignment and presentation 10%, final examination 60%.
- TDDS112: competency checklists and supervisor rating 20%, logbook 20%, OSPE / practical examination 60%.

COURSE CONTENT

Module 1 · TDDS111 · Foundations of Diagnostic Medical Sonography (Theory) (6 credit units)

90 hours over 15 weeks. Introduction to sonography and the sonographer's role, terminology and scan planes, patient care and infection control, ultrasound physics, instrumentation and transducers, artefacts, normal sonographic anatomy of the abdomen and pelvis, bioeffects and safety (ALARA), and ethics and law. Prepared by Eng. Emmanuel Ogwang. Assignments are sent to info@oist.ac.ug.

#	LESSON	TYPE	MINUTES
1	Start here · Welcome from Eng. Emmanuel Ogwang	Reading	10
2	Week 1 · What a sonographer does (video)	Video	5
3	Week 1 · How ultrasound makes a picture (video)	Video	6
4	Week 1 · Explore the ultrasound machine in 3D	3D model	8
5	Week 1 · Notes: the sonographer and the pulse–echo principle	Reading	20
6	Week 1 · Quiz	Quiz	10
7	Week 2 · Probe orientation and how to move the probe (video)	Video	10

#	LESSON	TYPE	MINUTES
8	Week 2 · Notes: terminology, scan planes and image labelling	Reading	25
9	Week 2 · Quiz	Quiz	10
10	Week 3 · Hand hygiene the WHO way (video)	Video	3
11	Week 3 · Notes: patient care and communication in the scan room	Reading	25
12	Week 3 · Quiz	Quiz	10
13	Week 4 · Notes: infection prevention and probe care	Reading	20
14	Week 4 · Assignment: patient care and probe cleaning plan	Assignment / exam	120
15	Week 4 · Quiz	Quiz	8
16	Week 5 · Ultrasound physics, the essentials (video)	Video	30
17	Week 5 · Notes: sound waves, impedance and attenuation	Reading	30
18	Week 5 · Quiz	Quiz	12
19	Week 6 · Artefacts explained (video)	Video	45
20	Week 6 · Notes: artefacts you must recognise	Reading	25
21	Week 6 · Quiz	Quiz	10
22	Week 7 · Knobology: the controls on the machine (video)	Video	12
23	Week 7 · Explore the probes in 3D: curvilinear and linear	3D model	6
24	Week 7 · Notes: the machine, transducers and image optimisation	Reading	30
25	Week 7 · Quiz	Quiz	10
26	Week 8 · Revision: physics and instrumentation (video)	Video	20
27	Week 8 · CAT 1 (weeks 1–7, timed)	Quiz	45
28	Week 9 · Liver scanning protocol (video)	Video	6
29	Week 9 · Gallbladder ultrasound introduction (video)	Video	9
30	Week 9 · Explore the abdominal organs in 3D	3D model	10
31	Week 9 · Notes: normal liver and biliary system	Reading	30
32	Week 9 · Quiz	Quiz	10
33	Week 10 · How to scan the pancreas (video)	Video	8
34	Week 10 · The abdominal aorta (3D animation video)	Video	3
35	Week 10 · Explore the abdominal aorta and its branches in 3D	3D model	6
36	Week 10 · Measuring the spleen (video)	Video	6

