**Course Description**

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| **Faculty** | **Pharmacy** |
| **Department**  | **Clinical Pharmacy** | **Level** | 7 |
| **Course**  | Immunology and Vaccination | **Code** | 1702355 | **Prerequisite** | NON |
| **Credit hours** | 3 | **Theoretical**  | 3 | **Practical** | NON |
| **Coordinator** | Dr. Yasser Gaber | **Email** |  |
| **Teachers** |  | **Emails** |  |
| **Lecture Time** |  | **Place** |  | **Attendance mode** | Face to face  |
| **Semester**  |  | **Preparation date**  |  | **Modification Date** |  |

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|  **Abstracted Course Description**  |
| This course is intended to introduce immunology. The emphasis is on basic concepts of immunology as well as cutting edge advances in immunology. On the other hand, this course will deal with modes of thinking necessary for understanding how the immune system works with and responds to self and non-self-molecules and how it cross roads between innate and adaptive (including both humoral and cell mediated) immunity. In addition, we will cope with adverse effects of the immune response and what occurs in case of immune system dysfunctions |
| **Course Goals** |
| Medical Knowledge The resident should be able to: 1. Gain knowledge in the indications, techniques, interfering conditions or medications and interpretation of allergy skin testing. 2. Gain knowledge in diagnosis and treatment of urticaria, angioedema, hereditary angioedema, dermatographism. 3. Discuss the evaluation, diagnosis and management for the following disorders: Type I anaphylactic/immediate, late phase and dual reactions Type II – cytotoxic reaction Type III – Arthus reaction Type IV – delayed reaction Type V – antireceptor Anaphylaxis Rhinitis allergic/nonallergic, vasomotor, seasonal, medicamentosa Common food allergies Common drug allergies: PCN/Sulfa Dermatitis 4. Gain knowledge in indications, limitations of hematologic and other fluid analysis tests in diagnosis and management of allergic/immunologic disorders.  |

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| **CILOs** |
| **Knowledge** |
| a1. Apply Knowledge for learning the foundational sciences to assess the medical literature, give an explanation for drug action, clear up healing problems, and develop populace fitness and affected person targeted carea2. Patient-targeted care - Provide patient-targeted care as the drugs expert (accumulate and interpret evidence, prioritize, formulate tests and recommendations, implement, screen and modify plans, and record activities).a3. Medication use structures management- Manage affected person healthcare desires the use of human, financial, technological, and bodily assets to optimize the protection and efficacy of drugs use structures |
| **Skills** |
| b1. Health and wellness - Design prevention, intervention, and academic techniques for people and groups to control persistent sickness and enhance fitness and wellnessb2. Population-primarily based totally care (Provider) - Describe how population-primarily based totally care impacts affected person focused care and impacts the improvement of exercise tips and evidence-primarily based totally excellent practicesb3. Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution . |
| **Competencies** |
| c1. Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding.c2. Advocate Patient Advocacy - Assure that patients’ high-quality hobbies are representedc3. Collaborator Interprofessional collaboration – Actively take part and have interaction as a healthcare crew member through demonstrating mutual respect, understanding, and values to satisfy affected person care needs.. |
| **Learning Methods** |
| * Lectures
 |
| **Evaluation Tools** |
| **Exams****Homeworks**  |
| **Week** | **Topics** | **Learning methods** | **Evaluation tool** | **ILOs** | **Hours** |
| **1.** | Introduction to Immunology a. Basic concepts in immunology b. Principles of innate immunity c. Principles of adaptive immunity | Textbook and handouts | QUIZ | **A1,a2,b1,b2,c1** | **6** |
| **2.** |
| **3.** | Immune System:a. Acquiredb. Innate | Textbook and handouts | Exam | **A1,a2,b1,b2,c1** | **3** |
| **4.** | Microorganisms or toxinsChemical barriersImmunological memoryActive memory and immunization | Textbook and handouts | Exam | **A1,a2,b1,b2,c1** | **6** |
| **5.** |
| **6.** | Cells and Their Jobs | Textbook and handouts | Exam | **A1,a2,b1,b2,c1** | **3** |
| **7.** | Autoimmunity | Textbook and handouts | Exam | **A2,a3,b1,b3,c2,c3** | **6** |
| **8.** | Textbook and handouts |
| **9.** | Hypersensitivity | Textbook and handouts | Exam | **A2,a3,b1,b3,c2,c3** | **6** |
| **10.** | Textbook and handouts |
| **11.** | IMMUNOGLOBULINS - STRUCTURE AND FUNCTION   | Textbook and handouts | homework | **A2,a3,b1,b3,c2,c3** | **6** |
| **12.** | Textbook and handouts |
| **13.** | Vaccination and DiseasesAntigen- Properties, Types and Determinants of Antigenicity | Textbook and handouts | Exam | **A1,a2,b1,b2,c1** | **3** |
| **14.** | Textbook and handouts | **A1,a2,b1,b2,c1** |  |
| **15.** | Final Examinations |  |  | **A2,a3,b1,b3,c2,c3** |

