

Academic Year: 2020 - 2021
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Important Message

The information provided here is for reference and may be subject to change by the course coordinator(s) or the offering department(s) concerned.

Section A: Course Information

BBMS3005 - Infection and Immunity

Faculty LKS Medical Faculty

Department

Description

Dept of Microbiology

Course Coordinator

Name	Faculty/ Department	Email Address
Professor Zhiwei Chen	Dept of Microbiology	zchenai@hku.hk

Credit Value 6.00

Course Grade A+ to F

Semester Offered Second Semester

Prerequisite(s)/ Corequisite(s)/Impermissible Combination(s)

Pass in BBMS1001 or BBMS3001

Approved Syllabus

This course will introduce students to the host defense by providing basic concepts and different components of immune system including both nonspecific and specific immunity. It will cover aspects of the pathogen-host interaction, immunologic disorders as well as different humoral, cellular and biochemical elements involved in immune responses. Students will explore the applications of immunology to modern diagnostics, biotechnology, therapeutics and disease prevention.

Prerequisite: Pass in BBMS1001 Human Biology
Assessment: 50% continuous assessment; 50% examination.

Section B: Teaching/ Learning

Course Type Lecture course

Course Learning Outcomes

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Academic Plan BBiomedSc (4)

On completing the course, students will be able to	Alignment with Programme Learning Outcomes
1 [SN: 001] 1) Demonstrate solid knowledge of the properties of immune system including definition, structure, mechanism of action, pathogen-host interaction in pathogenesis	[SN: 00001] Students should be able to demonstrate solid knowledge of biomedical sciences.
	[SN: 00002] Students should be able to develop scientific inquiry and critical thinking skills, including the ability to understand, analyze, and evaluate problems in order to develop solutions.
	[SN: 00003] Students should be able to apply the core knowledge and skills for the pursuit of biomedical sciences research.
	[SN: 00004] Students should be able to evaluate research literature.
	[SN: 00005] Students should be able to make rational hypotheses about ill-defined biomedical sciences problems based on the best available data and evidence.
	[SN: 00006] Students should be able to identify potential approaches or research that will lead to the advancement in biomedical sciences.
2 [SN: 002] 2) Develop the ability to analyze, evaluate problems and interpret information related to host defense and corresponding molecular mechanism, and prevention.	[SN: 00008] Students should be able to understand broader concepts of molecular and health sciences and be able to relate these to scientific issues of cultural, regional and global significance.
	[SN: 00001] Students should be able to demonstrate solid knowledge of biomedical sciences.
	[SN: 00002] Students should be able to develop scientific inquiry and critical thinking skills, including the ability to understand, analyze, and evaluate problems in order to develop solutions.
	[SN: 00003] Students should be able to apply the core knowledge and skills for the pursuit of biomedical sciences research.

	<p>[SN: 00004] Students should be able to evaluate research literature.</p> <p>[SN: 00005] Students should be able to make rational hypotheses about ill-defined biomedical sciences problems based on the best available data and evidence.</p> <p>[SN: 00006] Students should be able to identify potential approaches or research that will lead to the advancement in biomedical sciences.</p> <p>[SN: 00007] Students should be able to engage in relevant and realistic self-appraisal as biomedical scientists and realize one's own capabilities and limitations.</p> <p>[SN: 00008] Students should be able to understand broader concepts of molecular and health sciences and be able to relate these to scientific issues of cultural, regional and global significance.</p>
<p>[SN: 003] 3) Understand the impact of microbial infections in the world.</p>	<p>[SN: 00005] Students should be able to make rational hypotheses about ill-defined biomedical sciences problems based on the best available data and evidence.</p> <p>[SN: 00007] Students should be able to engage in relevant and realistic self-appraisal as biomedical scientists and realize one's own capabilities and limitations.</p> <p>[SN: 00008] Students should be able to understand broader concepts of molecular and health sciences and be able to relate these to scientific issues of cultural, regional and global significance.</p> <p>[SN: 00009] Students should be able to communicate and collaborate effectively with scientific peers and healthcare professionals orally and in writing.</p> <p>[SN: 00010] Students should be able to understand the importance of ethics and integrity of scientific research, and respect the roles and contributions of other members of the team and display capacity for team work.</p> <p>[SN: 00011] Students should be able to appreciate the role of biomedical sciences in the improvement of human conditions.</p>
<p>[SN: 004] 4) Demonstrate knowledge-based skills in working and collaborating together with fellow students in practical classes and in group presentation of scientific ideas.</p>	<p>[SN: 00006] Students should be able to identify potential approaches or research that will lead to the advancement in biomedical sciences.</p> <p>[SN: 00008] Students should be able to understand broader concepts of molecular and health sciences and be able to relate these to scientific issues of cultural, regional and global significance.</p> <p>[SN: 00009] Students should be able to communicate and collaborate effectively with scientific peers and healthcare professionals orally and in writing.</p> <p>[SN: 00010] Students should be able to understand the importance of ethics and integrity of scientific research, and respect the roles and contributions of other members of the team and display capacity for team work.</p> <p>[SN: 00011] Students should be able to appreciate the role of biomedical sciences in the improvement of human conditions.</p> <p>[SN: 00012] Students should be able to participate in the generation, interpretation, application and dissemination of biomedical sciences knowledge which will improve the quality of healthcare.</p>
<p>[SN: 005] 5) Apply and disseminate knowledge of infection and immunity in scientific research and in everyday life.</p>	<p>[SN: 00010] Students should be able to understand the importance of ethics and integrity of scientific research, and respect the roles and contributions of other members of the team and display capacity for team work.</p> <p>[SN: 00011] Students should be able to appreciate the role of biomedical sciences in the improvement of human conditions.</p> <p>[SN: 00012] Students should be able to participate in the generation, interpretation, application and dissemination of biomedical sciences knowledge which will improve the quality of healthcare.</p>

