



Vascular Physics, Haemodynamics and Instrumentation Content Outline

- 1. Principles of Ultrasound, Transducers and Instrumentation (35%)**
 - A. *Elementary Principles of Ultrasound*
 - B. *General Physics Principles*
 - C. *Propagation of Ultrasound through Tissues*
 - D. *Ultrasound Transducers*
 - E. *Pulse-Echo Instruments, Storage and Display*

- 2. Principles of Ultrasound Imaging (35%)**
 - A. *Pulse Echo Imaging*
 - B. *Doppler Physics Principles*
 - C. *Spectral Doppler Imaging*
 - D. *Colour Doppler Imaging*
 - E. *Artifacts*

- 3. Haemodynamics, Physics and Fluid Dynamics (20%)**
 - A. *Arterial Haemodynamics*
 - B. *Venous Haemodynamics*
 - C. *Tissue Mechanics/Pressure Transmission*
 - D. *Plethysmography*

- 4. Quality Assurance and Ultrasound Safety (10%)**
 - A. *Instrument Performance, Evaluation, Maintenance and Safety*
 - B. *Biological Effects and Safety*
 - C. *Output Display Standards and BMUS Safety Guidelines (2009) for Peripheral Vascular Scanning*