

## Liverpool John Moores University

Title: IMMUNOLOGY  
Status: Definitive  
Code: **5001BMBMOL** (101466)  
Version Start Date: 01-08-2011

Owning School/Faculty: Pharmacy & Biomolecular Sciences  
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
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Peter Elliott	

**Academic Level:** FHEQ5      **Credit Value:** 12.00      **Total Delivered Hours:** 28.50

**Total Learning Hours:** 120      **Private Study:** 91

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	24.000
Practical	3.000

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Section A: short answer, Section B: 2 essays from 4	60.0	1.50
Practice	AS2	Practical	40.0	

### Aims

*To provide a basic understanding of the theory and practice of immunology*

## Learning Outcomes

After completing the module the student should be able to:

- 1 State the function of immune systems.
- 2 Understand the concept of self / non-self.
- 3 Describe the major tissues, cells and molecules of immunity and their locations.
- 4 Distinguish between innate and adaptive immunity and between humoral and cellular immunity.
- 5 Describe monoclonal and polyclonal antibody synthesis, structure and function.
- 6 Describe the complement system.
- 7 Describe antigen presentation, the T cell receptor and the main features of cellular immunity.
- 8 Describe the principles of vaccination.
- 9 Demonstrate the ability to undertake a laboratory exercise, record and interpret results.

## Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

EXAM	1	2	3	4	5	6	7	8
Practical report	5	9						

## Outline Syllabus

*Overview of Immunity: concepts of self and non-self, innate and adaptive immunity, immune surveillance and tolerance, specificity and diversity of immune response.*

*Immune cells and tissues. B and T cell receptors and the MHC.*

*Humoral immunity: antibody structure and function, primary and secondary responses, antigen-antibody interactions, complement.*

*Cellular immunity: antigen presentation, clonal expansion, concepts of immunological memory, cytokines.*

*Vaccination: active and passive immunisation; primary and secondary responses.*

*Immunological techniques: monoclonal and polyclonal antibodies, EMIT, ELISA, immunoprecipitation.*

## Learning Activities

Lectures, videos, practicals.

## References

<b>Course Material</b>	Book
<b>Author</b>	Hay, F. C. and Westwood, O.

<b>Publishing Year</b>	2002
<b>Title</b>	Practical Immunology
<b>Subtitle</b>	
<b>Edition</b>	5th ed.
<b>Publisher</b>	Blackwell Science
<b>ISBN</b>	ISBN 0865429618

<b>Course Material</b>	Book
<b>Author</b>	Janeway, C. A., Travers, P., Walport, M. and Shlomchik, M.
<b>Publishing Year</b>	2005
<b>Title</b>	Immunobiology
<b>Subtitle</b>	
<b>Edition</b>	6th ed.
<b>Publisher</b>	Churchill Livingstone
<b>ISBN</b>	ISBN 081533642

<b>Course Material</b>	Book
<b>Author</b>	Lydyard, P.M., Whelan, A. and Fanger, M.W.
<b>Publishing Year</b>	2004
<b>Title</b>	Instant Notes in Immunology.
<b>Subtitle</b>	
<b>Edition</b>	
<b>Publisher</b>	BIOS Scientific
<b>ISBN</b>	ISBN 1859960774

<b>Course Material</b>	Book
<b>Author</b>	Playfair, J. and Bancroft, G.
<b>Publishing Year</b>	2004
<b>Title</b>	Infection and Immunity.
<b>Subtitle</b>	
<b>Edition</b>	2nd ed.
<b>Publisher</b>	Oxford University Press
<b>ISBN</b>	ISBN 0199264953

<b>Course Material</b>	Book
<b>Author</b>	Wood P
<b>Publishing Year</b>	2006
<b>Title</b>	Understanding Immunology
<b>Subtitle</b>	
<b>Edition</b>	2nd ed
<b>Publisher</b>	Pearson Prentice Hall
<b>ISBN</b>	013196845-9

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**Notes**

Students will be introduced to basic concepts of immunology. The components of the immune system and their interrelationships are discussed and will help provide a foundation for Level 3 work.