

# Advanced Therapeutics III (PHCL 503)

## **Course coordinator:**

*Dr Khalid Alkharfy*

## **Course instructors:**

*Khalid Alkharfy, Pharm.D., Ph.D.*

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## **Course description:**

This course involves the pharmacotherapy of renal, critical care, and infectious diseases. Learning experiences include discussions of data needed to define and assess therapeutic problems, evidence-based pharmacotherapy, case study analysis, decision-making in optimization of drug therapy, and development of adverse drug reaction management plans and pharmaceutical care plans. Classes are taught using a case-based interactive approach and focus on the application of subject matter to patient-specific drug therapy problems.

## **Topics to be covered:**

### *A. Renal Disorders*

1. Renal pathophysiology
2. Assessment of renal function
3. Acute renal failure
4. Chronic renal failure
5. Renal replacement therapy for ESRD
6. Dose adjustment in renal insufficiency

### *B. Critical care Pharmacotherapy*

1. General management of critically ill patient
2. Monitoring in critical care medicine
3. Circulatory and respiratory support
4. ABGs and acid-base balance
5. Fluid and electrolytes balance
6. Transfusion and coagulation disorders
7. Sedation, analgesia and paralysis
8. Altered mental states, coma and status epilepticus
9. Systemic inflammatory response syndrome (SIRS), CARS, and MODS
10. Sepsis and septic shock
11. Surgical emergencies

*C. Infectious Diseases*

1. Principles of infectious diseases
2. Antimicrobial prophylaxis for surgical procedures
3. Central nervous system infections
4. Endocarditis
5. Respiratory tract infections
6. Tuberculosis
7. Urinary tract infections
8. Soft tissue and bone infections
9. HIV/AIDS
10. Fungal infections

**Student evaluation:**

Exam-1	25 points
Exam-2	25 points
Final	40 points
Assignments	10 points

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Total 100 points

**Reading materials:**

1. DiPiro JT, Talbert RL, Hayes PE, Yee GC, Matzke GR and Posey LM. Pharmacotherapy: A Pathophysiologic Approach. Third edition. Appleton & Lange; Norwalk, Connecticut; 6<sup>th</sup> edition 2005.
2. Mary Anne Koda-Kimble, Lloyd Yee Young, Wayne A. Kradjan, B., Joseph Guglielmo, Brain K. Alldredge, Robin L. Corelli. Applied Therapeutics: The Clinical Use of Drugs. Lippincott Williams & Wilkins; 8<sup>th</sup> edition 2005.
3. Distributed handouts.