



HIMALAYAN UNIVERSITY, ARUNACHAL PRADESH

POST GRADUATE DIPLOMA

(ULTRASONOGRAPHY)

1st YEAR

S. No.	Sub. Code	Subject Name	Marks			
			Internal	Theory	Total	Pass
1	101	Basic Principles of Ultrasonography	30	70	100	40
2	102	Obstetrics and Gynecologic Ultrasonography	30	70	100	40
3	103	Ocular Ultrasonography and Echocardiography	30	70	100	40
4	104	Viseral and Pelvic Ultrasonography	30	70	100	40
5	105	Project Work	30	70	100	40

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Basic Principles of Ultrasonography (101)

UNIT - 1

Ultrasound physics - instrumentation - knobology - doppler and color flow principles

UNIT - 2

ultrasound physics - acoustic impedance - attenuation - acoustic beam – focal zone - artefacts.

UNIT - 03

Piezo electric effect - Doppler Effect - frequency - hyperechoic/ hypoechoic - lens effect - longitudinal generators

UNIT - 04

Instrumentation - different modes of ultrasound - a-mode - b-mode - c-real mode - d.m-mode.

UNIT - 05

Different modes of transducers - linear probe - curvilinear probe - rectal probe - vaginal probe - mechanical probe - digital probe – cardiac probe

UNIT - 06

knobology - annotation keys - body markers - calipers - depth range - dual image

UNIT - 07

freeze - gain - m- mode - print

UNIT - 08

Time gain compensation - track ball - depth gain compensation – zoom.

UNIT - 09

doppler and color flow principles - aliasing - diastole - duplex imaging - frequency shift

UNIT - 10

Laminar flow - pulse repetition frequency (prf) - resistance

UNIT - 11

gating (sample volume) - spectral analysis/waveform – spectral broadening - spectral windows - velocity

UNIT - 12

doppler effect - cw (continuous wave doppler) - pulse doppler

Obstetrics and Gynecologic Ultrasonography (102)

UNIT - 1

Development and Anatomy of Uterus.

UNIT - 2

Importance of Uterus.

UNIT - 3

Functioning of Uterus.

UNIT - 4

Congenital Anomalies of Uterus.

UNIT - 5

1st, 2nd, 3rd Trimester Pregnancy.

UNIT - 6

Infertility.

UNIT - 7

Normal Anatomy of Ovaries.

UNIT - 8

Change in Menstrual Cycle.

UNIT - 9

Pcod.

UNIT - 10

Adnexal Masses.

UNIT - 11

Foetal Anomalies.

UNIT - 12

Pelvic Inflammatory Diseases.

Ocular Ultrasonography and Echocardiography (103)

UNIT - 1

Ocular Ultrasonography - Definition - Anatomy and Development of the Eye Ball - Visual and Papillary Pathways - the Eye Lid and Its Disorders – the Lacrimal Apparatus and Its Disorders.

UNIT - 2

Orbit and Orbital Cellulites-Ocular Motility and Squint - Sclera and its Disorders - Cornea and Keratits - Conjunctiva and its Disorders.

UNIT - 3

Diseases of the Crystalline Lens - Uveal Tract and its Disorders – Glucoma - the Retina - Neuro - Ophthalmology an Optic Nerve Disease.

UNIT - 4

Inter Ocular Tumors - Ocular Emergencies and Traumas - The Eye In Systemic Diseases - Errors of Refraction.

UNIT - 5

Diseases of the Vitrous - Investigative Ophthalmology - Laser in Ophthalmology - Ocular Pharmacology.

UNIT - 6

Signs of Heart Disease - Investigations - Radionclide Techniques - Congenital Heart Disease.

UNIT - 7

Coarctation of the Aorta - asd - Patent Ductus Arteriosus – Ventricular Septal Defect Mitralstenosis.

UNIT - 8

Mitral Regurgitation - Aortic Stenosis - Aortic Regurgitation – Tricuspid Stenosis - Icuspid Regurgitation - Choice and Management of Prosthetic Valves.

UNIT - 9

Coronary Heart Disease - Sudden Death - Angina Pectoris - Revascularization Procedeure for Patients with Angina Pectoris - Percutaneous Transluminal Coronary Angioplasty - Unstable Angina.

UNIT - 10

Management of ami - Sinus Bradycardia – Supraventricular Tachyarrhythmias - Ventricular Arrhythmias - Conduction Disturbances.

UNIT - 11

Acute left Ventricular Failure Hypotension and Shock - Right Ventricular Infarction - Mechanical Defects - Myocardial Rupture.

UNIT - 12

Vinayaka Missions University, Directorate of Distance Education Salem India Post Graduate Diploma in Ultra Sonography 1 Yr.

Ocular Ultrasonography, Echocardiography (3060303) Left Ventricular Aneurysm - Pericarditis - Mural Thrombus – Ventricular Arrhythmias - Ventricular Tachycardia.

Viseral and Pelvic Itrasonohraphy (104)

UNIT - 1

Small and large intestines, appendix.

UNIT - 2

Liver, anatomy, variations of normal anatomy.

UNIT - 3

Abnormal liver - cysts, masess.

UNIT - 4

Gall bladder, normal anatomy, non-visualization of gall bladder.

UNIT - 5

Enlarged gall bladder, small gall bladder.

UNIT - 6

Pancreas, normal pancreas, abnormal pancreas.

UNIT - 7

Spleen, normal spleen, abnormal spleen.

UNIT - 8

Peritoneum, normal git, intra peritoneal fluid, masses in the bowel.

UNIT - 9

Kidneys, normal kidneys, variants of normal.

UNIT - 10

Renal cysts, renal calculi, renal masses.

UNIT - 11

Bladder, normal bladder, abnormal bladder.

UNIT - 12

Prostate, normal prostate, abnormal prostate.

Project Work (105)
