



**OBAFEMI AWOLOWO UNIVERSITY
ILE-IFE, NIGERIA
FACULTY OF BASIC MEDICAL SCIENCES
COLLEGE OF HEALTH SCIENCES**

**DEPARTMENT OF HAEMATOLOGY
AND IMMUNOLOGY**

HANDBOOK

2025/2026

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1.0 MEMBERSHIP OF FACULTY OF BASIC CLINICAL SCIENCES

DEAN'S OFFICE:

Dean, FBMS

- Professor A. O. Aboderin

Vice-Dean, FBMS

- Dr. A. K. Ajeigbe

Faculty Secretary

- Mrs. S. O. Makanju

1.1 DEPARTMENT OF HAEMATOLOGY AND IMMUNOLOGY

1.1.1 ACADEMIC STAFF

Temilola O. Owojuyigbe

- Head of Department

MBBS (Ibadan 2001); FMCPATH (Nig. 2011);

- Senior Lecturer

MSc (Ife 2018)

Lateef Salawu

- Professor

BSc (Ife 1984); MBChB (Ife 1987);

FWACP (Lab. Med. 1998)

FMCPATH (Nig. 1998); MSc (Ibadan 2003)

MD (NPMCN 2020)

Ramoni A. Bolarinwa

- Professor

MB ChB (Ife 1998); FMCPATH (Nig. 2006)

MSc (Ibadan 2009);

Ibrahim O. Ahmed

- Lecturer I

MBBS (Ilorin 2015); MD (Nig. 2023);

FMCPATH (Nig. 2024)

Olatokunbo O. Oguns

- Lecturer I

MBChB (Ife 2011); FMCPATH (Nig. 2021)

Olusola J. Olarewaju

- Lecturer I

MBChB (Ife 2007); FMCPATH (Nig. 2019)

NON-ACADEMIC STAFF

1.1.2 TECHNICAL STAFF

F.I. Aboderin (Mrs.) MLS, FIMLT, MSc	- Deputy Director
L. O. Akinyemi L.O. (Mr.) ANIST	- Chief Laboratory Technologist
F. A. Obadire (Mrs.)	- Senior Assistant Technologist
S.O. Fasae (Mr.)	- Senior Laboratory Superintendent
C. O. Famoriyo (Mrs.)	- Senior Laboratory Supervisor

1.1.3 ADMINISTRATIVE STAFF

O. O. Eze (Mrs.)	- Principal Data Processing Officer II
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1.2 History of the University

Obafemi Awolowo University, Ile-Ife is one of three Universities established in Nigeria between 1961 and 1962 as a result of the report submitted to the Federal Government in September, 1960, by a Commission it appointed in April 1959 under the Chairmanship of Sir Eric Ashby, Master of Clare College, Cambridge, to survey the needs of post-secondary and higher education in Nigeria over the next twenty years. On 8th June, 1961 the Law providing for the establishment of the Provisional Council of the University was formally inaugurated under the Chairmanship of Chief Rotimi Williams.

On 11th June, 1970, an Edict known as the University of Ife edict, 1970 was promulgated by the Government of the Western State to replace the Provisional Council Law of 8th June, 1961. This Edict has since been amended by the Obafemi Awolowo University, Ile-Ife (Amended) Edict No. 112 of 1975 (Transitional Provisions) Decree No.23 of 1975. This new Decree effected a takeover of the Obafemi Awolowo University by the Federal Military Government and established a Provisional Council as an interim governing body of the University which shall subject to the general direction of the Head of the Federal Government, control the policies and finances of the University and manage its affairs. This Provisional Council has since been replaced by a Governing Council.

The University started with five Faculties – Agriculture, Arts, Economics and Social Studies (now Social Sciences), Law and Science. Six new Faculties have since been added, namely the Faculty of Education (established on 1st October, 1967), the Faculty of Pharmacy (established on 1st October, 1969), the Faculties Technology and Health Sciences (now College of Health Sciences) (both established on 1st October, 1960), Faculty of

Administration with effect from 1st October 1979) and Faculty of Environmental Design and Management (established on April 6, 1982).

