هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

# ATTACHMENT-5

# T6. COURSE SPECIFICATIONS

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| **Institution: College Of Applied Medical Sciences (Dawadmi), Shaqra University** |
| **College/Department :** Nursing Department |
| **Date: January 2019** |

**A. Course Identification and General Information**

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| 1. Course title and code: **Medical Microbiology, MED 241** |
| **2.** Credit hours:**: 3 (2 unit lecture & 1 unit laboratory)** |
| 3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs): **Bachelor of Applied Medical Science In Nursing (BSN)** |
| 4. Name of faculty member responsible for the course: **Dr Mohammad Irfan** |
| 5. Level/year at which this course is offered: **Level 4/2nd year** |
| 6. Pre-requisites for this course (if any): **Biology** |
| 7. Co-requisites for this course (if any): **None** |
| 8. Location if not on main campus: **College of Applied Medical Sciences - Al-Dawadmi Campus** |
| 9. Mode of Instruction (mark all that apply): |

| | | | | |
|---|---|---|---|---|
| A. | Traditional Classroom | √ | What percentage? | **80%** |
| B | Blended (Traditional And Online) | | What percentage? | |
| C | E-Learning | √ | What percentage? | **10%** |
| D | Correspondence | | What percentage? | |
| E | Other (Laboratory) | √ | What percentage? | **10%** |

**Comments:**
Other mode of instruction is laboratory hours where students learn various microbiology techniques for diagnosis of disease.

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## B Objectives

**1. What are the main objectives of the course?**

**After completing the course the students should be capable to:**

- Explain the concepts and principles of microbiology and their importance in nursing.
- Be conversant with proper methods of collection, storage and transport of clinical material for microbiological investigations.
- State the sources and modes of transmission of pathogenic and opportunistic organisms including vectors and their role in transmission of diseases.
- Understand the principles of immunology and its application in the diagnosis and prevention of infectious diseases.
- Understand the commensal, opportunistic and pathogenic organisms of human body and describe host parasite relationship.

**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)**

1. Feedbacks from the previous course report.
2. Regular updating the course contents
3. Use of electronic based medium like Digital library
4. More utilization of Power point (PPT) or Multimedia Presentation related to clinical analytical chemistry.
5. With the help of research papers and scientific journals related to clinical analytical chemistry.

## C. Course Description (Note: General description in the form used in Bulletin or handbook)

**Course Description:**

**This course is designed to enable students to acquire understanding of fundamentals of microbiology and identification of various micro-organisms. It also provides opportunities for practicing infection control measures in hospital and community setting.**

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## Course Outline: Lecture

| Week No. | Topics | No. of Weeks | Contact Hours |
|---|---|---|---|
| 1 | **Microbiology Introduction**<br>• Importance And Relevance To Nursing<br>• Historical Perspective<br>• Terminology<br>• Branches of Microbiology<br>• Structure And Classification of Microbes<br>• Size And Form of Bacteria<br>• Growth and Nutrition of Microbes | 1 | 2 |
| 2 | **Identification of Micro-Organisms**<br>• *Staining Reaction:*<br>o Gram's Staining<br>o Acid Fast Staining<br>• *Motility Test (Hanging Drop Preparation)*<br>• *Culture:*<br>o Culture Media<br>o Culture Methods<br>• *Cultural Characteristics*<br>• *Antibiotics sensitivity test*<br>• Recent Advances In Diagnostic Techniques | 1 | 2 |
| 3 | **Sterilization And Disinfection** | 1 | 2 |
| 4 | **Collection, Handling And Transport of Specimens For Microbiological Examination** | 1 | 2 |
| 5 | **Midterm Examination-1** | 1 | 2 |
| 6 | **Immunity:**<br>• Types And Classification<br>• Antigen And Antibody Reaction<br>• Hypersensitivity<br>**Vaccines:**<br>• Types And Classification<br>• Storage And Handling (Cold Chain)<br>**Immunization For Various Diseases** | 1 | 2 |
| 7 | **Infection**<br>• Source of Infection<br>• Methods of Transmission of Infection<br>• Factors Predisposing To Microbial Pathogenicity<br>**Types of Infectious Diseases** | 1 | 2 |
| 8 | **Nosocomial Infection:**<br>• Common Types of Nosocomial Infections<br>• Sources And Reservoirs of Nosocomial Infection<br>• Micro-Organism Causing Nosocomial Infections<br>• Diagnosis And Control of Hospital Infection<br>**Biomedical Waste Management**<br>**Role of Nurse In Infection Control**. | 1 | 2 |
| 9 | **Parasites**<br>**Rodent And Vectors Born Diseases** | 1 | 2 |
| 10 | **Midterm Examination-2** | 1 | 2 |

