



---

# **One Year Post Graduate Diploma in Medical Diagnostic Ultrasound**

---



**MSK Track**

# Semester 1

**Course Name: Ultrasound Physics & Instrumentation**

**Course Director: Associate Prof. Dr. Raham Bacha (PhD)**

**Course Code: PGDM-7101**

**Teaching Faculty**

Prof. Dr. Syed Amir Gilani (PhD)

Associate Prof. Dr. Raham Bacha (PhD)

<b>Week</b>	<b>Course Content</b>
<b>Week 1</b>	Introduction to SPI (1)
<b>Week 2</b>	Common Artifacts (2)
<b>Week 3</b>	Sound Waves (2)
<b>Week 4</b>	Resolution (1)- <b>Quiz &amp; Assignment</b>
<b>Week 5</b>	Image Processing (2)
<b>Week 6</b>	Transducer (2)
<b>Week 7</b>	Image Depth, Gain and focusing (2)
<b>Week 8</b>	<b>Quiz &amp; Assignment</b>
<b>Week 9</b>	Dynamic Range (2)
<b>Week 10</b>	Bio-Effects (2)
<b>Week 11</b>	Color Doppler Physics (1)
<b>Week 12</b>	CWD (2)
<b>Week 13</b>	Tissue Harmonics(2)- <b>Quiz &amp; Assignment</b>
<b>Week 14</b>	Spectral Doppler (2)
<b>Week 15</b>	Ultrasound Contrast Agents (1)
<b>Week 16</b>	<b>Final Exam</b>

<b>Semester 1</b>	
<b>Course Name: Applied Anatomy &amp; Pathology</b>	
<b>Course Director: Associate Prof. Dr. Raham Bacha (PhD)</b>	
<b>Course Code: PGDM-7102</b>	
<b>Teaching Faculty</b>	
<b>1:</b> Associate Prof. Dr. Raham Bacha (PhD)	
<b>2:</b> Associate Prof. Dr. Khadija tul Sughra (PhD)	
<b>3:</b> Assistant Prof. Dr Muhammad Yousaf	
<b>Week</b>	<b>Course Content</b>
<b>Week 1</b>	1: Applied anatomy of upper limb-I(1)
<b>Week 2</b>	1: Applied anatomy of lower limb-I(1)
<b>Week 3</b>	1: Applied Anatomy of upper Abdomen-I (2)
<b>Week 4</b>	<b>Quiz &amp; Assignment</b>
<b>Week 5</b>	1: Applied Anatomy of lower Abdomen-I(2)
<b>Week 6</b>	1: Cardiac applied anatomy(1)
<b>Week 7</b>	1: Vascular applied anatomy of Limbs-I(1)
<b>Week 8</b>	<b>Quiz &amp; Assignment</b>
<b>Week 9</b>	1: Applied antomy of peripheral nerves-I(1)
<b>Week 10</b>	1: Vascular applied anatomy of Abdomen -I(1)
<b>Week 11</b>	1: Male genitourinary system anatomy-I(1)
<b>Week 12</b>	1: Female genitourinary system anatomy-I(2)
<b>Week 13</b>	<b>Quiz &amp; Assignment</b>
<b>Week 14</b>	1: Applied pathology of upper limb(2)
<b>Week 15</b>	1: Applied pathology of Abdomen(2)
<b>Week 16</b>	<b>Final Exam</b>

<b>Semester 1</b>	
<b>Course Name: Upper Limb Musculoskeletal Ultrasound</b>	
<b>Course Director: Associate Prof. Dr. Raham Bacha (PhD)</b>	
<b>Course Code: PGDM-7103</b>	
<b>Teaching Faculty</b>	
<b>1: Prof. Dr. Syed Amir Gilani</b>	
<b>Week</b>	<b>Course Content</b>
<b>Week 1</b>	Introduction and Basics-I
<b>Week 2</b>	Introduction and Basics-II
<b>Week 3</b>	Upper Limb Muscles-I
<b>Week 4</b>	<b>Quiz &amp; Assignment</b>
<b>Week 5</b>	Upper Limb Muscles-II
<b>Week 6</b>	Tendons and Ligaments-I
<b>Week 7</b>	Tendons and Ligaments-II
<b>Week 8</b>	<b>Quiz &amp; Assignment</b>
<b>Week 9</b>	Joints-I
<b>Week 10</b>	Joints-II
<b>Week 11</b>	Nerves and Vessels-I
<b>Week 12</b>	Nerves and Vessels-II
<b>Week 13</b>	<b>Quiz &amp; Assignment</b>
<b>Week 14</b>	Integration and Advanced Topics
<b>Week 15</b>	Clinical Experience and Mastery
<b>Week 16</b>	<b>Final Exam</b>

<b>Semester 1</b>	
<b>Course Name: lower Limb Musculoskeletal Ultrasound</b>	
<b>Course Director: Associate Prof. Dr. Raham Bacha (PhD)</b>	
<b>Course Code: PGDM-7104</b>	
<b>Teaching Faculty</b>	
<b>1: Prof. Dr. Syed Amir Gilani</b>	
<b>Week</b>	<b>Course Content</b>
<b>Week 1</b>	Introduction and Basics-I
<b>Week 2</b>	Introduction and Basics-II
<b>Week 3</b>	Lower Limb Muscles-I
<b>Week 4</b>	<b>Quiz &amp; Assignment</b>
<b>Week 5</b>	Lower Limb Muscles-II
<b>Week 6</b>	Tendons and Ligaments-I
<b>Week 7</b>	Tendons and Ligaments-II
<b>Week 8</b>	<b>Quiz &amp; Assignment</b>
<b>Week 9</b>	Joints-I
<b>Week 10</b>	Joints-II
<b>Week 11</b>	Nerves and Vessels-I
<b>Week 12</b>	Nerves and Vessels-II
<b>Week 13</b>	<b>Quiz &amp; Assignment</b>
<b>Week 14</b>	Integration and Advanced Topics
<b>Week 15</b>	Clinical Experience and Mastery
<b>Week 16</b>	<b>Final Exam</b>

<b>Semester 1</b>	
<b>Course Name: Color Doppler Ultrasound in Musculoskeletal System</b>	
<b>Course Director: Associate Prof. Dr. Raham Bacha (PhD)</b>	
<b>Course Code: PGDM-7105</b>	
<b>Teaching Faculty</b>	
<b>1: Prof. Dr. Syed Amir Gilani</b>	
<b>Week 1</b>	Introduction and Basics-I
<b>Week 2</b>	Introduction and Basics-II
<b>Week 3</b>	Arterial Blood Flow-I
<b>Week 4</b>	<b>Quiz</b>
<b>Week 5</b>	Arterial Blood Flow-II
<b>Week 6</b>	Venous Blood Flow-I
<b>Week 7</b>	Venous Blood Flow-II
<b>Week 8</b>	<b>Mid Term</b>
<b>Week 9</b>	Musculoskeletal Tendons and Ligaments-I
<b>Week 10</b>	Musculoskeletal Tendons and Ligaments-II
<b>Week 11</b>	Musculoskeletal Joints-I
<b>Week 12</b>	Musculoskeletal Joints-II
<b>Week 13</b>	<b>Quiz</b>
<b>Week 14</b>	Peripheral Nerves and Soft Tissues
<b>Week 15</b>	Clinical Experience and Mastery
<b>Week 16</b>	<b>Final Exam</b>