In 1992, the University established a collegiate system with five Colleges. The system did not function effectively and was abandoned after two years. However, the Postgraduate College and the College of Health Sciences were retained. The College of Health Sciences now comprises of the Faculties of Basic Medical Sciences, Basic Clinical Sciences, Clinical Sciences, Dentistry and Nursing.

The following other Institutes and major units exist in the University:

- The Adeyemi College of Education located in Ondo
- The Institute of Agricultural Research and Training, Ibadan
- The Natural History Museum
- The Institute of Ecology and Environmental Studies
- The Centre for Gender and social Policy Studies
- The Centre for Industrial Research and Development
- The Institute of Public Health
- The Institute of Cultural Studies
- The Technology Planning and Development Unit
- The Computer Centre
- The Drug Research and Production Unit
- The Equipment Maintenance and Development Centre
- The Central Technological Laboratory Workshop
- The Central Science Laboratory
- Centre for Gender and Social Policy Studies
- Centre for Distance Learning
- Entrepreneurship and Development Studies (IFEDS)
- Obafemi Awolowo University Investment Company Limited

Finally, some other agencies over which the University has no direct, or, in some cases limited control, have premises within the University.

- African Regional Institute for Geospatial Information Science and Technology (AFRIGIST) formerly RECTAS
- The National central for Technology Management
- The Centre for Energy Research and Development
- The African Regional Centre for Space Science and Education in English.

Finally, some other agencies over which the University has no direct, or, in some cases limited control, have premises within the University.

The student population has rising steadily from 244 in 1962/63 to over 30,000 at present.

1.3 Mission, Vision, Major Thrusts of the University

Mission

To nurture a teaching and learning community; advance frontiers of knowledge; engender a sense of selfless public service; and add value to African culture.

Vision

A top-rated University in Africa.

The **major thrusts** of the University Strategic Plan for 2025 – 2030 are:

- Teaching,
- Research and Innovation,
- Governance,
- Fund Generation and Management,
- Human Resources Development and
- Infrastructure and Estate Development.

These major thrusts involve the following broad objectives:

- The modernisation of the University's teaching programmes, through a continuous review of the curricula and teaching support services
- The pursuit of a research agenda that will deepen the University's contribution to national development through research outputs and products uptake,
- The preparation of students for self-employment and entrepreneurship.
- The continued development and expansion of Information and Communication Technology (ICT) for all aspects of the institution's functions.
- An expanded revenue base backed by improved financial management capability.
- The development of strategic linkages and partnerships

1.4 Background of the Department

The Department of Haematology and Immunology was created as a separate department from the old Department of Chemical Pathology, Haematology and Immunology on the 1st of August 1983. It is now a component part of the Faculty of Basic Medical Sciences, one of the three Faculties of the College of Health Sciences.

1.5 Previous Heads of Department

Name	Qualifications	Period of Service
Prof Kayode A. Adetugbo	B.Sc., MD (USA) Fellowship (Haematology), PhD	1983 – 1990
Prof Muheez A. Durosinmi	MBBS, FMCPPath	1990 - 1994 1997 - 2001
Prof Norah O. Akinola	B.Sc. MBChB, PhD, FMCP, FMCPPath, FACP	1994 - 1997 2001 – 2005 2011 – 2013 2021 – 2023
Dr Ismail A. Adediran	MBBS, FMCPPath	2005 – 2007
Prof Lateef Salawu	B.Sc., MBChB, FWACP (Lab. Med), FMCPPath, M.Sc., MD	2007 – 2011 2019 – 2021
Dr Anthony A. Oyekunle	MBBS, FMCPPath	2013 – 2015
Prof Ramoni A. Bolarinwa	MBChB, FMCPPath, M.Sc., MD	2015 – 2019 2023 – 2025

1.6. Mission and Vision of the Department

i. **Mission**

To nurture a teaching and learning environment for Haematology and Immunology; to advance the frontiers of knowledge in Haematology and Immunology and to provide selfless service.

ii. **Vision**

To be a centre of excellence in medical education, research and clinical service with particular focus on Haematology and Immunology.

