**Syllabus of MED324**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course Name | Code | Semester | Theory  (Hours/Week) | Application  (Hours/Week) | Laboratory (Hours/Week) | National Credit | ECTS |
| **Antimicrobial stewardship** | **MED 324** | **VI** | **2** | **0** | **0** | **1** | **2** |
| Pre-requisite(s) | **MED192, MED292** | | | | | | | |
| Course Language | English | | | | | | | |
| Course Type | Elective | | | | | | | |
| Mode of Delivery (face to face, distance learning) | Face-to-Face  Distance Learning | | | | | | | |
| Learning and Teaching Strategies | Lecture  Case discussion  Assignment  Self-Learning | | | | | | | |
| Instructor(s) | Prof. Dr. Necla TULEK, Prof. Dr. Ali ACAR | | | | | | | |
| Course Objective | By the end of this course, participants should be able to understand core competencies of antimicrobial stewardship and how they can be applied to common clinical scenarios. | | | | | | | |
| Learning Outcomes | 1. State the basic mechanisms of antimicrobial resistance and describe their relative frequencies ın the human populatıon 2. Evaluate core elements of antimicrobial stewardship and discuss opportunities to implement core elements in medical practice setting 3. List those pathogenic microorganisms that currently present major treatment challenges due to antimicrobial resistance 4. List and compare common methods for isolation, identification and antimicrobial susceptibility testing of microorganisms 5. Describe and list procedures utilizing antibiogram information to identify and track resistance problems, 6. Make appropriate antimicrobial formulary decision. 7. List and compare methods for prospectively measuring stewardship outcome metrics in an organized healthcare setting 8. Propose three or more general methods/approaches to optimize antimicrobial agents and relate them to possible stewardship initiatives 9. Discuss basic infection control processes and explain their inter-relationship with antimicrobial stewardship programs, 10. Prepare and defend a proposal that cost-justifies the funding of a stewardship program/team 11. Apply key principles of prudent antimicronial prescribing to frequently seen scenarios | | | | | | | |
| Course Content | Principle of antimicrobial use, use of antimicrobials in common infections, and strategies to improve antimicrobial stewardship | | | | | | | |
| References | 1. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, John E. Bennett & Raphael Dolin & Martin J. Blaser. 9th Edition. 2019 2. Antımıcrobıal Stewardshıp From Prıncıples To Practıce. British Society for Antimicrobial Chemotherapy, 2018 3. https://openwho.org/courses/AMR-competency | | | | | | | |

**Weekly Course outline**

|  |  |  |
| --- | --- | --- |
| Weeks | Topics | Pre-study |
| Week 1 | Overview of antimicrobial resistance. |  |
| Week 2 | Antibiotic use and misuse. Determinants of antimicrobial prescribing and use. The Principles of Antimicrobial Prescribing: |  |
| Week 3 | What is antimicrobial stewardship? Why it is important? |  |
| Week 4 | Interpreting Culture Results  Antimicrobial susceptibility tests |  |
| Week 5 | The role of laboratory and rapıd dıagnostıcs/ bıo-markers ın stewardshıp The role of infection control precautions in antimicrobial stewardship |  |
| Week 6 | Commonly used antimicrobial pharmacodynamic and pharmacodynamic parameters |  |
| Week 7 | Interactive case studies |  |
| Week 8 | Midterm |  |
| Week 9 | National strategies to improve antimicrobial stewardship knowledge and practice |  |
| Week 10 | Urinary tract infections: |  |
| Week 11 | Skin and soft tissue infections: |  |
| Week 12 | Community-acquired respiratory tract infections: |  |
| Week 13 | Acute Infectious Diarrhea: |  |
| Week 14 | Simulation 1 Scenario.docx  Simulation 2 Scenario.docx |  |
| Week 15 | Discussion: Antimicrobial stewardship in human primary health care |  |
| Week 16 | Final exam |  |

**Assessment methods**

|  |  |  |
| --- | --- | --- |
| Course Activities | Number | Percentage % |
| Attendance | 16 | 0 |
| Laboratory | 0 | 0 |
| Application | 0 | 0 |
| Field Activities | 0 | 0 |
| Specific Practical Training (if any) | 0 | 0 |
| Assignments | 1 | 30 |
| Presentation | 0 | 0 |
| Projects | 0 | 0 |
| Seminars | 0 | 0 |
| Midterms | 1 | 30 |
| Final Exam | 1 | 40 |
| Total | 19 | 100 |
| Percentage of semester activities contributing grade success | 18 | 60 |
| Percentage of final exam contributing grade success | 1 | 40 |
| Total |  | 100 |

