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

Neuroanatomy

Semester 1 / Autumn **10 credits (IMSc) / 20 Credits (N14R)**

Each Course is composed of Modules & Activities.

Modules:

Major Lobes and Fissures	IMSc	NI4R
Ventricles and CSF	IMSc	NI4R
Major Vessels Vascular Territories	IMSc	NI4R
Major Internal Connections		NI4R
Cranial nerve nuclei	IMSc	NI4R
Detailed gyral identification		NI4R

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.

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

Modules

Major Lobes and Fissures:
- Major Lobes and Fissures

Ventricles and CSF:
- Ventricles and basal cisterns
- Formation and flow of CSF
- Imaging examples

Major Vessels Vascular Territories:
- Arterial system of the brain – anterior circulation
- Arterial system of the brain – posterior circulation
- Venous drainage of the brain

Major Internal Connections:
- Major Internal Connections PART 1
- Major Internal Connections PART 2

Cranial nerve nuclei:
- Cranial nerve nuclei

Detailed gyral identification:
- Introduction
- Key gyri and sulci
- Case studies

We can also provide a more detailed syllabus showing what lectures will be given for each module, and the learning outcomes for each module.

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

Major Lobes and Fissures (both NI4R and IMSc)

Lecture 1
Title: Major Lobes and Fissures
Description: Basic anatomy
Author(s): Dr Zoe Morris
Learning Objectives
- Name the major lobes of the brain and the fissures which separate them
- Identify some of the more important gyri and sulci
- List five ways of identifying the central sulcus on a brain MRI
- Give some examples of the functions of the different lobes

Ventricles and CSF (both NI4R and IMSc)

Lecture 1
Title: Ventricles and basal cisterns
Description: Outline of the anatomy of the ventricles and basal cisterns – main spaces around the brain
Author(s): Prof. Joanna Wardlaw, assisted by Dr Deepak Subed
Learning Objectives
- Describe the anatomy of the ventricles and spaces overlying the brain

Lecture 2
Title: Formation and flow of CSF
Description: Outline function of CSF, its formation and circulation
Author(s): Prof. Joanna Wardlaw
Learning Objectives
- Describe the pathways of formation and drainage of the cerebral spinal fluid
- Explain the function of the cerebral spinal fluid pathways

Lecture 3
Title: Imaging examples
Description: Typical examples of what ventricles and CSF look like when something goes wrong
Author(s): Prof. Joanna Wardlaw, with assistance from Dr Deepak Subedi, Dr Andrew Farrall and Dr Zoe Morris
Learning Objectives
- Describe and recognise what the spaces in and around the brain look like on imaging in health at different ages and in disease
- Work out where the abnormality is from the pattern of blockage or change in space size

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

Major Vessels Vascular Territories (both NI4R and IMSc)

Lecture 1
Title: Arterial system of the brain – anterior circulation
Description: Description of arteries of the anterior circulation and their major branches and territories
Author(s): Dr Deepak Subedi
Learning Objectives
- Identify the major vascular territories of the brain in the anterior circulation
- Identify the major branches of the internal carotid artery and the areas supplied by these branches in anterior circulation

Lecture 2
Title: Arterial system of the brain – posterior circulation
Description: Description of major posterior circulation arteries, their branches and arterial territories
Author(s): Dr Deepak Subedi
Learning Objectives
- Identify the major vascular territories of the brain related to posterior circulation
- Identify the major branches of the vertebral artery and the areas supplied by these branches within the posterior circulation

Lecture 3
Title: Venous drainage of the brain
Description: Major veins and venous sinuses draining the brain will be discussed
Author(s): Dr Deepak Subedi
Learning Objectives
- Describe the venous drainage of the various parts of the brain
- Identify the different intracranial veins and dural venous sinuses

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

Major Internal Connections (NI4R only)

Lecture 1
Title: Major Internal Connections – PART 1
Description: Introduction
Author(s): Dr Susana Munoz Maniega, Dr Zoe Morris, Prof. Joanna Wardlaw
Learning Objectives
- Describe key connections (white matter tracts) in the brain
- Recognise these connections on imaging
- Find sources of more information on white matter tracts
- Discuss the role of key connections in the brain

Lecture 2
Title: Major Internal Connections – PART 2
Description: Descriptions of association and commissural fibres and sensory, motor and visual pathways
Author(s): Dr Susana Munoz Maniega, Dr Zoe Morris, Prof. Joanna Wardlaw
Learning Objectives
- Describe key connections (white matter tracts) in the brain
- Recognise these connections on imaging
- Discuss the role of key connections in the brain
- Find sources of more information on white matter tracts

Cranial nerve nuclei (both NI4R and IMSc)

Lecture 1
Title: Cranial nerve nuclei
Description: Anatomy of the cranial nerve nuclei
Author(s): Dr. Andrew Farrall
Learning Objectives
- Name the twelve cranial nerves
- Describe the functions of the cranial nerves
- Locate the cranial nerve nuclei

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

Detailed gyral identification (NI4R only)

Lecture 1
Title: Introduction
Description: Introduction to methods for linking structure, function and histological knowledge
Author(s): Prof Joanna Wardlaw, with assistance from Dr Zoe Morris
Learning Objectives
- Explain contribution of imaging to improved understanding of brain anatomy/function
- Discuss where knowledge is limited on structure/function
- Find information concerning classification systems for gyri

Lecture 2
Title: Key gyri and sulci
Description: Closer examination of localisation of some further primary and secondary gyri
Author(s): Prof Joanna Wardlaw, with assistance from Dr Zoe Morris
Learning Objectives
- Describe key gyri and their functions
- Discuss where knowledge is limited on structure/function

Lecture 3
Title: Case studies
Description: Case studies of gyral variation and its links to function
Author(s): Prof Joanna Wardlaw, with assistance from Dr Zoe Morris
Learning Objectives
- Give an example of gyral variation and its link to function