# Course Specification

*For Guidance on the completion of this template, please refer to of Handbook 2 Internal Quality Assurance Arrangements*

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| Institution: King Saud University |
| College/Department: Pharmacy / Pharmaceutics |

A. Course Identification and General Information

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| 1. Course title and code: Clinical Microbiology (PHT 416) |
| 2. Credit hours: 3 (2+1) |
| 3. Program(s) in which the course is offered.(If general elective available in many programs indicate this rather than list programs)Doctor of Pharmacy |
| 4. Name of faculty member responsible for the course |
| 5. Level/year at which this course is offered: Level 7 |
| 6. Pre-requisites for this course (if any): PHT 324 |
| 7. Co-requisites for this course (if any): none |
| 8. Location if not on main campus: College of Pharmacy, King Saud University NA |
| 9. Course language: English. |

## B. Objectives:

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| 1. Summary of the main learning outcomes for students enrolled in the course.Knowledge of microbial groups with respect to classification, morphology, ultra-structure, nutrition and growth conditions.Comprehension bacterial genetics and its contribution to resistance to anti- microbial agents.Host parasite relationship and pathogenesis will be discussedKnowledge os knowledge of different microbes causing human infections with respect to their general characteristics, pathogenesis, Laboratory diagnosis, epidemiology, and treatment. |
| 2. Briefly describe any plans for developing and improving the course that are being implemented. (E.g. increased use of IT or web based reference material, changes in content as a result of new research in the field). |

Course Description (Note: General description in the form to be used for the Bulletin or Handbook should be attached)

## This course deals with an introduction to microorganisms (bacteria, viruses and fungi) with discussion of their chemical structures, various classifications and factors affecting their growth and nutrition. It also deals with the diagnosis of the various micrslial infections to the various body systems.

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| Wks # | Subjects | No of lectures |
| 1 | Introduction to microbiology,Classification of micro-organism | 2 |
| 2&3 | Bacteria; Structure, nutrition & growth, Bacterial genetics | 4 |
| 4 | Viruses; structure, classification, replication, and pathogenesis | 2 |
| 5 | General characteristics and classification of fungi General characteristics and classification of protozoa and helminthes | 2 |
| 6 | Host-parasite relationship and pathogenesis | 2 |
| 7 | Laboratory diagnosis of infectious diseases | 2 |

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|  | Antimicrobial sensitivity testing |  |
| 8 | Infections of the skin, soft tissues, and associated systems/ Infections of the eye | 2 |
| 9 | Respiratory tract infections | 2 |
| 10 | Gastrointestinal tract infections | 2 |
| 11 | Urinary tract infections | 2 |
| 12 | Sexually transmitted diseases | 2 |
| 13 | Infections of the central nervous system | 2 |
| 14 | Infections of immunecopromised host | 2 |
|  | Total number of lectures | 28 |

Text book:

Textbook: Mims’ Medical Microbiology 4th (2008)

## Elsevier/UK /USA

Electronic links:-

1. The Microbiology network: [www.microbiol.org](http://www.microbiol.org/)
2. Resources for Microbiology education: [www.sp.unconn.edu](http://www.sp.unconn.edu/)
3. Textbook of bacteriology: [www.textbookofbacteriology.net](http://www.textbookofbacteriology.net/)

Add practical experiments 1 etails

1. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week):

## 28 / semester

1. Development of Learning Outcomes in Domains of Learning For each of the domains of learning shown below indicate:
	* A brief summary of the knowledge or skill the course is intended to develop;
	* A description of the teaching strategies to be used in the course to

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| develop that knowledge or skill;* The methods of student assessment are used in the course to evaluate learning outcomes in the domain concerned.
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| a. Knowledge |
| (i) Description of the knowledge to be acquired* Characterization and classification of different microbial group
* Understanding the diversity, evolution, structure, physiology and biochemistry of prokaryotic and eukaryotic microorganisms.
* Different microorganism groups structure in relevance to pathogenicity
* Good microbiological practice
* Understanding the virulence factors and mechanisms of pathogenesis
* Descriptions of those microbes causing different infections in relation with the disease symptoms, diagnosis, treatment, and epidemiology
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| 1. Teaching strategies to be used to develop that knowledge
	1. Theoretical (lectures) and
	2. Practical exercises
	3. Tutorial
	4. Reports
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| (iii) Methods of assessment of knowledge acquired1. Written quizzes, midterms, final exams, and practical exams.
2. Verbal discussions.
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| b. Cognitive Skills |
| (i) Cognitive skills to be developedStructures and classifications of different microorganisms.1. Relationships between microbial structure and mechanisms of pathogenicity |

