



Structured Learning Plan for General Ultrasound with Basic Obstetrics and Gynecology: 20-Day Hands-on Training

◆ Week 1: Fundamentals of Ultrasound and Abdomen Scanning

Day 1: Introduction to Ultrasound

- Lecture Topics:
 - Physics of ultrasound: Frequency, attenuation, acoustic impedance
 - Image formation: A-mode, B-mode, M-mode, Doppler
 - Equipment: Knobology, transducer types, image optimization
 - Hands-on: Probe handling, image orientation, depth/gain/TGC control
 - Assignment: Reading on ultrasound safety and bioeffects
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Day 2: Ultrasound System Operation & Methodology

- Lecture Topics:
 - System setup and ergonomics
 - Doppler (color, spectral, power)
 - Artifacts in ultrasound and their interpretation
 - Hands-on: Doppler technique practice, artifact identification
 - Visual Quiz 1: Normal vs pathological liver, gallbladder images
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Day 3: Whole Abdomen – Liver & Gallbladder

- Lecture Topics:
 - Liver anatomy, vasculature, scanning planes
 - Gallbladder & biliary tree
 - Normal vs pathological (fatty liver, cirrhosis, cholelithiasis, polyps)
 - Hands-on: Scanning liver and GB with case-based discussion
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Day 4: Whole Abdomen – Pancreas, Spleen, Aorta

- Lecture Topics:
 - Pancreas orientation, splenic echotexture, abdominal aorta
 - Pancreatitis, splenomegaly, aneurysms
 - Assessment 1: Practical + Oral (covering Days 1–3)
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Day 5: Whole Abdomen – Kidneys, Urinary Bladder

- Lecture Topics:
 - Renal scanning protocol
 - Common findings: hydronephrosis, cysts, tumors, bladder wall abnormalities
 - Hands-on: Full abdominal scan practice
 - Visual Quiz 2: Kidney and bladder—normal vs pathology
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◆ Week 2: Superficial Organs & Continued Abdomen

Day 6: Focused Assessment with Sonography in Trauma (FAST)



- Lecture Topics:
 - Discussion of FAST
 - Trauma protocol: FAST scan steps and clinical application
 - Hands-on: FAST exam on test patients
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Day 7: Thyroid Protocol and Pathology

- Lecture Topics:
 - Thyroid anatomy, scanning technique
 - TI-RADS classification
 - Pathologies: nodules, goiter, malignancy indicators
 - Assessment 2: Practical + Long Quiz (Days 4–6)
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Day 8: Neck Ultrasound

- Lecture Topics:
 - Lymph node classification
 - Salivary glands and vascular structures
 - Neck masses and differential features
 - Visual Quiz 3: Thyroid nodules and neck lymph nodes
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Day 9: Breast Ultrasound Protocol

- Lecture Topics:
 - Scanning planes, radial/anti-radial views
 - BI-RADS descriptors
 - Pathologies: fibroadenoma, cysts, carcinomas
 - Hands-on: Case review and image correlation
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Day 10: Breast Pathology Review + Practical

- Assessment 3: Practical + Oral Exam (Thyroid/Neck/Breast)
 - Activity: Case-based discussion on breast ultrasound
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◆ Week 3: Pelvic Ultrasound – GYN and OB

Day 11: Gynecological Protocol (TA & TV)

- Lecture Topics:
 - Uterine and ovarian anatomy
 - Cycle-related changes
 - Pathologies: fibroids, polyps, PCOS
 - Visual Quiz 4: Uterus and ovaries—normal vs pathology
 - Hands-on: TA/TV scanning techniques
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Day 12: Adnexal & Endometrial Pathologies

- Lecture Topics:
 - Ovarian cysts, dermoids, torsion
 - Endometrial hyperplasia vs carcinoma
- Assessment 4: Practical + Written Quiz (GYN focus)



Day 13: Early Pregnancy Scanning

- Lecture Topics:
 - Gestational sac, yolk sac, CRL, viability criteria
 - Ectopic pregnancy, threatened abortion
- Hands-on: Early pregnancy simulation

Day 14: 2nd Trimester Fetal Biometry

- Lecture Topics:
 - BPD, HC, AC, FL, placental grading
 - Normal growth vs IUGR
- Visual Quiz 5: Normal fetal anatomy vs congenital anomalies

Day 15: OB Pathologies and Fetal Anomalies

- Lecture Topics:
 - Anencephaly, omphalocele, oligohydramnios
 - Fetal cardiac activity & limb assessment
- Assessment 5: Practical + Oral (OB focus)

◆ Week 4: Integration, Application, and Final Exams

Day 16: Whole Abdomen and Neck Ultrasound Practical Test

- Performance Task:
 - Whole abdomen and Neck Ultrasound
 - The ultrasound report
- Visual Quiz 6: Mixed case image interpretation (all topics)

Day 17: Comprehensive Case-Based Discussion and Application in Breast and TA/TV

- Performance Task:
 - Breast and TA/TV Non-Pregnant Patient
- Assessment 6: Practical exam (randomized full-scope)

Day 18: Final Written Examination

- Format:
 - 100-item multiple choice, fill-in-the-blank, and interpretation
 - All topics covered including pathology identification

Day 19: Final Oral Examination

- Format:
 - Each trainee explains 2 cases (1 normal, 1 pathological)
 - Includes scanning technique, measurements and color flow studies

Day 20: Graduation and Certificate Awarding

- Activities:
 - Feedback from instructors
 - Certificate awarding ceremony



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PREPARED BY: Regina Angelica Y. Almazar, RRT
Sonographer
Instructor, General Ultrasound Training
ATC Diagnostic Imaging Specialization Programs