Edinburgh Imaging Academy – online distance learning courses

Edinburgh Imaging
www.ed.ac.uk/edinburgh-imaging

Cardiovascular Imaging

Semester 2 / Commences January 10 Credits

Each Course is composed of Modules & Activities.

Modules:
- Cardiac basics
- CT coronary angiography
- Imaging of ischaemic heart disease
- Cardiac and pericardial anomalies
- Vascular imaging
- Pulmonary vascular imaging

Each Module is composed of Lectures, Reading Lists, MCQ self-assessments, & Discussion Boards.

The summary table above shows whether the modules are available in the Neuroimaging for Research (NI4R) programme or the Imaging (IMSc) programme or indeed both.
Modules include:

Cardiac basics:
  Cardiothoracic radiology: overview

CT coronary angiography:
  Coronary CT calcium scoring
  Cardiac CT overview
  Cardiac CT: image acquisition

Imaging of ischaemic heart disease:
  MR & ischaemic heart disease
  CT & ischaemic heart disease

Cardiac and pericardial anomalies:
  Cardiovascular anomalies

Vascular imaging:
  CT & MRI imaging of the aorta

Pulmonary vascular imaging:
  Pulmonary embolism

We can also provide a more detailed syllabus showing what lectures will be given for each module, and the learning outcomes for each module.
Cardiac basics (IMSc only)

Lecture 1
Title: Cardiotoracic radiology: overview
Description: Radiology of the chest: CXr, CT, MR, Nuc Med. Common chest pathologies
Author(s): Prof Edwin van Beek
Editor(s): Dr Andrew Farrall
Learning Objectives
- Give an overview of different chest imaging modalities
- Describe how these different modalities are applied
- Discuss examples of common chest pathologies

CT coronary angiography (IMSc only)

Lecture 1
Title: Coronary CT calcium scoring
Description: CAC, scan protocols, scoring CT scans; interpretation
Author(s): Dr Saeed Mirsadraee
Editor(s): Dr Andrew Farrall
Learning Objectives
- State the significance of coronary artery calcification
- Describe a scan protocol
- Score a coronary CT scan
- Interpret the calculated scores

Lecture 2
Title: Cardiac CT: overview
Description: Cardiac CT & CT angiography: technology, strengths & limitations
Author(s): Prof Edwin J.R. van Beek
Editor(s): Dr Andrew Farrall
Learning Objectives
- Describe basic CT principles
- Explain the challenges of cardiac CT / CT angiography
- State the principles of cardiac CTA
- Discuss ECG gating: prospective or retrospective
- Explain considerations around radiation dose
CT coronary angiography contd.. (IMSc only)

Lecture 3

Title: Cardiac CT: image acquisition
Description: Cardiac CT & CT angiography: patient preparation, clinical protocols, role of contrast, image acquisition
Author(s): Prof Edwin J.R. van Beek
Editor(s): Dr Andrew Farrall

Learning Objectives
- Describe patient preparation
- Discuss clinical protocol selection
- Explain the role of a pre-contrast scan
- Outline a contrast administration protocol
- Give an overview of cardiac CT angiography acquisition

Imaging of ischaemic heart disease (IMSc only)

Lecture 1

Title: MR & ischaemic heart disease
Description: Overview of ischaemic heart disease, SPECT imaging & the rise of MR techniques.
Author(s): Prof Edwin J.R. van Beek
Editor(s): Dr Andrew Farrall

Learning Objectives
- Give an overview of myocardial infarct (MI) pathology
- Describe modalities for investigating IHD
- Outline limitations of SPECT
- Outline benefits & limitations of MR imaging
- Discuss applications of MR imaging in IHD / MI e.g.
  - Infarct size evaluation
  - Myocardial viability assessment
  - Perfusion determination

Lecture 2

Title: CT & ischaemic heart disease
Description: Overview of CT techniques in the evaluation of ischaemic heart disease.
Author(s): Prof Edwin J.R. van Beek
Editor(s): Dr Andrew Farrall

Learning Objectives
- Give an overview of CT development for coronary angiography
- Describe coronary artery anomalies
- Outline CT assessment of coronary plaque
- Outline CT assessment of cardiac viability
- Discuss the global cardiac CT process
Cardiac and pericardial anomalies (IMSc only)

Lecture 1
Title: Cardiovascular anomalies
Description: Non-invasive imaging of coronary artery anomalies
Author(s): Dr Saeed Mirsadraee
Editor(s): Dr Andrew Farrall

Learning Objectives
- State frequency of coronary artery anomalies
- List associations with anomalous coronary arteries
- Describe normal coronary artery anatomy
- Classify various coronary artery anomalies
- State the significance of coronary artery anomalies

Vascular imaging (IMSc only)

Lecture 1
Title: CT & MRI Imaging of the Aorta
Description: Imaging aortic anatomy, aortic aneurysm, & acute aortic syndromes
Author(s): Dr Christopher James Rofe
Editor(s): Dr Saeed Mirsadraee, Dr Andrew Farrall

Learning Objectives
- List key features for review on aortic imaging
- Discuss the role of multi-detector CT in aortic imaging
- Compare multi-detector CT with MR imaging strategies
- State key anatomical aortic divisions
- Describe imaging of:
  - Aortic aneurysm
  - Acute aortic syndromes
    - Dissection
    - Intramural haematoma
    - Penetrating ulcer
Lecture 1
Title: Pulmonary embolism
Description: Pulmonary embolism imaging techniques
Author(s): Prof Edwin van Beek
Editor(s): Dr Andrew Farrall

Learning Objectives
- Explain the importance of diagnosing pulmonary embolism
- Describe different diagnostic tests which allow diagnosis of pulmonary embolism
- Discuss diagnostic management pathways which minimise patient risk & optimise workflow