Advanced Therapeutics III (PHCL 503)

**Course coordinator:**
*Dr Khalid Alkharfy*

**Course instructors:**
*Khalid Alkharfy, Pharm.D., Ph.D.*  
*Ali Almitwazy, Pharm.D.*

**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:

<table>
<thead>
<tr>
<th></th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam-1</td>
<td>25</td>
</tr>
<tr>
<td>Exam-2</td>
<td>25</td>
</tr>
<tr>
<td>Final</td>
<td>40</td>
</tr>
<tr>
<td>Assignments</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Reading materials:

3. Distributed handouts.