1.7. Academic Programmes

Academic programmes in the department consist of:

- i. Undergraduate Programme in Haematology and Immunology for medical and dental students
- ii. Postgraduate Programmes in Immunology which include:
 - a. Master of Science (M.Sc.) in Immunology
 - b. Master of Philosophy (MPhil) in Immunology
 - c. Doctor of Philosophy (PhD) in Immunology

1.8. Undergraduate Programme in Haematology & Immunology

The undergraduate programme in Haematology and Immunology is focussed on 4th year medical and dental students.

In the 4th year of training, medical and dental students undergo basic teaching in Haematology and Immunology as part of the integrated course in Pathology (CLI 430) leading to the second professional MBChB/BChD degree examinations. During this period, the students are exposed to both laboratory and bedside clinical teachings in both Haematology and Immunology.

There is also a two-week course in Haematology for students in the final year of the MBChB degree programme rotating through the department.

Objectives

Students are expected to understand the basic concepts of laboratory tests used to make diagnosis of common haematological and immunological diseases. This knowledge will enable them to provide appropriate management options which may be obtained through attendance at core lectures, laboratory practical sessions, tutorials and clinical exposure.

Haematology

Lectures: 18-week, 2 hour lectures in general haematology, incorporating topics on red cells and their disorders (physiology, metabolism, anaemia, haemolytic disorders including haemoglobinopathies and enzymopathies), white cells and their pathology (normal physiology, quantitative abnormalities and the leukaemias, lymphomas and related disorders), haemostasis and platelet physiology and abnormalities; blood transfusion (blood group physiology, donor recruitments, cross matching), alloimmune haemolytic diseases of the newborn and blood and blood products transfusion and their complications.

Block Postings: Four-week block postings during which students are divided into smaller groups, usually 10 groups per session, each group spends four weeks for:

1. **Practical sessions** (3-hour, twice every week): focusing on haemocytometry, blood film making and interpretation, diagnosis of haemoglobinopathies, coagulation screening tests and blood group serology.

2. **Tutorials** (2-hour weekly tutorial sessions): Anaemias, coagulation disorders in particular management of deep venous thrombosis, haemoglobinopathies with emphasis on sickle cell anaemia and use of blood and blood products and transfusion reactions.
3. **Clinical Posting:** Attendance at Haematology Ward rounds and Clinics, each 3-4 hours per week

Immunology

1. Lectures: A 16-week 2 hour weekly afternoon lectures on basic and clinical aspects of immunology incorporating topics on the structures and functions of the immune system, antigen and antibody: their structure, genetics, biosynthesis and functions, complement physiology, autoimmunity and autoimmune disorders, immunodeficiency disorders, hypersensitivity reactions, immunopathology of some haematological disorders, human leukocyte antigen (HLA) structures and functions and clinical transplantation, and biological therapy

2. Practical sessions (3 hours weekly): On serological techniques such as preparation of simple laboratory reagents, haemagglutination and precipitation techniques, Immunoelectrophoresis procedures and their clinical applications.

Tutorials (1-hour weekly tutorial sessions): Antigens, antibodies and complement fixation; immunodeficiency disorders; hypersensitivity reactions; autoimmune disorders and HLA and transplant immunology.