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| **Plan of Course Evaluation** |
| **Evaluation Tools** | **Mark** | **ILOs** |
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| **First Exam (Mid-term)**  | **30%** | A1.A2.A3 |  |  |  |  |  |
| **Second Exam (If available)** |  |  |  |  |  |  |  |
| **Final Exam** | **50%** |  |  |  |  |  |  |
| **Activities** | **20%** |  |
| **Activities Evaluation** | Homework/Tasks | 10% | B1. C1 | **A2,a3,b1,b3,c2,c3** |  |  |  |  |
| Case Study  |  |  |  |  |  |  |  |
| Discussion and Interactions |  |  |  |  |  |  |  |
| Group Activities |  |  |  |  |  |  |  |
| Laboratory Exams |  |  |  |  |  |  |  |
| Presentations |  |  |  |  |  |  |  |
| Quizzes | 10% | C2A1 |  |  |  |  |  |
| Others |  |  |  |  |  |  |  |
| **Total** | 100% |  |  |  |  |  |  |

 **Components**  |
| **Book** | **Basic Immunology****Clinical Immunology** |
| **References** | Basic Immunology: Functions and Disorders of the Immune System 5th Edition. 2022by [Abul K. Abbas MBBS](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Abul+K.+Abbas+MBBS&text=Abul+K.+Abbas+MBBS&sort=relevancerank&search-alias=books) (Author), [Andrew H. Lichtman MD PhD](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_2?ie=UTF8&field-author=Andrew+H.+Lichtman+MD++PhD&text=Andrew+H.+Lichtman+MD++PhD&sort=relevancerank&search-alias=books) (Author), [Shiv Pillai MBBS PhD](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_3?ie=UTF8&field-author=Shiv+Pillai+MBBS++PhD&text=Shiv+Pillai+MBBS++PhD&sort=relevancerank&search-alias=books) (Author).Clinical Immunology: Principles and Practice 5th Edition.1996by [Robert R. Rich MD](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&field-author=Robert+R.+Rich+MD&text=Robert+R.+Rich+MD&sort=relevancerank&search-alias=books) (Author), [Thomas A. Fleisher MD FAAAAI FACAAI](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_2?ie=UTF8&field-author=Thomas+A.+Fleisher+MD++FAAAAI++FACAAI&text=Thomas+A.+Fleisher+MD++FAAAAI++FACAAI&sort=relevancerank&search-alias=books) (Author), [William T. Shearer MD PhD](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_3?ie=UTF8&field-author=William+T.+Shearer+MD++PhD&text=William+T.+Shearer+MD++PhD&sort=relevancerank&search-alias=books) (Author), [Harry Schroeder](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_4?ie=UTF8&field-author=Harry+Schroeder&text=Harry+Schroeder&sort=relevancerank&search-alias=books) (Author), [Anthony J. Frew MD FRCP](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_5?ie=UTF8&field-author=Anthony+J.+Frew+MD++FRCP&text=Anthony+J.+Frew+MD++FRCP&sort=relevancerank&search-alias=books) (Author), [Cornelia M. Weyand MD PhD](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_6?ie=UTF8&field-author=Cornelia+M.+Weyand+MD++PhD&text=Cornelia+M.+Weyand+MD++PhD&sort=relevancerank&search-alias=books) (Author) |
| **Recommended Readings** |  |
| **Electronic materials** |  |
| **Other websites** |  |

**Subject Coordinator:**

**Head of Curriculum Committee:**

**Department Head:**

**Faculty Dean:**

**Last update date:**