Disease and Immunity

SBS-2-511

Blackboard site

2011/2012

Level 5
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1.0 UNIT DETAILS

Unit Title: Disease and Immunity
Unit Level: 2
Unit Reference Number: SBS - 2 - 511
Credit Value: 1 Credit = 15 CATS units
Student Study Hours: 150 hours
Contact Hours: 51 hours
Private Study Hours: 99 hours
Pre-requisite Learning (If applicable): Microbiology
Co-requisite Units (If applicable): None
Course(s): Food and Bioscience Programme
Year and Semester: 2004/05 Semester 2
Unit Coordinator: Dr Neil Morgan
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   Email acordj@lsbu.ac.uk

Teaching Team & Contact Details (If applicable):

Subject Area: Bioscience and Food
Summary of Assessment Method: 100% Examination

"This guide is designed to help you structure your learning by providing an indicative structure and content for the unit. It is a guide and not a definitive statement of what you will be taught. We will try to follow this published schedule as far as possible, but there may be some variation as the unit develops and as we try to match the pace and content of our teaching to student needs."

2.0 SHORT DESCRIPTION

The unit looks at various types of disease:
Infectious, congenital (genetic and acquired), degenerative, metabolic (endocrine and nutritional), immunological (auto immune, allergic, inflammatory), nepotistic.
The basics of the immune system and diagnosis and therapy.

3.0 AIMS OF THE MODULE

1. To give the students an appreciation of the role of disease in history and the perceptions of what is health and ill health.

2. To transmit a body of factual knowledge on basic immunology.
3. Survey the various types of disease and methods used to study them including epidemiology, diagnosis and therapy.

4.0 LEARNING OUTCOMES

4.1 KNOWLEDGE AND UNDERSTANDING

At the end of this unit, a student will be able to:

1. Appreciate the many types of disease and the methods of diagnosis, and therapy.
2. Understand the basic structure and function of the immune system.

4.2 INTELLECTUAL SKILLS

Students who engage fully with the unit will further develop skills acquired earlier in the programme of study. In particular, there will be opportunities to develop:

*learning how to learn;* there are numerous aspects to this skill which will be developed e.g. time management, finding information, analysing information critically.

*Use of information and communication technology:* the use of Web Of Science (WOS) database and the Internet and CD-ROMs will be expected. As well as the unit’s Blackboard site.

*ability in critical analysis;* this key intellectual skill is a major learning outcome of this unit and a main indicator of attainment of graduate status. In the unit the practical classes will develop this skill.

*understanding methodologies;* this will developed as a result of practical classes

*Numeracy skills:* will be practised during the practical sessions.

4.3 PRACTICAL SKILLS

The practical programme will involve microscopy, calibration, analysis of data of prepared human blood slides. Basic immunological techniques will be learnt.
4.4 TRANSFERABLE SKILLS

Communication skills; oral communication will be required during scheduled classes and practical sessions.

Ability to work in a team; The development will be an important skill will occur during the practical sessions.

5.0 INTRODUCTION TO STUDYING THE MODULE

5.1 OVERVIEW OF THE MAIN CONTENT

Content

Health and Disease
Theories of health and ill health in different cultures and times.

Types of Disease
Infectious, congenital (genetic and acquired), degenerative, metabolic (endocrine and nutritional), immunological (auto immune, allergic, inflammatory), nepotistic.

Immunology
The non-specific immune system and inflammation.
Specific immunity: B cells and antibodies, T cells.
Clinical aspects: vaccination, immunodeficiency, hypersensitivity and autoimmunity.
Using antibodies: immunoassays and monoclonal antibodies.

Recovery from disease
Immunological and chemotherapy.

5.2 OVERVIEW OF TYPES OF CLASSES

Teaching and Learning Pattern:
The unit comprises of 12 weeks of formal lectures, (2 per week). Each student will take part in tutorials. In addition, there will be 4 practical sessions, each of 3 hour duration including a visit to the Fleming Museum.