1.9. UNDERGRADUATE CURRICULUM FOR PART IV MBChB/BChD)

	COURSE CODE	COURSE DESCRIPTION	REQUIRED HOURS			
			L	T	P	Units
Old name	CLI 430	Haematology Lectures 2 hours per week x 18 weeks Immunology Lectures 2 hours per week x 16 weeks	78	12	36	
New	HEM 401	General Haematology	2	1	3	4
	HEM 402	Blood Transfusion Medicine	2	1	3	4
	HEM 403	Haemostasis and Thrombosis	2	1	3	4
	HEM 404	Haemoglobinopathies	2	1	3	4
	HEM 405	Haemato-Oncology	2	1	3	4
	IMM 401	Introductory Immunology	2	1	3	4
	IMM 402	Immunological Diseases	2	1	3	4
	IMM 403	HLA and Clinical Transplantation	2	1	3	4
	IMM 404	Immuno-Haematology	2	1	3	4
	IMM 405	Introduction to Immuno-Chemistry	2	1	3	4

Key: L = Lecture; T = Tutorial (Seminar); P = Practical

**2.0. DESCRIPTION OF UNDERGRADUATE COURSES FOR PART IV
MBChB/BChD**

S/N	COURSE (CODE) Course Description
1	<p>GENERAL HAEMATOLOGY (HEM 401) Development. Morphology and Functions of Red Blood Cell Development. Morphology and Functions of White Blood Cell Development. Morphology and Functions of Platelets Definition and Classification of Anaemia Iron metabolism. Iron Deficiency Anaemia and Iron Overload Folate and Vitamin B12 Metabolism and Megaloblastic Anaemia Haemolytic Anaemia: Classification and Management Anaemia of the Systemic Disorders Structure. Function and Control of Synthesis of Normal Haemoglobin and Haemoglobin Abnormalities HIV/AIDS</p>
2	<p>BLOOD TRANSFUSION MEDICINE (HEM 402) Blood Groups. Red cell antigen and antibodies ABO and Rh grouping and crossmatching of Blood DAT. Screening of Blood for TTIs Indications and Complications of Blood Transfusion including Blood products transfusion</p>
3	<p>HAEMOSTASIS AND THROMBOSIS (HEM 403) Normal haemostasis. investigation of bleeding disorders Vascular and platelet disorders Inherited and acquired coagulation disorders Deep Venous and Arterial Thrombosis (Diagnosis and Management)</p>
4	<p>HAEMOGLOBINOPATHIES (HEM 404) Sickle Cell Disease and Thalassaemia Genetic Counselling and Antenatal Diagnosis of Haemoglobinopathies Determination of Haemoglobin variants Bone marrow transplant for Haemoglobinopathies</p>
5	<p>HAEMATO-ONCOLOGY (HEM 405) Leukaemia: Aetiology. Classification and Treatment Lymphomas (NHL: HL: BL) and Myelomatosis (MM, Paraproteins) Myeloproliferative neoplasms - PV. Myelofibrosis: Essential Thrombocythaemia Stem Cell Transplant for Haematological Cancers Hyper-immune Malaria Splenomegaly syndrome Basic Molecular Biology and Genetics</p>

	Cancer Chemotherapy. Targeted Chemotherapy Bone Marrow Failure Syndromes: Hypoplastic Anaemia and Aplastic Anaemia
6	INTRODUCTORY IMMUNOLOGY (IMM 401) Development, Morphology and Function of the Immune System Development, Morphology and Functions of the cells and organs of the Immune System: Cells and Organs – Spleen, Bone Marrow, Thymus, MALT CD Classification of Human Leucocyte differentiation antigens Structure and functions of Immunoglobulins: genetic and biosynthesis inclusive. The Immune System: Innate and adaptive The Complement System The Cytokines Antigen and Antigenicity
7	IMMUNOLOGICAL DISORDERS (IMM 402) Hypersensitivity disorders AIHA, ITP, HDN, Ankylosing Spondylitis, SLE, TSS (HMS), RA, Sarcoidosis Endocrine Disorders Immunodeficiency disorders: Immunoglobulinopathies, HIV, Secondary Immunodeficiency Immunotherapy Allergens, Urticaria
8	HLA AND CLINICAL TRANSPLANTATION (IMM 403) Structure, Function and genetics of HLA Clinical Transplantation - Kidney and other organs transplantation Gratt versus Host disease Molecular methods in Transplantation
9	IMMUNO-HAEMATOLOGY (IMM 404) Autoantibodies, alloantibodies to red blood cells and haemolysis Applications of immunological methods and principles in Haematology Lymphoid tissue/ organ system Immunodeficiencies and Haematological cancers
10	INTRODUCTION TO IMMUNO-CHEMISTRY (IMM 405) Preparation, purification and characterisation of antigens and antibodies Complement biology and technology: -Radio-immuno-assay - Immunofluorescence - Immunodiagnosis Receptors and signalling of the B and T cells receptors Receptors and signalling in Cytokines and Chemokines Organization and expression of Lymphocyte receptor

