|  |  |
| --- | --- |
| **Course Title:** | Pharmaceutical Microbiology-2 |
| **Course Code:** | **MICR 388** |
| **Program:** | **Pharmaceutical Sciences** |
| **Department:** | **Pharmaceutics** |
| **College:** | **Pharmacy** |
| **Institution:** | **Najran University** |

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# A. Course Identification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1. Credit hours:** | | | | **3 (2+1)** | | | | | | | | | | | | |
| **2. Course type** | | | | | | | | | | | | | | | | |
| **a.** | University | |  | | College | | | **x** | Department | | | |  | Others |  |  |
| **b.** | | Required | | | | **x** | Elective | | |  |  | | | | | |
| **3. Level/year at which this course is offered:** | | | | | | | | | | | | **6th level / 3rd year** | | | | |
| **4. Pre-requisites for this course** (if any)**:**  **MICR386 and MICR387** | | | | | | | | | | | | | | | | |
| **5. Co-requisites for this course** (if any)**:** | | | | | | | | | | | | | | | | |
| **None** | | | | | | | | | | | | | | | | |

## 6. Mode of Instruction (mark all that apply)

| **No** | **Mode of Instruction** | **Contact Hours** | **Percentage** |
| --- | --- | --- | --- |
| **1** | **Traditional classroom** | 30 | 80% |
| **2** | **Blended** |  |  |
| **3** | **E-learning** |  | 20% |
| **4** | **Correspondence** |  |  |
| **5** | **Other** |  |  |

**7. Actual Learning Hours** (based on academic semester)

|  |  |  |
| --- | --- | --- |
| **No** | **Activity** | **Learning Hours** |
| **Contact Hours** | | |
| **1** | **Lecture** | 30 |
| **2** | **Laboratory/Studio** | 30 |
| **3** | **Tutorial** |  |
| **4** | **Others** (specify) |  |
|  | **Total** | 60 |
| **Other Learning Hours\*** | | |
| **1** | **Study** | 30 |
| **2** | **Assignments** | 10 |
| **3** | **Library** | 15 |
| **4** | **Projects/Research Essays/Theses** | 5 |
| **5** | **Others** (specify) | - |
|  | **Total** | 60 |

**\*** The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

# B. Course Objectives and Learning Outcomes

|  |
| --- |
| 1. Course Description |
| This courses in continuation to Pharmaceutical Microbiology (1) course and include description of infectious diseases caused by bacteria, viruses, fungi and parasites regarding their mode of transmission, clinical pictures, management and preventive measures. |
| 2. Course Main Objective |
| 1. **Understand the basic concepts of human microbial infections and diseases; their modes of transmission, pathogenesis, clinical manifestations, prevention and control of infectious diseases.** 2. **Acquire knowledge about management of human infectious diseases caused by bacteria, viruses, fungi, and parasites for safe pharmaceutical practice.** 3. **Acquire basic skills in safe handling of microorganisms.** 4. **Understand the basic principles of laboratory diagnosis of bacterial, viral, fungal and parasitic infections in the light of clinical diagnosis.** 5. **Understand causes of hospital acquired infections and the role of pharmacist in infection control practices in medical health institutes** |

## 3. Course Learning Outcomes

| **CLOs** | | **Aligned****PLOs** |
| --- | --- | --- |
| 1 | **Knowledge:** |  |
| 1.1 | Recognize how the bacterial infection caused | K1 |
| 1.2 | Identify bacteria under microscope and Differentiate between the different groups of microorganisms. | K1 |
| 1.3 |  |  |
| 1... |  |  |
| **2** | **Skills :** |  |
| 2.1 | Communicate results of work to others | S4 |
| 2.2 |  |  |
| 2.3 |  |  |
| 2... |  |  |
| **3** | **Competence:** |  |
| 3.1 | Work independently and as part of a team | C1 |
| 3.2 | Use of advanced techniques in developing solutions to complex issues in field of work | C3 |
| 3.3 |  |  |
| 3... |  |  |

# C. Course Content

|  |  |  |
| --- | --- | --- |
| **No** | **List of Topics** | **Contact Hours** |
| 1 | **Gram positive cocci (Staphylococci, Streptococci, and Pneumococci)** | 2 |
| 2 | **Neisseria and Corynebacteria** | 2 |
| 3 | **Spore forming bacilli (Bacillus and Clostridia)** | 2 |
| 4 | **Mycobacteria** | 2 |
| 5 | **Enterobacteriacae (E. Coli, Klebsiella, Enterobacter Citrobacter)** | 2 |
| 6 | **Enterobacteriacae (Salmonella , Shigella, proteus and Yersinia)** | 2 |
| 7 | **Gram negative bacilli (Pseudomonas, vibrio, Campylobacter and Helicobacter)** | 2 |
| 8 | **Brucella, Haemophilus and Bordetella** | 2 |
| 9 | **Spirochaetes, Rickettsiae, Coxiella and Chlamydia** | 2 |
| 10 | **Medically important fungi ( Candida albicans and Cryptococcus neoformans)** | 2 |
| 11 | **Myxoviruses, Paramyxoviruses and Rubella virus** | 2 |
| 12 | **Herpes viruses** | 2 |
| 13 | **Hepatitis viruses and Retroviruses** | 2 |
| 14 | **Protozoal infections of human** | 2 |
| 15 | **Helminth infections of human** | 2 |
| **Total** | | 30 |