5.3 IMPORTANCE OF STUDENT SELF-MANAGED LEARNING TIME

In preparation for each lecture/tutorial/practical class you should read your notes from level 1 Microbiology.
6.0 THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

Lectures and tutorials (Tuesday 10-1 LR 401) Practical Wednesday J302

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Practical Friday 2-5
20 – 23 J302 NLM/MB
1 Cells and organs of the immune system.
2 Immunoassays - Qualitative and quantitative
3 Pathogenic microbes.
4 Visit to a museum – Fleming Museum.

LECTURES AND TUTORIALS

A and B lectures
J = Janeway

Week 19
A Introduction to the unit, assessment, practicals, Types of disease
B Infectious disease
J c 1

Week 20
A Cells and organs of the immune system – link to practical 1
B    Toxins
Friday 2-5 J302
Cells and organs of the immune system practical 1
J c 1

Practical  J304

**Week 21**
A    Basic immunology
B    Antibodies link to practical 3
Friday 2-5 J302 – practical 3
J c 1,2
Tutorial 1
**Practical 2-5  J304 Practical 1**

**Week 22**
A    Innate immunity
B    Bacterial diseases
Tutorial 2
J c 1,2
**Friday 2-5 J302 Practical 2**

**Week 23**
A    B cells
B    T cells
Tutorial 3
J c 3
Visit Fleming Museum

**Week 24**
A    Immunological methods
B    Virus diseases
Tutorial 4
J c Appendix 1

**Week 25  Applied immunology**
A    Infectious diseases
B    Allergy - Type 1
Tutorial 5

**Week 26**
A    Allergy Type 2, Blood grouping, Transfusions
B    Allergy Type 3 ,4
Week 27
Chemotherapy
B Chemotherapy

Week 28 - 30 Easter

Week 31
A Vaccination
B Chemotherapy
J c 16

Week 32
A Autimmunity
B Chemotherapy
J c 15
Tutorial 5

Week 33
A Transplantation
B Chemotherapy
Tutorial 6
J c 15

Week 34 Revision all staff

Tutorial Programme
Tutorials 1-6
Weeks 20 - 26
See tutorial booklet

Tutorial topics
1 Your disease and vaccination history
2 Disease and the immune system
3 Tuberculosis
4 Hepatitis
5 Nosocomal infections
6 HIV infection and AIDS: controversies
7.0 ASSESSMENT OF THE UNIT

Assessment Method:
The unit will be assessed by a 2 hour examination (3 out of 6 questions)
Section A of the examination paper will cover the practical classes (1 out of 2 questions)
Section B 2 out of 4 questions.
A student must achieve a minimum overall unit mark of 40% to pass the unit.
In addition students are required to attend the laboratory sessions and keep a record of
the experimental work in order to pass this unit.

Old examination papers are available on line – go to
LSBU home page
Library – LISA
Subject portals – Science
Bioscience
Examination papers

8.0 LEARNING RESOURCES

8.1 CORE MATERIALS

CORE READING:

Core Text
Janeway’s Immunobiology 8th Edition Kenneth Murphy

General texts


This book should also be familiar from your first semester courses. It includes a
good summary of cell structure. It also has a large section on immunology,
parts of which are referenced as basic reading for some of the immunology
lectures.

Campbell NA. Reece J.B. Biology, 6th edition. Benjamin/Cummins

The main text for this unit. The suggested reading from this book indicated in
the lecture programme will help ensure that you understand the main points.
You should already have purchased a copy in the first semester.

Good text

Journals are available on line – go to
LSBU home page
Library – LISA
Subject portals – Science
Other useful texts

If you want to investigate an area in more depth, or wish to read an alternative account of a topic you find confusing, consult one of the books described below. All are available in the library (with copies in the key text collection and others available for one-week loan). Don’t forget that you can reserve copies if all are out on loan.

Benjamini E. and Leskowitz S. *Immunology - A Short Course* Alan R. Liss New York (1988)


Roitt IM. *Essential Immunology, 8th edition.* Blackwell Scientific (1994)


NOTES

Blackboard site for this unit
No pass word required