2.1. RESEARCH ACTIVITIES

The following research activities are planned for the future or on-going in the Department:

1. Chromosomal abnormalities in haematologic malignancies.
2. Tyrosine kinase inhibitors in haematologic cancers and GIST.
3. Treatment and genetic characterisation of Burkitt's lymphoma.
4. Xeloda in locally advanced breast cancer in Nigerian women.
5. Sero-epidemiology of HIV-1 and HIV-2 infections in Nigerians.
6. Purification, characterization and applications of new lectins.
7. Lipid profiles in HIV/AIDS patients.
8. Lipid and coagulation factors of sickle cell patients as risk for cardiovascular disease.
9. Tissue typing in renal transplantation.
10. Immune disorders in Haematologic disorders and malignancies.
11. Neonatal screening for haemoglobinopathies.
12. Clinical trials of antisickling agents.

2.2. SERVICES

Faculty members in this department are involved in

- a. the training of postgraduate resident doctors in the speciality of Haematology and Blood Transfusion;
- b. providing Specialist Consultancy service to the Teaching Hospital, including the Renal Transplant Unit and the OAU Health Centre; and
- c. the promotion of awareness of the community in the area of sickle cell disorder through the Sickle Cell Club, Ife and HIV infection through civil society organizations.

3.0. POSTGRADUATE PROGRAMMES IN IMMUNOLOGY

Preamble

Postgraduate programmes in Immunology, notably MSc and PhD, had been available in the then Faculty of Health Sciences in the eighties but became moribund for lack of facilities to conduct meaningful research. It has been resuscitated and an M.Phil. programme has been included.

1. Introduction

Postgraduate programmes in Immunology offer a multidisciplinary approach to formal studies and research in Immunology at the Obafemi Awolowo University, Ile-Ife. These multi-departmental and multi-faculty programmes are based in the Department of Haematology and Immunology, Faculty of Basic Medical Sciences, College of Health Sciences. Since Immunology is the basis of many diseases/disorders known to man and a tool used in recombinant DNA technology, a thorough understanding of this discipline is

essential and should integrate other biological sciences such as, cell biology, molecular genetics, molecular biophysics, biochemistry, microbiology (virology), parasitology, haematology, pathology and clinical medicine.

2. Objectives

Immunology postgraduate programmes will provide fundamental knowledge and training in Immunology such that candidates will be enabled to teach the subject, conduct research and provide service in this area of clinical medicine. The candidate shall be capable of scientific analysis of the immune system, its genes and associated receptors and signals. The candidate shall also be able to interpret such results within formal/scientific and clinical settings.

These programmes shall therefore contribute to the work force of the nation by producing:

- i) Teachers of Immunology;
- ii) Research scientists in immunochemistry and immunobiology; and
- iii) Clinical Immunologists capable of diagnostic laboratory services in serology, immunochemistry and immunobiology.

