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| --- | --- |
| **Course Title:**  | Man and His External Environment |
| **Course Code:** | 251 MEE-4 |
| **Program:** | Bachelor of Medicine and Bachelor of Surgery (MBBS) |
| **Department:**  | N/A |
| **College:** | Medicine |
| **Institution:** | Najran University |

# A. Course Identification

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| --- | --- |
| **1. Credit hours:** | **4 (3+1)** |
| **2. Course type** |
| **a.** | University |  | College |  | Department |  | Others \*(Program) | **√** |  |
| **b.** | Required | **√** | Elective |  |  |
| **3. Level/year at which this course is offered:** | Year 2 - Semester-1 (level 5) |
| **4. Pre-requisites for this course** (if any)**:** None |
| **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** | 51 | 58.6% |
| **2** | **Blended**  |  |  |
| **3** | **E-learning** |  |  |
| **4** | **Distance learning**  |  |  |
| **5** | **Other**  | 36 | 41.4% |

**7. Contact Hours** (based on academic semester)

|  |  |  |
| --- | --- | --- |
| **No** | **Activity** | **Contact Hours** |
| **1** | **Lecture** | 39 |
| **2** | **Laboratory/Studio (practical)** | 18 |
| **3** | **Tutorial**  |  |
| **4** | **Others** (specify) |  |
| **5** | **Case-based learning (CBL)** | 4 |
| **6** | **Seminar (SEM)** | 8 |
| **7** | **Filed visit work (FVW) and Hospital visit** | 18 |
|  | **Total** | 87 |

# B. Course Objectives

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| 1. Course Description  |
| A disease is a disorder that affects health by affecting an organism's body, organs, tissues, or cells. The natural progression of the disease over time is a consequence of inherited susceptibility (genetic inheritance) and exposure to environmental factors, including lifestyles such as nutrition, personal relationships, stress, exercise, and the mind-body connection. This course is delivered to the second year/3rd level medical students and is designed to introduce epidemiology, environmental diseases & hazards, nutritional disorders, medical physics, medical imaging, safety and related aspects of community medicine; in an integrated manner.  |
| 2. Course Main Objective |
| By end of this course, students are expected to:1. Define epidemiology, its types, concepts, importance, and study types.
2. Illustrate the track for the development of disease over time and the points at which the individual, the community, and the healthcare system might intervene.
3. Describe the external environmental components to their effects on the human health
4. Recognize effects of the potential hazards (physical, chemical, social and biological) on human health.
5. Relate the radiation hazards to the safe application of medical physics and imaging.
6. Explain the basic principles of different radiological tools.
7. Apply safety measures in laboratories and facilities of medical imaging.
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# C. Course Content

|  |  |  |
| --- | --- | --- |
| **No** | **List of Topics** | **Contact Hours** |
|  | Introduction to the course | 1 |
|  | **Epidemiology** |  |
|  | The concept of health and disease: definitions, epidemiological triad and the natural history of disease and dynamics of transmission (Community Medicine) L (Community Medicine) L | 1 |
|  | Concepts in epidemiology: Incidence, prevalence, risk factors, causes, endemic, pandemic, epidemic and outbreak. (Community Medicine) L  | 1 |
|  | Concepts in epidemiology: Incidence, prevalence, risk factors, causes, endemic, pandemic, epidemic and outbreak. (Community Medicine) L  | 1 |
|  | Types of epidemiology (molecular, genetic, occupational, cancer, psychiatric, infectious diseases) (Community Medicine) L | 1 |
|  | Types of epidemiology (molecular, genetic, occupational, cancer, psychiatric, infectious diseases) (Community Medicine) L | 1 |
|  | Epidemiology and prevention (Community Medicine) SEM | 2 |
|  | Epidemiological studies 1 (Community Medicine) L | 1 |
|  | Epidemiological studies 2 (Community Medicine) L | 1 |
|  | Disease screening (Community Medicine) L | 1 |
|  | **Physical and biological hazards in environment** |  |
|  | Environmental pollution (Community Medicine) L | 1 |
|  | The thermal environment i.e., temperature, humidity, air velocity (Community Medicine) L | 1 |
|  | The role of thermal environment in the causation of diseases (Community Medicine) L | 1 |
|  | Thermal environmental diseases (heat stress, heat stroke, respiratory tract infection) (Community Medicine) SEM | 2 |
|  | Electrical injury and radiation (Community Medicine) L | 1 |
|  | Electromagnetic spectrum, radiation types and production (Medical physics) L | 1 |
|  | Natural and man-made radioactive sources (Medical physics) L | 1 |
|  | Nuclear Medicine sources and basics (Medical physics) L | 1 |
|  | Radioactivity, half-life and radiation quantities (Medical physics) L | 1 |
|  | Interaction of radiation with matter and biological effects of radiation (Medical physics) L | 1 |
|  | Radiation protection rules(Medical physics) L | 1 |
|  | Relative Radiation Doses of Different Modalities and its basics (Medical physics) L | 1 |
|  | Relative Radiation Doses of Different Modalities and its basics (Medical physics) FWV | 3 |
|  | Medical imaging in medicine (Radiology) L | 1 |
|  | Practices for Radiation safety 1 (Medical physics) FWV (Hospital visit). | 3 |
|  | Practices for Radiation safety 2 (Medical physics) FWV (Hospital visit). | 3 |
|  | Basic introduction to Radiology 1: Conventional Radiograph (Radiology) Practical | 2 |
|  | Basic introduction to Radiology 2: Computed Tomography-CT. (Radiology) Practical | 2 |
|  | Basic introduction to Radiology 3: Ultrasonography and Magnetic Resonance Imagining-MRI. (Radiology) Practical | 2 |
|  | Basic introduction to Radiology 3: Fluoroscopy, Nuclear Medicine, and interventional Radiology. (Radiology) Practical  | 2 |
|  | Radiological modalities (Radiology) FWV (Hospital visit). | 3 |
|  | Picture archiving and communication system (PACS) (Radiology) FWV (Hospital visit). | 3 |
|  | The adverse effects of noise on health (Community Medicine) L  | 1 |
|  | Dust and health (The importance of ventilation) (Community Medicine) L | 1 |
|  | Safe water and basic environmental sanitation (Community Medicine) L  | 1 |
|  | Safe water and basic environmental sanitation (Community Medicine) FWV | 3 |
|  | Surface water pollutants (Community Medicine) L | 1  |
|  | Waterborne diseases (Community Medicine) SEM | 2 |
|  | Foodborne diseases (Community Medicine) CBS | 2 |
|  | Adverse effects of poor lighting conditions (Community Medicine) L | 1 |
|  | Occupational diseases (Community Medicine) L | 1 |
|  | Nutritional disorders (pathology) L | 1 |
|  | Nutritional disorders (pathology) Practical | 2 |
|  | Disorders of Vitamins (Pathology) Practical | 2 |
|  | General classifications of Microbes (Microbiology) L  | 1 |
|  | General classifications of Microbes (Microbiology) Practical  | 2 |
|  | Modes of transmission of microbes (Microbiology) L | 1 |
|  | Pathogenic factors of microbes (Microbiology) L | 1 |
|  | Virulence factors of microbes (Microbiology) L | 1 |
|  | Zoonosis and insect borne disease (Microbiology) L | 1 |
|  | Lab safety 1 (Microbiology) Practical  | 2 |
|  | Lab safety 2 (Microbiology) Practical | 2 |
|  | **Chemical hazards in environment** |  |
|  | Therapeutic (Iatrogenic) drug (Community Medicine) L | 1 |
|  | Non-therapeutic toxic agents: alcoholism and drug abuse (Community Medicine) L | 1 |
|  | The toxic chemical substances (Community Medicine) L | 1 |
|  | CO poisoning (Community Medicine) L | 1 |
|  | The toxic effects of lead (Community Medicine) CBS | 2 |
|  | The expected adverse effects on man’s health following newly developed physical environmental changes (Ozone hole, Global warming, Acid rain, drought and desertification) and measures recommended for safety and prevention) (Community Medicine) SEM | 2 |
|  | **Social environment** |  |
|  | Common behaviors that improve social values and their effects on external Environments. (Community Medicine) L  | 1 |
|  | Effects of family dynamics and social environment on man's health (Community Medicine) L | 1 |
| **Total** |  |

