



Module Specification

Applied Transplantation Science

Version: 2023-24, v2.0, 08 Feb 2023

Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	4
Part 4: Assessment.....	5
Part 5: Contributes towards	6

Part 1: Information

Module title: Applied Transplantation Science

Module code: USSJPJ-30-M

Level: Level 7

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Health & Applied Sciences

Department: HAS Dept of Applied Sciences

Partner institutions: NHS Blood and Transplant

Field: Applied Sciences

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module focuses on stem-cell, tissue and organ transplantation. Understanding and application of clinical transplantation practice and process is underpinned by teaching in histocompatibility and immunogenetics.

Features: Not applicable

Educational aims: This module aims to provide students with an in-depth knowledge of the theory and practice of stem cell and tissue transplantation. On

completion of the module students will have a sound understanding of histocompatibility and immunogenetics and clinical laboratory practice and process relating to transplantation science.

Outline syllabus: An indicative syllabus typically includes:

The biology of transplantation:

An introduction to the Immunological basis for transplantation, immunogenetics and the major histocompatibility complex. Histocompatibility and immunogenetics in stem cell transplantation and organ transplantation. Physiology and pathophysiology of tissue, solid organ, and haematopoietic stem cell transplantation. Transfusion therapy in the setting of solid organ and stem cell transplantation, including reference to relevant guidelines.

Stem cell and tissue banking:

The processes involved in consent, retrieval, processing, sample coding, storage and issue of tissues and stem cells. Processing and quality assurance of tissues. Cord blood banking and transplantation. Stem cell registries. Processing, storage and issue of haematopoietic stem cell therapies and donor lymphocyte infusions. Relevant legislation and guidelines for stem cell and tissue banking.

Donor considerations for transplantation:

Processes involved in donation of tissues and stem cells. Donor selection for haematopoietic stem cell transplantation. Donor compatibility and organ allocation for transplantation.

Advanced cell therapies:

An introduction to advanced cell and gene therapies, tissue engineering and regenerative medicine. Production and quality assurance of DNA and protein-based therapeutics. Applied biomaterials. Technology transfer, translation and commercialisation in the advanced cell therapy setting.

Personalised medicine:

Incorporation of clinical bioinformatics, pharmacogenomics and genomics, and their roles in personalised medicine within transfusion and transplantation science.

Part 3: Teaching and learning methods

Teaching and learning methods: Teaching will be delivered in blocks, including data-based and laboratory-based practicals. Online lectures and webinars, online case studies (patient scenario-based), online forum and tutorials.

Teaching will focus on being practice-led, embedding the application of transplantation theory, together with current clinical management of stem cell, tissue and organ transplantation.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Critically evaluate the variety of clinical needs for stem cell, organ and tissue transplantation and the processes involved in the transplantation of donated stem cells, organs and tissues.

MO2 Develop, refer to and apply a sound knowledge of current professional practice, research, legislation and clinical guidelines within transplantation medicine.

MO3 Correctly interpret results from patient serological and/or genotyping testing, evaluating options for follow-up investigations on patients, and discussing clinical management

MO4 Select, utilise and evaluate appropriate laboratory methods for pre-transplant work up, assessment of donor compatibility and post-transplant management of patients

MO5 Critically discuss the methods utilised for post-transplant monitoring of recovery and engraftment and the different immunological/non-immunological factors of graft rejection and graft versus host disease.

MO6 Articulate the partnership between the histocompatibility and immunogenetics laboratory and other clinical specialisms supporting solid organ and haematopoietic stem cell transplant (HSCT) patient care.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 300

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://rl.talis.com/3/uwe/lists/E1181612-1F87-B7E1-FE57-14D6918ADE1C.html?lang=en-GB&login=1) via the following link <https://rl.talis.com/3/uwe/lists/E1181612-1F87-B7E1-FE57-14D6918ADE1C.html?lang=en-GB&login=1>

Part 4: Assessment

Assessment strategy: Written exam (50%)

A portfolio of laboratory case studies (50%)

The written examination will assess the student's knowledge on the breadth of the syllabus and evidence their ability to critically analyse and apply current research from the scientific literature and clinical guidelines. This assessment is supported by the examination assessment for Applied Transfusion Science and a revision tutorial.

The portfolio will evidence interpretation of data obtained in laboratory practical classes and understanding of practical application of theoretical concepts, which are critical skills for transplantation specialists. Students will be supported in this assessment by in-session guidance from the teaching team and formative feedback on work completed in the initial practical session.

Assessment tasks:

Examination (Online) (First Sit)

Description: Online Exam (2 hours)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO5, MO6

Portfolio (First Sit)

Description: A portfolio of laboratory case studies (2500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO2, MO3, MO4

Examination (Online) (Resit)

Description: Online Exam (2 hours)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO5, MO6

Portfolio (Resit)

Description: A portfolio of laboratory case studies (2500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Applied Transfusion and Transplantation Science [Frenchay] MSc 2023-24

Applied Transfusion and Transplantation Science [Frenchay] MSc 2023-24