3. Degrees Offered

Master of Science (M. Sc.) in Immunology;
Master of Philosophy (M. Phil) in Immunology; and
Doctor of Philosophy (Ph. D.) in Immunology

4. Admission Requirements

A. M.Sc Programme

An applicant for M. Sc (Immunology) shall be a graduate of the Obafemi Awolowo University, Ile-Ife, or of any other approved university with a bachelor's degree in a biomedical science e.g., Medicine, Biochemistry, Chemistry, Physiology, Anatomy, Pharmacy, Dentistry, Nursing, Microbiology, Haematology, Immunology, Public Health or Veterinary Medicine. The applicant shall normally possess at least a second-class lower division honours bachelor's degree or an equivalent unclassified degree to be eligible for admission.

B. M.Phil Programme

An applicant for M. Phil shall be a graduate of Obafemi Awolowo University or any other approved university

a) with a Bachelor's Degree in a biomedical Science e.g., Medicine, Dentistry, Biochemistry, Chemistry, Anatomy, Physiology, Pharmacy, Nursing, Microbiology, Haematology, Immunology, Public Health or Veterinary Medicine. The applicant shall normally possess not less than a second class (Upper Division) honours degree (or equivalent unclassified degree) to be eligible for admission.

b) holding a Master's Degree in Immunology or a related subject with an average of less than 60% (B+) in the course work.

C. Ph.D. Programme

An applicant shall be a graduate of Obafemi Awolowo University or any other approved university and possess a Master's Degree in Immunology with a research thesis and a weighted coursework average which shall normally not be less than 60% (B+) or an M. Phil Degree in Immunology.

5. M.Sc. and M. Phil Programmes

5.1 M.Sc Programme

5.1.1 *Minimum Requirements:*

To qualify for an M.Sc. degree, the candidates shall be required to take at least 13 units of core courses (IMM 601, 605, 607, 617 and 623); 6 units of approved elective courses; and 6 units of a research thesis on any topic of interest. Each student's plan of study and title of research must be accepted by his supervisor and recommended by the Faculty Postgraduate Committee to the Postgraduate College for approval. The total workload shall be 25 units.

5.2 M. Phil Programme

Minimum Requirements

5.2.1 Candidates with Master's Degree in Immunology shall be required to take six units of relevant core courses as may be directed by the Board of Postgraduate College on recommendation of the Faculty Committee (see list of core courses below).

5.2.2 Candidates with Master's Degree in related subjects shall be required to take all the core courses (13 units) in M. Sc (Immunology). The total workload shall be 30 units.

5.3 *Courses offered:*

5.3.1 Harmattan Semester (Core Courses)

Course Code	Course Title	Units
IMM 601	The Immune System	3
IMM 605	Cellular Immunology	3
IMM 607	Parasitism, Infection and Immunity	3
IMM 623	Immunochemistry	3
IMM 617	Current Topics in Immunobiology and Immunology	1

5.3.2 Rain Semester

A) Departmental (Sub-specialty) Elective Courses:

Course Code	Course Title	Units
IMM 606	Immunogenetics and Transplantation Immunology	2
IMM 615	Foundations of Mammalian Cell Culture	3
IMM 608	Molecular Approach to Immunology	3
IMM 610	Membrane Immunochemistry	3
IMM 612	Immunohaematology and Oncology	2
IMM 614	Immunological Diseases	2

Immunology (IMM) courses that are not core courses may be offered as sub-specialty electives, together with non-departmental courses in areas of interest as desired by the applicant. At least 3 units or at most 4 units of courses shall be offered from the departmental elective list above and at least a 2-unit course from non-departmental elective list below.

