Course Description Template

1.Course Name: Epidemiology

2.Course Code: EPID402

3.(Semester-based)

2024 / 2025 (Semester-based)

4.description preparation date:**12/2/2025**

5.Available Attendance Modes: In-person

6.Total Study Hours / Total Credits:

30 hours (15 Weeks)

7.Course Coordinator(s) (if more than one, please specify):

Name: Professor Dr. Hasan Alwan Bayai
Email: hasan_alwan@hilla-unc.edu.iq

8.Course Objectives

Cognitive Objectives	**Learning Objectives**
1. Understanding the fundamental concepts of epidemiology and related terminology. 2. Recognizing methods for studying epidemics and analyzing health data. 3. Analyzing and evaluating factors associated with the spread of infectious and non-infectious diseases. **Program-Specific Skill Objectives** 1. Applying statistical and epidemiological tools to analyze health problems. 2. Interpreting epidemiological research studies and assessing their quality and outcomes.	

9.Teaching and Learning Strategies

	Strategy
• **Lectures (Theoretical and Interactive)** • **Case Studies and Data Analysis** • **Use of Statistical Software for Epidemiological Data Analysis** • **Presentations and Group Discussions** **Assessment Methods** • **Midterm and Final Exams** • **Practical Assessments and Data Analysis** • **Research Projects and Reports**	

• **Participation in Discussions and Presentations**	

10.Course struture.
First semester

Week	Hours	Learning Outcomes	Unit/Topic	Learning Method	Assessment Method
.1	2	Deep understanding of epidemiology fundamentals and historical development	1.Foundation of Epidemiology and Historical .Development	interactive lectures, reading historical research, group discussions	Analytical essay reflecting the evolution of epidemiology
.2	2	Identifying risk factors and understanding causal inference (in disease)	2.Risk Factors and Disease Outcomes (Causal Inference)	Case study, data analysis, workshops	Applied tests assessing the ability to analyze risk factors and disease outcomes
.3	2	Ability to calculate and interpret different epidemiological rates	3. Rates in Epidemiology	practical exercises on epidemiological .data	Exam covering incidence and mortality rate calculations and interpretations
.4	2	Understanding applying measures of association such as Relative Risk (RR) and Odds Ratio (OR)	4. Measures of .Association	Interactive lectures, analysis of published studies using association measures	short quiz including calculation and conceptual questions. Analysis of a published study interpreting variable relationships
.5 .	2	Understanding models used in disease studies and their spread	5. The Epidemiological .Model	study of epidemiological models like the Triad Model and Agent-Host-Environment Model	group project analyzing an epidemiological model for a specific disease. Presentation comparing different epidemiological models
.6	2	understanding disease	6. The natural History .of Health Conditions	review of patient records, graphical	written test analyzing

		progression through its various stages		representations of disease progression over time.	different disease courses. Case study analysis and report writing.
.7	2	Understanding the three levels of prevention (primary, secondary, tertiary.	7. Levels of Prevention	discussion of real-world prevention strategies, analysis of local and global public health programs	analytical report on a health program implementing a level of prevention. Presentation comparing primary, secondary, and tertiary prevention)
.8	2	understanding transmission methods of infectious diseases and factors affecting their spread.	8.Epidemiology of Communicable .Diseases	study of global epidemics like COVID-19 and influenza, review of infection control protocols	short test assessing knowledge of disease transmission methods. Development of an intervention plan to control an infectious diease
.9	2	understanding environmental and behavioral factors affecting chronic diseases like diabetes and heart disease.	9. Epidemiology of non-Communicable . Diseases	study of epidemiological cases of chronic diseases, analysis of health policies related to chronic disease	Research report on risk factors associated with a non-communicable disease. Test with analytical questions on the relationship between health behaviors and chronic disease
10	2	recognizing disease prevention and treatment methods	10. Control of Communicable .Diseases	interactive lectures on epidemic control protocols, study of vaccination effects in reducing infection rates	case study on the success or failure of a disease control program. Short test assessing knowledge of prevention methods

.11	2	knowledge of epidemiological study types, such as observational and experimental studies	11. Epidemiological Studies	Review and discussion of research papers, conducting a mini epidemiological study.	Exam with analytical questions on study designs. Small research project on a specific health issue.
.12	2	Analyzing the impact of the workplace environment on individual health.	12. Occupational Epidemiology	Study of health problems related to various professions, analysis of workplace prevention strategies.	Research report on the impact of workplace environments on health. Exam including epidemiological data analysis of occupational health issues.
.13	2	Understanding the relationship between environmental factors and diseases.	13. Environmental .Epidemiology	Review of studies on water and air pollution and their impact on health, discussion of environmental policies and their role in reducing health risks.	Analytical report on the relationship between the environment and health. Exam with analytical questions on environmental effects.
14	2	Understanding ethical issues related to epidemiological studies.	14. The Influence of Epidemiology on Ethical and Professional issues	Study of epidemiological research that sparked ethical debates, discussion of laws and policies related to research ethics.	Analytical paper on an ethical issue in epidemiological research. Short test on research ethics.

11.Course Evaluation

The total course grade (100%) is distributed as follows: • Midterm **Exams:** 20% • **Attendance and Participation:** 10% • **Final Exam:** 70%

12.Learning Resources	
Required Textbooks:	**Epidemiology(Rothman)** **Gordsil, L.: Epidemiology, 2nd ed., USA: Saunders Co.,2020**
Main References:	
• Recommended books and supplementary materials (scientific journals, reports, etc.).	
Online References and Websites:	• World Health Organization (WHO) PubMed Database
Course Development Plan.	• **Updating course content according to the latest epidemiological research and practices.** • **Enhancing practical applications using epidemiological data analysis software.** • **Improving assessment methods to include case studies and research projects.** • **Encouraging collaboration with health institutions to enrich practical and applied aspects.**