Course Teaching and Learning Activities

Description	Approx. number of hours (for normative student)	% of total study load
Laboratory practicals- contact hours	16.00	13.33
Lectures- contact hours	24.00	20.00
Tutorials- contact hours	8.00	6.67

Assessment	22.00	18.33
Reading / Self study	50.00	41.67
Total	120.00	100.00

Assessment Methods and Weighting

Assessment methods	Weighting in final course grade (%)
Assignments	25.00
Examination	50.00
Presentation	25.00
Total	100.00
Coursework/Examination Ratio	50.00% / 50.00%

Assessment Methods and Assignment

Assessment Methods and Assignment	Alignment with Course Learning Outcomes
1 Assignments : Attendance/Practical/PBL/Tutorial	<p>[SN: 001] 1) Demonstrate solid knowledge of the properties of immune system including definition, structure, mechanism of action, pathogen-host interaction in pathogenesis</p> <p>[SN: 002] 2) Develop the ability to analyze, evaluate problems and interpret information related to host defense and corresponding molecular mechanism, and prevention.</p> <p>[SN: 003] 3) Understand the impact of microbial infections in the world.</p> <p>[SN: 004] 4) Demonstrate knowledge-based skills in working and collaborating together with fellow students in practical classes and in group presentation of scientific ideas.</p> <p>[SN: 005] 5) Apply and disseminate knowledge of infection and immunity in scientific research and in everyday life.</p>
2 Examination : A 2-hour examination which includes multiple choice questions, short answer questions and essay questions	<p>[SN: 001] 1) Demonstrate solid knowledge of the properties of immune system including definition, structure, mechanism of action, pathogen-host interaction in pathogenesis</p> <p>[SN: 002] 2) Develop the ability to analyze, evaluate problems and interpret information related to host defense and corresponding molecular mechanism, and prevention.</p> <p>[SN: 003] 3) Understand the impact of microbial infections in the world.</p> <p>[SN: 004] 4) Demonstrate knowledge-based skills in working and collaborating together with fellow students in practical classes and in group presentation of scientific ideas.</p> <p>[SN: 005] 5) Apply and disseminate knowledge of infection and immunity in scientific research and in everyday life.</p>
3 Presentation : Presentation and report	<p>[SN: 001] 1) Demonstrate solid knowledge of the properties of immune system including definition, structure, mechanism of action, pathogen-host interaction in pathogenesis</p> <p>[SN: 002] 2) Develop the ability to analyze, evaluate problems and interpret information related to host defense and corresponding molecular mechanism, and prevention.</p> <p>[SN: 003] 3) Understand the impact of microbial infections in the world.</p> <p>[SN: 004] 4) Demonstrate knowledge-based skills in working and collaborating together with fellow students in practical classes and in group presentation of scientific ideas.</p> <p>[SN: 005] 5) Apply and disseminate knowledge of infection and immunity in scientific research and in everyday life.</p>

Course Grade Descriptors [Browse course grade descriptors](#)

Course URL Nil

Related Major/ Minor/ Professional Core

Description	Associated Credit Unit Statement
BBiomedSc (4)	Nil

Section C: Course Schedule

Course Schedule for this year 2020-21

Semester	Session	Start Date	End Date	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Venue	Teaching Staff
2020-21 Sem 2	2A-LEC (1204)	19/01/2021	09/02/2021	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	09:30 AM	11:20 AM	Online	Honglin Chen Kin Hang Kok Li Liu Lit Man Poon