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|---|---|---|---|
| **11** | **Normal Microbial Flora of The Human Body**<br>**Pathogenic Micro-Organism**<br>• Cocci- Gram Positive And Gram Negative<br>• Bacilli- Gram Positive And Gram Negative<br>• Acid Fast Bacilli (Mycobacterium Tuberculosis) | 1 | 2 |
| **12** | • Spirochaetes<br>• Rickettsiae<br>• Chlamydiae<br>**Emerging bacterial infections and drug resistance**<br>**Bacteriology of Water, Milk And Air** | 1 | 2 |
| **13** | **Viruses:**<br>• Common Pathogenic Viruses<br>• Emerging Viral Infectious Diseases<br>○ Severe Acute Respiratory Syndrome<br>○ Avian Influenza<br>○ H1N1 Influenza<br>**Fungi: Superficial, Deep Mycoses and opportunistic** | 1 | 2 |
| ***14*** | ***Revision*** | 1 | 2 |
| **15** | **Final Examination** | 1 | 2 |

## Laboratory Schedule:

| Week No. | Topics | No. Of Weeks | Contact Hours |
|---|---|---|---|
| **1** | Laboratory Safety Regulations | 1 | 2 |
| **2** | The light microscope | 1 | 2 |
| **3** | Laboratory instruments and equipments | 1 | 2 |
| **4** | Culture Media Preparation & Culture Methods | 1 | 2 |
| **5** | Smear Preparation | 1 | 2 |
| **6** | Gram's Stain | 1 | 2 |
| **7** | Acid Fast Stain | 1 | 2 |
| **8** | ***Revision*** | 1 | 2 |
| **9** | Motility test | 1 | 2 |
| **10** | Interpretation of Culture Results | 1 | 2 |
| **11** | Serology Tests (HIV, Hepatitis, RPR etc) | 1 | 2 |
| **12** | Identification of fungi (smear/culture) | 1 | 2 |
| **13** | Stool Examination | 1 | 2 |
| **14** | ***Revision*** | 1 | 2 |
| **15** | **Final Examination** | 1 | 2 |

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| 2. **Course components (total contact hours and credits per semester):** | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Laboratory/ Studio | Practical | Other: | Total |
| Contact Hours | Planed | 30 | | | 30 | | **60** |
| | Actual | 30 | | | 30 | | **60** |
| Credit | Planed | 30 | | | 15 | | **45** |
| | Actual | 30 | | | 15 | | **45** |

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| 3. Additional private study/learning hours expected for students per week: | **1 Hour** |