# D. Assessment Tasks for Students

| **#** | **Assessment task\***  | **Week Due** | **Percentage of Total Assessment Score** |
| --- | --- | --- | --- |
| **1** | Mid-block exam | Week 3 | 20% |
| **2** | Field visit assessment (Logbook) | Weeks 2-3 | 5% |
| **3** | Seminar's evaluations | Weeks 1,2,3,4 | 5% |
| **4** | Assignment | Weeks 3,4 | 10% |
| **6** | Final written (MCQs) | Last week | 40% |
| **7** | Final OSPE | Last week | 20% |
|  | Total |  | 100% |

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

# F. Learning Resources and Facilities

## 1.Learning Resources

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| --- | --- |
| **Required Textbooks** | Community Medicine:1. Park P. Park’s textbook of preventive and social medicine, 14th, ed. India, M/S Bandrsida; Bharot, 1995.
2. Last JM. Dictionary of Epidemiology, 3rd edition. New York, Oxford University Press, 1995

Radiology:1. Learning Radiology, RECOGNIZING THE BASICS by William Herring, MD, FACR

Microbiology:1. Aneja, K R. ; Textbook of Basic and Applied Microbiology. c2015.
2. Bailey & Scott's diagnostic microbiology; Tille, Patricia M.13th ED.
3. Greenwood, David, 1935; Medical microbiology : a guide to microbial infections : pathogenesis, immunity, laboratory diagnosis, and control. 18th ED
4. Markell and Voge’s Medical parasitology. 9th Ed.
5. Paniker’s Textbook of Medical Parasitology, 7th edition 2013

Pathology: 1. Robbins Basic Pathology. Kumar, Abbas and Aster. 9th Ed.
2. Mur’s Text Book of Pathology, David A Levison et al.14th Ed.
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| **Essential References Materials** |  |
| **Electronic Materials** | 1. Saudi Digital Library <https://sdl.edu.sa>
 |
| **Other Learning Materials** |  |

## 2. Facilities Required

| **Item** | **Resources** |
| --- | --- |
| **Accommodation**(Classrooms, laboratories, demonstration rooms/labs, etc.) | 1. Lecture room suitable for students.
2. Laboratories suitable for students.
3. Radiology section in the Teaching hospital for the visit
4. Water sanitation station -Najran city for field visit
 |
| **Technology Resources** (AV, data show, Smart Board, software, etc.) | 1. Computers, multimedia in lecture room, seminars room and laboratories.
2. There is a need for computers with networking and internet access for student learning. As well as a number of computers and multimedia projectors in the other rooms.
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| **Other Resources** (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | Library supplied with reference, textbooks, and electronic resources |

# F. Specification Approval Data

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| --- | --- |
| **Council / Committee** |  |
| **Reference No.** |  |
| **Date** |  |