# D. Teaching and Assessment

## 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

| **Code** | **Course Learning Outcomes** | **Teaching Strategies** | **Assessment Methods** |
| --- | --- | --- | --- |
| **1.0** | **Knowledge** | | |
| 1.1 | Recognize how the bacterial infection caused | Lecture  Assignment | Mid Term Exam  Final Term Exam  Assignment |
| 1.2 | Identify bacteria under microscope and Differentiate between the different groups of microorganisms | Lecture  Assignment | Mid Term Exam  Final Term Exam  Assignment |
| … |  |  |  |
| **2.0** | **Skills** | | |
| 2.1 | Evaluate student improve acceptance skill from other during discussion | Lecture  Assignment | Mid Term Exam  Final Term Exam  Assignment |
| 2.2 | Communicate results of work to others | Lecture  Assignment | Mid Term Exam  Final Term Exam  Assignment |
| … |  |  |  |
| **3.0** | **Competence** | | |
| 3.1 | Work independently and as part of a team | Data interpretation exercises and successful completion of experiments | Practical Exam  Observation cards |
| 3.2 | Use of advanced techniques in developing solutions to complex issues in field of work | Data interpretation exercises and successful completion of experiments | Practical Exam  Observation cards |
|  |  |  |  |

## 2. Assessment Tasks for Students

| **#** | **Assessment task\*** | **Week Due** | **Percentage of Total Assessment Score** |
| --- | --- | --- | --- |
| **1** | 1st Mid- Exam | 3rd week | 15% |
| **2** | 2nd Mid- Exam | 5th week | 15% |
| **3** | Assignments | 12th week | 5% |
| **4** | Observation card | 12th week | 5% |
| **5** | Final term Examination (practical) | 14th week | 20% |
| **6** | Final term Examination | 15th week | 40% |
|  | Total |  | 100% |

**\*Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

# E. Student Academic Counseling and Support

|  |
| --- |
| **Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :** |
| **Each the member staffs responsible for theoretical and practical parts will be available for 2 hours in a day per a week for individual student counselling and advice. This should include the time allocation and schedule for teaching staff to meet with students** |

# F. Learning Resources and Facilities

## 1. Learning Resources

|  |  |
| --- | --- |
| **Required Textbooks** | 1. **Medical microbiology, Jawetz, Melnick and Adelberg’s. Latest edition.** 2. **District laboratory practice in tropical countries. Monica C. Cambridge Uni. Press. Latest edition.** |
| **Essential References Materials** | 1. **Medical microbiology, Jawetz, Melnick and Adelberg’s. Latest edition.** 2. **District laboratory practice in tropical countries. Monica C. Cambridge Uni. Press. Latest edition.** |
| **Electronic Materials** | * 1. **Saudi Digital Library.**   2. [www.who.int](http://www.who.int)   3. [www.cdc.gov](http://www.cdc.gov)   4. www.asm.org |
| **Other Learning Materials** |  |

## 2. Facilities Required

| **Item** | **Resources** |
| --- | --- |
| **Accommodation**  (Classrooms, laboratories, demonstration rooms/labs, etc.) | Classroom and Laboratory (30 Seats lecture room and laboratory ) |
| **Technology Resources**  (AV, data show, Smart Board, software, etc.) | 1. Data show power point projector. 2. Availability of internet access in the class room & lab is requested. |
| **Other Resources**  (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | Autoclave, Hot air oven, Incubator, Microscope, Refrigerator, Centrifuge, pH meter, Distiller |

# G. Course Quality Evaluation

| **Evaluation**  **Areas/Issues** | **Evaluators** | **Evaluation Methods** |
| --- | --- | --- |
| Effectiveness of teaching and assessment | Program Leader | Direct |
| Extent of achievement of course learning outcomes | students | Indirect |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

**Assessment Methods** (Direct, Indirect)

# H. Specification Approval Data

|  |  |
| --- | --- |
| **Council / Committee** | Approved by the Department Committee |
| **Reference No.** | Department meeting No.1 |
| **Date** | 10/09/2019 |