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

**On the table below are the five NQF Learning Domains, numbered in the left column.**
**First**, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

| Code # | NQF Learning Domains And Course Learning Outcomes | Course Teaching Strategies | Course Assessment Methods |
|---|---|---|---|
| **1.0** | **Knowledge**<br>***At the end of the course, the student will be able to:*** | | |
| 1.1<br><br>1.2 | Describe the concept and principles of microbiology and their importance in nursing.<br><br>Recognize the diseases most commonly caused by pathogenic microorganisms. | ▪ Interactive Lecture<br>▪ Multimedia Presentation<br>▪ CD/Video Viewing<br>▪ Group Discussion<br>▪ Reading<br>▪ Online Assignment<br>▪ Role Play | ▪ Quizzes<br>▪ Multiple Choice Questions<br>▪ Written Examination<br>▪ Practical Examination<br>▪ Rubrics Evaluation<br>▪ Portfolio<br>▪ Homework |

| | | | |
|---|---|---|---|
| **2.0** | **Cognitive Skills**<br>***At the end of the course, the student will be able to:*** | | |
| 2.1<br><br><br><br>2.2 | Recognize the commensal, opportunistic and pathogenic organisms of human body.<br><br>Interpret the correct use of method of infection control and justify the role of nurse in hospital infection control program | ▪ Interactive Lecture<br>▪ Multimedia Presentation<br>▪ CD/Video Viewing<br>▪ Group Discussion<br>▪ Reading<br>▪ Online Assignment<br>▪ Role Play | ▪ Quizzes<br>▪ Multiple Choice Questions<br>▪ Written Examination<br>▪ Practical Examination<br>▪ Rubrics Evaluation<br>▪ Portfolio<br>▪ Homework |
| **3.0** | **Interpersonal Skills & Responsibility**<br>***At the end of the course, the student will be able to:*** | | |
| 3.1<br><br><br><br>3.2 | Cooperating with their peers and participates in and takes responsibility for establishing technical and administrative procedures.<br><br>Develop self-learning for the acquisition of greater knowledge, new information data or technique in the field of course for the best utilization of their lectures and tutorials. | ▪ Assignment<br>▪ role play<br>▪ Group Discussion<br>▪ Small Project<br>▪ Lectures<br>▪ Exercises<br>▪ Problem solving<br>▪ Essay questions | ▪ Portfolio<br>▪ Oral examination<br>▪ Evaluation (by Rubrics)<br>▪ Observation of student behavior |
| **4.0** | **Communication, Information Technology, Numerical**<br>***At the end of the course, the student will be able to:*** | | |
| 4.1<br><br><br>4.2 | Communicate, effectively and professionally through oral and written skills.<br><br>Use computers effectively to access, analyze, and interpret information. | ▪ Training and professional practice<br>▪ Using data base<br>▪ Internet search.<br>▪ Student seminars.<br>▪ Discussion<br>▪ Role play | ▪ Portfolio<br>▪ Written and Oral presentation<br>▪ work groups<br>▪ Observation<br>▪ Evaluation (by Rubrics) |
| **5.0** | **Psychomotor**<br>***At the end of the course, the student will be able to:*** | | |
| 5.1 | Show how to interpret and discuss laboratory results | ▪ Practical Activities in | ▪ Practical Test<br>▪ quizzes |

| | | | |
|---|---|---|---|
| | | the lab<br>▪ Filed Experience<br>▪ Problem based learning<br>▪ Video viewing<br>▪ Multimedia Presentation<br>▪ Group Discussion<br>▪ Reading<br>▪ Engage students in analysis and evaluation of their practical work | ▪ Demonstration and observation<br>▪ (Rubrics Evaluation)<br>▪ written examination<br>▪ Lab report<br>▪ Portfolio |

| **5. Schedule of Assessment Tasks for Students During the Semester** | | | |
|---|---|---|---|
| | **Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)** | **Week Due** | **Proportion of Total Assessment** |
| **1** | Quizzes , Laboratory Activities | 01-14 | 05% |
| **2** | Assignments/Oral presentation/ Attendance | 01-14 | 05% |
| **3** | First Midterm Examination | 05 | 20% |
| **4** | Second Midterm Examination | 10 | 20% |
| **5** | Practical Exam | 14 | 10% |
| **6** | Final Examination | 15 | 40% |
| | **Total** | | 100% |

