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