**Course Category**

|  |  |
| --- | --- |
| **Core Courses** |  |
| **Major Area Courses** |  |
| **Supportive Courses** | **X** |
| **Media and Management Skills Courses** | **X** |
| **Transferable Skill Courses** | **X** |

**Workload and ECTS Calculation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Activities** | **Number** | **Duration (Hours)** | **Total Work Load** |
| Course Duration (Including Exam Week: 16X2 Total Hours) | 16 | 2 | 32 |
| Laboratory |  |  |  |
| Application |  |  |  |
| Specific practical training (if any) | 0 | 0 | 0 |
| Field Activities |  |  |  |
| Study Hours Out of Class (Preliminary work, reinforcement, etc.) | 16 | 1 | 16 |
| Presentation / Seminar Preparation |  |  |  |
| Projects |  |  |  |
| Homework assignment | 2 | 1 | 2 |
| Midterms (Study duration) | 1 | 4 | 4 |
| Final (Study duration) | 1 | 4 | 4 |
| Total Workload |  | | 58 |

**Matrix of the Course Learning Outcomes Versus Program Outcomes**

1: Lowest, 2: Low, 3: Average, 4: High, 5: Highest

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Program Outcomes** | **Contribution Level\*** | | | | |
| **1** | **2** | **3** | **4** | **5** |
| 1. Integrates and utilizes the information, skills, and approaches obtained from basic, clinical, and medical sciences, behavioral sciences, and social sciences when offering healthcare services. |  |  |  |  | **x** |
| 1. Offers healthcare services to patients with a biopsychosocial approach where the sociodemographic and sociocultural backgrounds of these individuals are taken into consideration, focusing on the universal human values, ethical principles, and professional duties; without exercising discrimination on the basis of language, religion, race, or sex. |  |  |  |  | **x** |
| 1. Aims to protect, improve, and develop individual and public health when offering healthcare services. |  |  |  |  | **x** |
| 1. Performs the necessary studies in sustaining and improving health, taking into the individual, public, social, and environmental factors to affect it. |  |  |  | **x** |  |
| 1. Trains healthy individuals/ patients, their relatives, and other healthcare workers in healthcare upon determining the features, requirements, and expectations of their target audience. |  |  |  | **x** |  |
| 1. Exercises a safe, rational, and effective approach in the procedures of prevention, diagnosis, treatment, follow-up, and rehabilitation; while offering healthcare services. |  |  |  |  | **x** |
| 1. Implements interventional and/or non-interventional practices in a way that is safe and effective for patients during the procedures of diagnosis, treatment, follow-up, and rehabilitation. |  |  |  |  | **x** |
| 1. Offers healthcare services taking into account the health and safety of patients and employees. |  |  |  |  | **x** |
| 1. Takes the regional and global changes in physical and socioeconomic settings to affect health, as well as the changes in the individual features and behaviors of patients referring to them into account, while offering healthcare. |  |  |  |  | **x** |
| 1. Takes the good medical practices into account while performing their duties. |  |  |  |  | **x** |
| 1. Undertakes the tasks and duties within the framework of their professional ethical rules, as well as their legal rights and duties. |  |  |  | **x** |  |
| 1. Stands for the improvements in the manner in which healthcare services are offered, taking into account the concepts of social reliability and social duty, in an effort to protect and improve individual and public health. |  |  |  | **x** |  |
| 1. Evaluates the effects of health policies and healthcare practices on public health indicators, and, where required, amends their evaluation on the grounds of scientific and social needs; in an effort to help improve the quality of healthcare services. |  |  |  | **x** |  |
| 1. Leads their healthcare team while offering healthcare services, in a participative, and collaborative manner. |  |  | **x** |  |  |
| 1. Establishes positive relationships within their healthcare team; and where needed, easily adapts to various positions among their team. |  |  | **x** |  |  |
| 1. Exercises effective communication with patients, the relatives of patients, healthcare professionals, and groups from other professions, as well as institutions and organizations. |  |  |  |  | **x** |
| 1. Plans and conducts scientific studies on the society to which they serve, and use the results of these, or those from other studies, to benefit the society. |  |  |  |  | **x** |
| 1. Accesses the current literature on their profession, and evaluates them with a critical approach. |  |  |  |  | **x** |
| 1. Chooses the correct sources of learning to improve the healthcare services that they offer, and regulates their own learning process. |  |  |  | **x** |  |
| 1. Demonstrates the skills of obtaining and evaluating new information, integrating newer pieces of information with their current ones, as well as adapting to changing conditions throughout their professional life. |  |  |  |  | **x** |