



**Ministry of National Health Services**  
Regulation & Coordination  
Government of Pakistan  
**Health Services Academy (DAI) , Islamabad**  
Collaboration with  
**Institute of Allied Medical Professions**

**DIPLOMA IN DIAGNOSTIC ULTRASOUND**  
**(D.D.U)**

MBBS (For Medical Graduates) & B.S Allied Health Profession

**Introduction:** Health care practices are evolving and improving each day. As soon a patient visits emergency room/physician's Clinics or diagnostic center, he/she wishes to get examination process completed soon. Physicians treating the patient also share the same wish as the patient because this not only impacts health but time and cost too.

**Ultrasound Diagnostic examination** is well trusted by physicians and surgeons as non-invasive first line of diagnostic process. Ultrasound is a safe and widely available diagnostic tool.

Ultrasound as the name indicates uses sound waves rather than ionizing radiations which is a major benefit of the examination. The level of knowledge and training on the part of practitioners is accordingly highly diverse. Worldwide, there is great variation in both the sophistication of ultrasound equipment and the qualifications of those providing diagnostic ultrasound services.

**The versatility of ultrasonography** in assisting the diagnosis of a broad range of diseases along with the widespread availability of relatively low-cost general-purpose scanners with good performance has encouraged the use of diagnostic ultrasound throughout general medicine and pediatrics, Surgery practice and other specialties. Medical specialists other than radiologists are increasingly wishing to undertake ultrasound examinations on patients referred to them for their clinical opinion as a direct extension of their clinical examination. This may take place in the outpatient department, on the wards and in the assessment of emergency patients. Clinicians are also using ultrasound to assist in practical procedures such as central line insertion. Physicians are eligibility to appear recently, the American College of Graduate Medical Education (ACGME) registration through examination in Pakistan in a joint initiative with the American Board of Radiology revised the criteria by which each Diploma in Diagnostics Medical Ultrasound is expected to be evaluated during their training years.

**The Diploma in Diagnostic Ultrasound (D.D.C)** provides a combination of academic and clinical elements signifying the importance of ensuring graduates from this programme will be eligible for registration with the regulatory body in the ultrasound scope of practice.

**The requires education** providers to ensure that graduates have a sound knowledge and skills base to practice as a Sonologist M.B.B.S with PM&DC registration( Level-II(a),preferably House job in Radiology or one year training in Radiology Department Designed for medical professionals wishing to obtain further expertise in ultrasound for clinical practice, this course is particularly valuable for rural GPs, anesthetists, GPs, emergency physicians, surgeons and cardiologists, and other medical specialists. Allied health specialists maybe are interested in completing individual subjects to enhance their practice.

**MBBS/ BDS (Level-I)** after one year house job ,PM&DC Register as Diploma Level(II-a) 12-month course work. **Register with PM & DC : Level-II(a) OR II(b) :** After complete D.D.U course work mandatory to complete logbook 1000 Cases unaided in one specialty under the supervision of relent subjects. Level-II(b) Equivalent M.Sc.

## **B.S.(16)years, Allied Health Professions**

**B..S Medical Imaging** with safely and effectively by meeting the criteria for competence in ultrasound. Allied Health Professions Council Register conduct examination for registration .B.S. Medical Imaging with D.D.U

**B.S(16)years Of Allied Health Profession: i.e.** MIT or MID **After complete D.D.U,** Registration with Allied Health Professions Council Act,2022  
Private Practice in Health care will be allowed after passing Licensing examination.

**Program Overview:** The specializations Diploma in Diagnostic Ultrasound are consisting of **32 credit Hours** of taught coursework and can be completed in **12 months**.

Students will be expected to spend approximately **15 hours** of study for **each 3-credit hour** course. In specializations with a clinical requirement (such as ultrasound)  
All courses will be delivered fully online, **90 %** attendance ,**70%** passing course work is mandatory.

Each student is required to complete **09 courses**, all of which are compulsory (**27 credit hours**) prerequisite in first semester (Two courses), second semester( One Course) 09 credit Hours being common to all Medical.Gradutes and B.S Allied Health Professionals

### **Schedule of courses: Diploma in Diagnostic Ultrasound(D.D.U)**

<b>Course Code</b>	<b>Course Name</b>	<b>Semester-I</b>
DMU 201	Ultrasound Physics & Instrumentation	03
DMU 202	General Abdomen	03
DMU 203	Clinical Applications Ultrasound Abdominal	03
	Interventional and intra Partum Ultrasound	02
<b>Prerequisite</b>		
DMP401	Fundamental Medical Physics	03

