

**MEDICINE (FACULTY BASED COURSES)****INTRODUCTION**

All medicine graduate programs may require from their students to study the following Faculty Based Courses. These courses may be considered compulsory for some programs and electives for the others.

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|----------|---------------------------|-----|
| 0500-501 | Basic Molecular Biology   | (1) |
| 0500-502 | Basic Immunology          | (1) |
| 0500-503 | Research Communication I  | (1) |
| 0500-504 | Research Communication II | (1) |

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**COURSE DESCRIPTION**

**0500-501: BASIC MOLECULAR BIOLOGY**  
**CR: 1**

Nucleic acid structure and functions; DNA analysis by agarose gel and DNA sequencing; DNA Replication: Mechanism, Regulation, Differences between prokaryotic and eukaryotic process; DNA damage, repair and mutagenesis, and diseases associated with defective repair; Transcription mechanisms and processing of primary RNA; The genetic code, protein synthesis and regulation; Restriction and modification enzymes and their importance in molecular biology.

**0500-502: BASIC IMMUNOLOGY**  
**CR: 1**

Introduction to immunity, Innate and acquired immunity, Organs and cells of the immune system, the Major Histocompatibility Complex and its role in antigen presentation, Humoral immunity, antibodies and complement, Cell-mediated immune function T cells and macrophages, Cytokines and their roles in immune responses, Transplantation immunology, immunoprophylaxis and immunotherapy, Autoimmunity and autoimmune diseases, Hypersensitivity

**500-503: RESEARH COMMUNICATION I**  
**CR: 1**

The aim of this course is to improve the student's ability to locate and retrieve information in the library, take effective notes, recognize and manipulate biomedical word roots and affixes of classical origin, write scientific English and communicate effectively in seminars. The course has the following components, which are designated to achieve this aim: Library skills, biomedical terminology, basic information structure, processing and seminar skills.

**0500-504: RESEARH COMMUNICATION II**  
**CR: 1**

This course has its emphasis on improving the student's ability to collect and organize relevant information, and then communicate that information effectively for research reporting purposes, whether as a written report or a seminar presentation. The timing of the course is contrived to oblique the student to present his thesis background and methods in a seminar.

**MEDICINE (GENERAL COURSES)****INTRODUCTION**

All Medical graduate programs require the study of one or more of the following courses offered by the **Department of Community Medicine and Behavioral Sciences**.

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|----------|------------------------------------------------|-----|
| 0510-501 | Biostatistics and Computer in Medicine         | (2) |
| 0510-502 | Advanced Biostatistics                         | (1) |
| 0510-503 | Epidemiology                                   | (1) |
| 0510-504 | Radiotracer Methodology in Biological Research | (2) |
| 0510-601 | Biostatistical Method in Medical Research      | (3) |
| 0510-602 | Epidemiology of Infectious Diseases            | (3) |

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**COURSE DESCRIPTION****0510-501: BIostatISTICS AND COMPUTER IN MEDICINE****CR: 2**

This is a 2 credit hour faculty-required course intended for students joining the graduate M.Sc. program in the Faculty of Medicine, Kuwait University. The course takes into account the fact that enrolled students belong to various backgrounds and hence it includes a diversity of topics to meet their interest. The course is characterized by the inclusion of statistical methods in epidemiology (relative risk, odds ratio to measure the association between diseases and factors, evaluation of diagnostic tests), determination of size of investigations and power, analysis of variance, and design of controlled randomized clinical trials. It also includes multivariate statistical methods such as multiple linear regression and binary multivariable logistic regression. It focuses on concepts, limitations, validity and assumptions underlying these statistical methods.

The course also provides students with knowledge about hardware and software computer technology in addition to the skills of applying the procedures of the SPSS statistical package, and information about computer uses in medicine

(hospital information system, drug information system and computer-assisted diagnoses).