## D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

## E Learning Resources

1. List Required Textbooks
   - Murray,P.R. Manual Of Clinical Microbiology A.S.M. Press.

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| • Sherris: Medical Microbiology -An introduction to infectious disease.<br>• Greenwood Medical Microbiology 15th edition, Churchill Livingstone, ISBN: 0443054541<br>• Collee JG et al Mackie & McCartney – Practical Medical Microbiology 14th edition, 1996 Pearson Professional Ltd, ISBN: 0443047219<br>• Prescott, Microbiology, Mc Graw Hill |
| 2. List Essential References Materials (Journals, Reports, etc.)<br>• Canadian journal of microbiology<br>• Brazilian journal of Microbiology<br>• Journal of clinical microbiology<br>• Asian journal of microbiology |
| 3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.<br>• https://www.atsu.edu/faculty/chamberlain/website/links.htm<br>• http://www.microbes.info<br>• http://www.asm.org<br>• http://www.microbiologyonline.org |
| 4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.<br>**Nil** |

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 (Classrooms, laboratories, demonstration rooms/labs, etc.)<br>a. Classrooms Size is 50-90 $M^2$<br>b. Classrooms must be equipped with educational media<br>c. Classrooms must be air conditioned with at least 35 seats<br>d. Labs must be equipped with material for teaching practical part of the course<br>e. Data show must be available in the Classrooms<br>f. Smart Board must be available in the Classrooms<br>g. Laptop and Computers must be available<br>h. Printer and Scanner must be available to staff member<br>i. Up to date scientific books must be available in the library. |
| 2. Technology resources (AV, data show, Smart Board, software, etc.)<br>a. AV<br>b. Data show<br>c. Smart Board<br>d. software and internet in the lecture hall and all labs<br>e. Computer and microphone in Lecture rooms |
| 3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) |

G Course Evaluation and Improvement Processes

**1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

a. Regular evaluation of the theoretical and practical parts of the course to identify the weaknesses areas.
b. Performance questionnaire filled up by each student to show level of fulfillment
c. Confidential completion of standard course evaluation (course report)
d. Interactive Lecture/Discussion.
e. Laboratory Activities/Experimentation.
f. By observing the students qualities.
g. Discussing the problems related to subject, subject syllabus, subject terminology and make analysis to it and suggested some solutions

**Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

**2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

a. A statistical **regular review and analysis** of the students' achievement in the department.
b. Prepare a questionnaire which should be filled by the students at the end of the term.
c. The questionnaire should be after that analyzed and carefully studied.

**Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

**3. Processes for Improvement of Teaching**

a. Organizing quality improvement programs in teaching techniques at collage/ departmental level.
b. Conducting of seminars related to teaching skills and for its improvement.
c. Providing the good resources of teaching materials like Digital library, online journal access.
d. Maintain a healthy communication among faculty members and students.
e. Take proper steps for constant improvement of course syllabus through scientific conferences.
f. Provide training and workshop opportunities for the teaching staff to improve their teaching strategies.
g. Form committees to follow up progress and work on improvement.
h. Provide opportunities to improve academic courses and research through conferences.
i. Provide the teaching staff members with all the references and electronic resources.

**Processes for Improvement of Teaching**

**4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)**

a. Check marking of the answer sheets of examination papers with other colleagues
b. Check progress level of the students (this can be done by an independent teacher by reviewing students' records and compare the students' work with another from a different institute).

**5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**

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a. Student's feedback on the quality of the course.
b. Consulting other faculty members or collaborators in overseas universities for their views on the method of quality of improvement.
c. Check other universities websites to compare our lectures with them.
d. Compare the syllabus with the syllabus of standard universities.
e. Form a specialized committee from the department to review the progress of teaching and update the resources.
f. Consult distinguished students and discuss with them positive and negative points in Lectures.

**Planning arrangements for periodically reviewing course effectiveness and planning for improvement.**

**Name of Course Instructor:** ***Dr Mohammad Irfan***

**Signature: _____Date Specification completed: _____**

**Program Coordinator: _____**

**Signature: _____Date Received: _____**