MTH402	Fundamental Calculus	03
	<b>Total</b>	<b>17</b>

<b>Course Code</b>	<b>Course Name</b>	<b>Semester-II</b>
DMU 301	Imaging Anatomy and Pathology	03
DMU302	OBGYN Ultrasound	03
DMU303	Second and Third Trimesters	02
DMU304	Ultrasound Clinical Applications: Obstetrics &Gynecology	03
DMU305	Principles of Clinical Ultrasound	02
<b>Prerequisite</b>		
SDP 403	Standard of DICOM & PACS,HIPPA	03
		<b>17</b>

**Note:** Each subject has one Specialty (i.e.) OBGYN / General (Abdomen) \*as this course is a pre-requisite for all the other ultrasound-specific courses, it is expected that students complete this in the first semester of their programme of study

### **International Faculty online Expert in their subject specialty OBGYN, General (Abdomen)**

#### ***Intended Learning Outcomes***

**Knowledge:** Diploma Diagnostic Ultrasound should have acquired:

- A body of knowledge that includes the understanding of recent developments in a discipline and/or area of professional practice in the discipline of Clinical Ultrasound
- Knowledge of research principles and methods applicable to learning in the discipline of Clinical Ultrasound.

**Skills:** Diploma Diagnostic Ultrasound will have developed:

- Cognitive skills to demonstrate mastery of theoretical knowledge of clinical ultrasound and to reflect critically on theory and professional practice or scholarship
- Cognitive, technical, and creative skills to investigate, analyses and synthesis complex information, problems, concepts, and theories and to apply established the practice of clinical ultrasound
- Cognitive, technical, and creative skills to generate and evaluate complex ideas concepts at an abstract level
- Communication and technical research skills to justify and interpret theoretical propositions, methodologies, conclusions and professional decisions to specialist and non-specialist audiences
- Technical and communication skills to design, evaluate, implement, analyses, theories about developments that contribute to professional practice or scholarship.

**Application of Knowledge and Skills:** Diploma Diagnostic Ultrasound will demonstrate the application of knowledge and skills:

- With creativity and initiative to new situations in professional practice and/or for further learning
- With high-level personal autonomy and accountability
- To plan and execute a substantial capstone experience to new situations in professional scientific practice and/or for further learning.

**Career outcomes:**

- As clinical ultrasound technology becomes more widely accessible, medical professionals with relevant knowledge are increasingly sought after.
- This program can help you develop the skills to confidently undertake clinical ultrasound within your existing practice.
- This course does not qualify you to be a sonographer. It is for those medical health practitioners who wish to incorporate ultrasound into their practice.

**PG Diploma with relevant Specialties: 06**

- OBGYN Ultrasound
- Gastrointestinal Ultrasound (Abdomen)
- Urological Ultrasound
- Neo natal Ultrasound
- Vascular Ultrasound
- Small Parts Ultrasound (Thyroid, Breast & Prostate)

**Each Specialty** must enroll students at least 20 to offer a program.

**Pre-Requisite:** for Medical Physics & Calculus, Standard of DICOM & PACS ,HIPPA

**After Completing D.D.U are eligible to appears USA licensure examination which worldwide recognizes, American Registry Medical Diagnostic Sonography (ARDMS)**

**Physician Only Certification**

**RMSK®** Registered in Musculoskeletal® sonography,

**RPVI®** Registered Physician in Vascular Interpretation®

**CBCCT™** Certification Board of Cardiovascular Computed Tomography™

**CBCMR** Certification Board of Cardiovascular Magnetic Resonance

**CBNC™** Certification Board of Nuclear Cardiology™

**ABVM** American Board of Vascular Medicine Examination & Endovascular Medicine Examination

**Fee Structure for**

**“A” “Diploma in Diagnostic Ultrasound (D.D.U)  
“12 months/ 2- semesters (32 credit Hours)”  
(For Physician) & B.S (MIT)**

<b>S #</b>	<b>Particulars</b>	<b>Category</b>	<b>Amount (PAK. RS)</b>
1	Admission Processing Charges	One Time	5000
2	Admission Fee	One Time	20,000
	<b>PER SEMASTER FEE</b>		

3	Tuition Fee +Practicum	Per semester	200,000
4	Registration Course Fee	1 <sup>st</sup> Semester	15,000
5	Examination Fee	1 <sup>st</sup> Semester	10,000
4	Registration Course Fee	2 <sup>nd</sup> Semester	30,000
5	Examination Fee	2 <sup>nd</sup> Semester	20,000

**Per Semester Fee PAK RS 250,000**

**Note:** \* Per Semester fee is subject to revision