																				Zhiwei Chen
2020-21 Sem 2	2A-LEC (1204)	21/01/2021	04/02/2021	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	02:30 PM	05:20 PM	Online	Honglin Chen	Kin Hang Kok	Li Liu	Lit Man Poon	Zhiwei Chen		
2020-21 Sem 2	2A-LEC (1204)	23/02/2021	02/03/2021	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	09:30 AM	11:20 AM	Online	Honglin Chen	Kin Hang Kok	Li Liu	Lit Man Poon	Zhiwei Chen		
2020-21 Sem 2	2A-LEC (1204)	25/02/2021	04/03/2021	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	02:30 PM	05:20 PM	Online	Honglin Chen	Kin Hang Kok	Li Liu	Lit Man Poon	Zhiwei Chen		
2020-21 Sem 2	2A-LEC (1204)	18/03/2021	29/04/2021	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	02:30 PM	05:20 PM	Online	Honglin Chen	Kin Hang Kok	Li Liu	Lit Man Poon	Zhiwei Chen		
2020-21 Sem 2	2A-LEC (1204)	23/03/2021	30/03/2021	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	09:30 AM	11:20 AM	Online	Honglin Chen	Kin Hang Kok	Li Liu	Lit Man Poon	Zhiwei Chen		
2020-21 Sem 2	2A-LEC (1204)	13/04/2021	27/04/2021	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	09:30 AM	11:20 AM	Online	Honglin Chen	Kin Hang Kok	Li Liu	Lit Man Poon	Zhiwei Chen		

Note: Teaching staff information will be printed once they are finalised.

Section D: Additional Course Information

Note: Information about course content and reading materials listed below is extracted from Moodle at scheduled intervals. Please refer to Moodle for up-to-date information.

Course Content and Topics

- Lectures (12 x 2h lectures)
 1. The host immune system
 2. The immune responses - specificity and memory
 3. Innate immunity - Inflammation
 4. Innate immunity - Pathogen-associated molecule patterns
 5. Humoral immunity - B and plasma cells
 6. Humoral immunity - ADCC and Nab
 7. T cell-mediated immunity - Th1 and Th2
 8. T cell-mediated cytotoxicity - Tc1
 9. Immunity to viruses
 10. Immunity to bacteria and fungi
 11. Immunity to protozoa and worms
 12. Modern vaccinology
- Laboratory sessions (4 x 4h Lab practical)
 1. Innate immunity
 2. B cell immunity
 3. T cell immunity
 4. Vaccinology

Required/ Recommended Readings and Online Materials

TBC

Course Effectiveness Profile

Academic Year	Academic Career	Enrollment #	Response #	Response Rate (%)	Mean Course Effectiveness	Course Coordinator's Comments
1 2019	UG	12	1	8	25.0	
2 2018	UG	16	1	6	75.0	

3	2016	UG	14	2	14	25.0
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Note: Course effectiveness ratings are provided by the Social Sciences Research Centre (SSRC). If the number of response is less than 6, "Mean Course Effectiveness" will be masked. For further details, please refer to [Operational Guide for Student Evaluation of Teaching & Learning](#).

Section E: University Information

Academic Misconduct and Plagiarism

Academic honesty

The University highly values honesty in the academic work submitted by students, and adopts a policy of zero tolerance on cheating in examinations and plagiarism in any work submitted for assessment. Any student who commits such an academic offence is liable to be considered by the University's Disciplinary Committee for possible disciplinary action which can result in serious consequences - including expulsion from the University.

Plagiarism is copying the work of another person without proper acknowledgement. There are two parts in the definition: copying and the absence of proper acknowledgement. As a result, it gives an impression to an ordinary reader that the work is the original work of the author when in fact it was copied from some others' work. Copying does not necessarily only mean copying word for word. Closely paraphrasing or substantial copying with minor modifications (such as changing grammar, adding a few words or reversing active/passive voices) is still copying for this purpose. It does not matter what the nature of the source is: it may be a book, an article, lecture notes or simply an assignment of another student, or in electronic form such as a website, an audio-visual production or other non-textual material, to name but a few. It does not matter whether the source has been published or not. Plagiarism covers any form of work submitted for assessment, including theses, dissertations, take-home examinations, assignments, projects and other forms of coursework.

Students are strongly advised to read the booklets "What is Plagiarism?" (<http://www.hku.hk/plagiarism/>) and "Plagiarism and How to Avoid it" (<http://www4.caes.hku.hk/plagiarism/>) and to consult your teachers if you have any questions on the definition of plagiarism and how to avoid it. Students are also advised to familiarise themselves with issues in relation to copyright as publicized in the section on "Copyright and Plagiarism" in the Student Handbook (<http://www.handbook.hku.hk/ug/>). These guidelines cover lecture notes, course materials, photocopies, internet materials as well as dissertations.

Students should read these guidelines carefully and revisit them from time to time.

University Assessment Policy

Please refer to the [University Assessment Policy](#) available online.

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