**0510-502: ADVANCED BIOSTATISTICS****CR: 1**

Planning of statistical investigation. Controlled comparative studies: Clinical and simple comparative trials, two period cross over design. Analysis of variance. Experimental design. The control of misclassification error. Survivorship tables and life tables. Biological assays: Parallel-line, slope ratio and quantal response. Non-parametric statistics: One-sample run test, Mann-whitney test, Kruskal-Wallis analysis of variance, and Kendall rank correlation.

**0510-503: EPIDEMIOLOGY****CR: 1**

Scope of epidemiology, basic measures of frequency, sources of morbidity data, direct and indirect standardization. Planning of an epidemiological investigation, survey planning, variability of measurements, validation and problems in validation, measurement of experimental error, population screening and disease control.

**0510-504: RADIOTRACER METHODOLOGY  
IN BIOLOGICAL RESEARCH  
CR: 2**

This course provides an introduction to the principles and procedures underlying the use of radioactive isotopes in biological research. The material will be presented at a level requiring only elementary mathematics and the principles and procedures will be illustrated with practical examples drawn from actual laboratory work. The course begins with the materials, and detection and measurement of radiation, and progresses to discussions and illustrations of the applications and problems of radiation measurement and experimental design in biology and medicine and methods used for reduction of radiation exposure. Hazards associated with the use of radioactive material will be discussed. Topics which will be given special emphasis include Gamma and Beta counting of biological samples autoradiography, radiochromatography, use in life science and clinical research, and radiation safety measures.

**0510-601: BIOSTATISTICAL  
METHODS IN MEDICAL  
RESEARCH  
CR: 3 PR: 0510-501 or its equivalent.**

The course primarily aims at equipping students with tools of research. This includes univariate statistical methods update, sampling methods and sample size, experimental design, multivariate

analysis, logistic regression, survival analysis: clinical trials, statistical methods in epidemiology, analysis of matched data and nonparametric statistics. Mann-Whitney, Wilcoxon paired test, Kruskal-Wallis and Spearman rank correlation.

**0510-602: EPIDEMIOLOGY OF  
INFECTIOUS DISEASES  
CR: 3**

Concepts and definitions, epidemiological models, causality, epidemic process, indices of health and disease, natural history of infectious diseases, contact patterns, measuring infectivity, methods and techniques for studying an infection in the community, time and place clustering, use of routinely collected data, special surveys, surveillance of infectious diseases, field investigation, analysis of an outbreak, seroepidemiology, the effect of bias, confounding and misclassification on the identification of source/reservoir of infection and mode of transmission, statistical techniques often used in infectious disease epidemiology, mathematical models for epidemics, primary and secondary prevention in the infectious disease epidemiology, epidemiology of vaccination, control, elimination and eradication, epidemiology of emerging infections and epidemiology of specific infectious diseases.

## DIPLOMA IN CHILD LIFE

### **INTRODUCTION**

The Department of Community Medicine and behavioral sciences (Faculty of Medicine-Health Science Center) offers a study program leading to the award of diploma in child life. This program is intended to understand the effects of hospitalization and illness upon children/adolescents and their families, to understand the effects of illness and health care encounters upon young patients and their families, to know developmental milestones and informal assessment techniques, which may be used by child life specialists to understand hospitalized children and adolescents. It helps to use medical terminology in order to communicate effectively with other professionals, both verbally and in writing.

### **PROGRAM REQUIREMENTS**

The program requirements are:

#### **27 TOTAL COURSE CREDITS**

#### **27 COMPULSORY (CREDITS IN PARENTHESIS)**

|          |                                                                        |     |
|----------|------------------------------------------------------------------------|-----|
| 0510-511 | Introductions to child life                                            | (1) |
| 0510-512 | Child growth and development                                           | (3) |
| 0510-513 | Family systems, family interaction and culture                         | (3) |
| 0510-514 | Impact of stress on child and family and activities for coping with it | (3) |
| 0510-515 | Practical 1                                                            | (3) |
| 0510-521 | Child life interventions                                               | (3) |
| 0510-522 | Methods and materials needed for child life programming                | (3) |
| 0510-523 | Administration and legal requirements                                  | (2) |
| 0510-524 | Practical 2                                                            | (5) |
| 0510-525 | Child life project                                                     | (1) |

### **COURSE DESCRIPTION**

#### **0510-511: INTRODUCTION TO CHILD LIFE CR: 1**

The course provides an overview of the history and development of Kuwait health care system, including the organizations and agencies serving children and their families. It introduces students to the profession of child life, development of this field and current trends and issues in child health care services internationally and in Kuwait.