#	LESSON	TYPE	MINUTES
37	Week 10 · Notes: pancreas, spleen, aorta and IVC	Reading	30
38	Week 10 · Assignment: draw and label the epigastric transverse view	Assignment / exam	90
39	Week 10 · Quiz	Quiz	10
40	Week 11 · Scanning the right kidney (3D animation video)	Video	2
41	Week 11 · Scanning the left kidney (3D animation video)	Video	2
42	Week 11 · Kidney and bladder scanning lab (video)	Video	10
43	Week 11 · Explore the kidney cross-section in 3D	3D model	6
44	Week 11 · Bladder volume (3D animation video)	Video	3
45	Week 11 · Notes: normal kidneys and urinary bladder	Reading	25
46	Week 11 · Quiz	Quiz	10
47	Week 12 · The female pelvis, transabdominal (3D animation video)	Video	3
48	Week 12 · Explore the bony pelvis and pelvic organs in 3D	3D model	8
49	Week 12 · Notes: normal female pelvis (transabdominal)	Reading	25
50	Week 12 · Quiz	Quiz	10
51	Week 13 · Patient safety and bioeffects (video)	Video	30
52	Week 13 · Explore the thyroid in 3D	3D model	5
53	Week 13 · Notes: bioeffects, ALARA, and an introduction to small parts	Reading	25
54	Week 13 · Quiz	Quiz	8
55	Week 13 · CAT 2 (weeks 8–13, timed)	Quiz	45
56	Week 14 · Notes: ethics, law and professional practice	Reading	30
57	Week 14 · Assignment: ethics case presentation	Assignment / exam	120
58	Week 14 · Quiz	Quiz	8
59	Week 15 · Revision guide and exam tips	Reading	30
60	Week 15 · Final examination (TDDS111)	Quiz	90

Module 2 · TDDS112 · Foundations of Diagnostic Medical Sonography (Practice) (9 credit units)

180 hours of guided practice over 15 weeks: machine set-up and knobology, transducer handling, patient preparation and positioning, image optimisation, scanning normal liver, gallbladder, pancreas, spleen, aorta and IVC, kidneys, bladder and pelvis, measurements, logbook and normal reports. Competency checklists and an OSPE. Prepared by Eng. Emmanuel Ogwang. Submissions are sent to info@oist.ac.ug.

#	LESSON	TYPE	MINUTES
1	Start here · How the practice module works	Reading	15
2	Logbook · How to keep your scanning logbook	Reading	10
3	P1 · Knobology on a real machine (video)	Video	10
4	P1 · Practical guide: machine set-up, ergonomics and knobology	Reading	15
5	P1 · Submit: signed competency checklist	Assignment / exam	15
6	P2 · Probe orientation and movements (rewatch)	Video	10
7	P2 · Practical guide: holding the probe, orientation and scan planes	Reading	15
8	P2 · Submit: signed competency checklist	Assignment / exam	15
9	P3 · Safe hands (video)	Video	2
10	P3 · Practical guide: patient preparation, positioning and infection control	Reading	15
11	P3 · Submit: signed competency checklist	Assignment / exam	15
12	P4 · Image optimisation on a modern scanner (video)	Video	15
13	P4 · Practical guide: optimising the image and recognising artefacts	Reading	20
14	P4 · Submit: optimisation and artefact image set	Assignment / exam	20
15	P5 · Liver protocol (rewatch before scanning)	Video	6
16	P5 · Practical guide: liver and gallbladder	Reading	20
17	P5 · Submit: liver and gallbladder checklist and images	Assignment / exam	15
18	P6 · What a normal pancreas looks like (video)	Video	10
19	P6 · Practical guide: pancreas, aorta, IVC and spleen	Reading	20
20	P6 · Submit: pancreas, vessels and spleen checklist and images	Assignment / exam	15
21	P7 · Kidney and bladder scanning (rewatch)	Video	10
22	P7 · Practical guide: kidneys and urinary bladder	Reading	20
23	P7 · Submit: kidneys and bladder checklist and images	Assignment / exam	15
24	P8 · Female pelvis, transabdominal (rewatch)	Video	3
25	P8 · Practical guide: transabdominal pelvis (supervised clinical)	Reading	20

#	LESSON	TYPE	MINUTES
26	P8 · Submit: pelvis checklist	Assignment / exam	15
27	P9 · Practical guide: measurements, records and the normal report	Reading	25
28	P9 · Submit: three normal reports	Assignment / exam	60
29	P10 · Practical guide: thyroid and the complete abdominal protocol	Reading	20
30	P10 · Submit: thyroid and complete abdomen checklist	Assignment / exam	15
31	OSPE · Practice quiz: scanning decisions	Quiz	20
32	OSPE · Final practical examination (in person)	Assignment / exam	60
33	Logbook · Final logbook submission	Assignment / exam	20

Enrol online at www.oist.ac.ug/online/bXPl3XQlbdNpEUDJoWlH. Learn at your own pace on your phone or computer, and earn a certificate anyone can verify with its QR code.