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| 1. Identifying antimicrobial targets
2. Use of lab techniques as a tool of studying microorganisms
3. Host systems infections and the microbes involved
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| (ii) Teaching strategies to be used to develop these cognitive skills lectures1. Discussion
2. Lab interactions
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| (iii) Methods of assessment of students cognitive skills Exams1. Reports and presentations
2. Written test
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| c. Interpersonal Skills and Responsibility |
| (i) Description of the interpersonal skills and capacity to carry responsibility to be developed1. Communication with instructors’ tutors and staff.
2. Communication with different personalities and attitudes.
3. Giving indications to patients in a professional way.
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| 1. Teaching strategies to be used to develop these skills and abilities
	* To develop students' interest in current problems and research in microbiology.
	* To develop written and oral communications skills
	* To develop the scientific background required for infectious diseases management
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| (iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility1. Monitoring of students’ attitudes in lectures and labs.
2. Participation of students in the community activities.
3. Assessment of home assignments and reports.
4. Evaluation of the group projects.
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| 5. Monitoring the action/ reaction of students when entitled to higher Responsibilities. |
| d. Communication, Information Technology and Numerical Skills |
| (i) Description of the skills to be developed in this domain.1. Search utilizing Internet to cope with course demand.
2. Follow the update knowledge concerning the course demand.
3. Self-learning.
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| (ii) Teaching strategies to be used to develop these skills1. Training on internet searching for basic knowledge and lab practice
2. Students will be asked to present a research project utilizing the I.T. showing the latest information about certain topics.
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| (iii) Methods of assessment of students numerical and communication skills1. Assessment of home assignments.
2. The positive role of the student in-group projects.
3. The effective participation of the student in the activities of his society.
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| e. Psychomotor Skills (if applicable) |
| (i) Description of the psychomotor skills to be developed and the level of performance required1. Alertness of the student during presence in labs.
2. Good lab practice of the student
3. Performance of proper treatment of problems under stressful circumstances.
4. Level of performance required should meet the international standards.
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| (ii) Teaching strategies to be used to develop these skills1. The student should perform a practical demonstration in front of others “colleagues and staff”.
2. Motivation and encouragement from the staff.
3. Audio visual demonstration of different microbiological techniques
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| (iii) Methods of assessment of students psychomotor skills1. Practical exams.
2. Oral exams.
3. Close supervision of the student during labs.
4. Evaluation of students overall performance.
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| 5. Schedule of Assessment Tasks for Students During the Semester |
| Assessment | Assessment task (e.g. essay, test, group project, examination etc.) | Week due | Proportion of Final Assessment |
| 3 | Midterm I | 6 | 20 |
| 6 | Midterm II | 12 | 20 |
| 7 | Practical exam | 14 | 20 |
| 8 | Final exam | 15 | 40 |

## Student Support

* 1. Arrangements for availability of faculty for individual student consultations and academic advice. (Include amount of time faculty are available each week)

Each staff member should provide the students with 10 specific academic hours and 6 office hours per week. In addition to the availability of his or her web site.

## E. Learning Resources

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| 1. Required Text(s) |
| 1. Essential References Text book:
	* Mims’ Medical Microbiology 4th (2008) Elsevier/UK /USA

Further reference:* + Medical Microbiology 24ed edition

Jawets, Melnick& Adelberg. Lange Medical Books/McGraw-Hill |
| 3- Recommended Books and Reference Material (Journals, Reports, etc.) (Attach List) |
| 4-Electronic Materials, Web Sites etc.1. The Microbiology network: [www.microbiol.org](http://www.microbiol.org/)
2. Resources for Microbiolog y education: [www.sp.unconn.edu](http://www.sp.unconn.edu/)
3. Textbook of bacteriology: [www.textbookofbacteriology.net](http://www.textbookofbacteriology.net/)
4. Dr. Fungus: [www.doctorfungus.org](http://www.doctorfungus.org/)
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| 5- Other learning material such as computer-based programs/CD, professional standards/regulations |

F. Facilities Required

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| Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.) |
| 1. Accommodation (Lecture rooms, laboratories, etc.)
	* Number of seats in each classroom would be up to 30 seats.
	* Number of seats in each laboratory would be up to 25 seats.
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| 3. Other resources (specify --e.g. If specific laboratory equipment is required, list requirements or attach list)Microscope (one per student) - Shaking water baths (one per 5 students) – Autoclave (one for all students) – Staining racks (one per student)- Incubators (Three for all students)- Glass wares (all types and sizes) – Petri dishes and pipettes (plastic and glass), one of each type per student. |

G Course Evaluation and Improvement Processes

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| 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching- Questionnaire is given to students to be filled about course content and teaching procedures.-Evaluation of standards of the students in the quizzes, midterms, final exams, and home assignments, reports, and presentations. |
| 2. Other Strategies for Evaluation of Teaching by the Instructor or by theDepartmentVerbal discussion should be done by the staff in presence of students about course content and teaching procedures, in order to express the extent of comprehension and understanding.* Discussion of the model answer of the written exams- quizzes& midterms- with the students to review their answers.
* listening to students’ complaints.
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| 3. Processes for Improvement of Teaching* Conducting workshops given by experts on the teaching and learning Methodologies.
* Periodical departmental revisions of its methods of teaching.
* Monitoring of teaching activates by senior faculty members.
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| 1. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)
	* Providing samples of all kind of assessment.
	* Assigning group of faculty members teaching the same course to grade same questions for various students.
	* Faculty from other institutions are invited to review the accuracy of the grading policy
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| 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.* The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental and higher councils.
* The head of department and faculty take the responsibility of implementing the proposed changes.
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