Explores ways in which Child Life specialists can help children and their families.

#### **0510-512: CHILD GROWTH AND DEVELOPMENT CR: 3**

Introduction to growth and development of children of all ages. Examines normal milestones in areas of growth and development with particular

emphasis on cognitive, psychosocial and emotional dimensions. Explores and discusses different needs, interests and common emotional issues of children in different stages of development.

**5013-513: FAMILY SYSTEMS, FAMILY INTERACTION AND CULTURE**  
**CR: 3**

Combines the study of family systems theory with practical applications involving work with families using a systems approach. Explores interdependent relationships in families and their influences on individual behavior within the family system. Includes history and overview of family systems theory, different conceptual and therapeutic approaches to family systems, patterns within systems and appropriate modalities for working with a range of family units.

The course also focuses on current theories of family interaction and emerging family roles. Explores the institution of family in its cultural context and examines the way in which cultural assumptions and values are embedded in the parenting process and their influence on parenting behaviors, children's development and family relationships.

**0510-514: IMPACT OF STRESS ON CHILD AND FAMILY AND ACTIVITIES FOR COPING WITH IT**

**CR: 3**

Introduces the concepts of stress and responses to stress. Discusses the impact of illness, injury and hospitalization on the child and the adjustments made by the family to external and internal stress. Presents research and clinical evidence concerning the effects of stress on children's coping patterns and explores practical methods for helping children increase their competence to cope with stress.

Includes a section on families with an infant, preschool or school-age handicapped child with special needs. Also includes basic understanding of medical terminology and disease process.

**0510-515: PRACTICAL 1 / CHILD LIFE PRACTICE 1**  
**CR: 3**

Provides a supervised practical experience to promote the health and development of children and family. Areas of practice are selected to provide the students opportunities for applying and relating child life principles and concepts, first in normal settings (preschools and schools) followed

by hospitals where children are admitted for short periods of time.

**0510-521: CHILD LIFE INTERVENTIONS**  
**CR: 3**

Explores and discusses various child life intervention strategies and techniques including play and therapeutic interventions, psychological preparation, emotional support, behavior management, parental participation, group activities and healing environments.

**0510-522: METHODS AND MATERIALS NEEDED FOR CHILD LIFE PROGRAMMING**  
**CR: 3**

Explores relationships between child life activities and child development theories, stressing the acquisition of practical skill needed for child life programming.

Course focuses on knowledge of research which supports child life practice, developmental assessment, learning process, screening techniques, collaboration and communication with parents and other health care professionals, counseling skills and gaining familiarity with the medical terminology.

**0510-523: ADMINISTRATION AND LEGAL REQUIREMENTS**  
**CR: 2**

Course emphasizes on the right and safety of children and examines the pre-professional experiences of students and considers their transition into a professional role.

Course includes child life practices and policies, ethical requirements, planning, designing, supervising and evaluating programs, interpreting observations, documentation, providing a service, work environment issues, work place issues, implementing and monitoring occupational health and safety, mandatory reporting, etc.

**0510-524: PRACTICAL 2 / CHILD LIFE PRACTICE 2**  
**CR: 5**

Provides a supervised practical experience in hospital child life programs. Students will be required to systematically assess the child life issues and problems, the stress vulnerability, and plan, implement and evaluate for specific child life interventions of assigned group of hospitalized children.

**0510-525: CHILD LIFE PROJECT WRITTEN  
REPORT**

**CR: 1**

Provides independent and in-depth study on relevant issues in child life. Students are required to submit a formal written work describing the results of independent study.