B) Approved Non-Departmental Elective Courses:

Course Code	Course Title	Units
BCH 603	Advances in protein chemistry	3
BCH 606	Advanced molecular Biology	3
BCH 608	Biological membranes	2
BCH 609	Current Topics in Cellular Regulation	3
BOT 619	Advanced Cytogenetics	3
CHP 607	Nutrition and Metabolic Disorders	3
CHP 608	Clinical Enzymology	3
CLI 619	Advanced Haematology	3
MIC 611	Advanced Virology	3
MMP 600	Principles and Clinical Aspects of Bacterial Infections	3
MMP 602	Principles and Clinical Aspects of Virology	3
ZOO 618	Animal Cytogenetics	3

Total No. of Units for Elective Courses (A + B) = [3 (4) + 3 (2)] = 6

6 Ph.D. Programme

6.1 *Minimum Requirements are as stated in the handbook on the Regulations Governing Postgraduate Studies of the Postgraduate College.*

7. Course Descriptions for Postgraduate Immunology Courses

IMM 601 - *The Immune System*

2-0-3, 3 Units

An advanced course stressing the central and fundamental concepts in modern immunology, structure, and biosynthesis of antibodies; antigenicity; antigen-antibody reactions; the specificity of immune reactions. The lymphocyte in immunity. Hypersensitivity; immunodeficiency and auto-immunity. Immunity to tumours; histocompatibility antigens.

IMM 605 – *Cellular Immunology*

1-1-3, 3 Units

A detailed study and analysis of cellular mechanisms in the immune system. T and B cell fractionation and identification. Functions of T and B cells. Lymphokines; macrophages; memory. Tolerance. Structure and function of lymphoid tissue. Cooperations in the immune response cytotoxic mechanisms. Delayed hypersensitivity.

IMM 606 - *Immunogenetics and Transplantation Immunology*

1-1-0, 2 Units

The genetics and fine structure of the major histocompatibility complex (MHC) loci. Transplantation and rejection. Histocompatibility antigens. GvH reactions. Modes of rejection. Immune response to tumours. Immune response genes. Demonstration of tissue typing methodology.

IMM 607 – *Parasitism, Infection and Immunity*

1-1-3, 3 Units

A course dealing with microbial, protozoan and metazoan parasites of man and other animals, and the host cell responses to these. Mechanisms of resistance; immunological consequences of parasitism and infection. Immunological methods in virology, bacteriology and parasitology.

IMM 608 – *Molecular Approach to Immunology*

1-1-3, 3 Units

Modern molecular probes for Immunobiology. A detailed study of the molecular structure and function of antibodies, and the evolution genetic basis of variation. Structure function relationships, the binding site. Ig genetic fine structure. Molecular basis for immune signals and their receptors. (Prerequisite: IMM 601)

IMM 610 – *Membrane Immunochemistry*

1-1-3, 3 Units

Immunochemical approaches to the determination of the structure and function of biological membranes. The lymphocyte membrane; membrane flow phenomena,

capping patching, and their molecular bases. Immunochemical definition of membrane assembly. Immunoelectron microscopy of the cell membrane.

IMM 612 – *Immunohaematology and Oncology*

1-0-3, 2 Units

A course dealing with the application of immunological methods and principles in haematology and oncology. Alloantibodies and haemolysis; lymphoid tissue systems; immunodeficiency and haematological cancers; immunotherapy in leukaemias; immunosuppression. Antibodies to platelets and white cells. Immunogenetics of human blood groups and transfusion therapies.

IMM 614 – *Immunological Diseases*

1-0-3, 2 Units

Alterations in T and B cell structure and functions in human disease states. In – appropriate immune responses. Immunological disease entities: diagnostic principles etiology: pathogenesis: animal models. Manipulation of the immune system.

IMM 615 – *Foundations of Mammalian Cell Culture*

1-1-3, 3 Units

The foundations and applications of mammalian cell and tissue culture. Establishment of differentiated cell lines. The use of culture technics to solve fundamental problems in cell and molecular biology, with special reference to applications to cells of the immune system.

IMM 617 – *Current Topics in Immunobiology and Immunology*

0-1-0, 1 unit

Seminars by student and staff on the most relevant contemporary issues in immunological sciences. Guest lecturers will be invited to participate.

IMM 623 – *Immunochemistry*

2-0-3, 3 Units

Preparation, purification and characterization of antigens and antibodies; complement biology and technology; immune complexes antigen antibody interactions; radioimmunoassay; immuno-fluorescence.