

**PHT 560 (Advanced Pharmaceutical Biotechnology)**

**First Semester  
1437/1438 H**

**Description:** Biotechnology is one of the fastest growing and sought after disciplines in Science. It impacts on our daily lives; from the food we eat, to the medicines that are used to treat diseases. This course provides the graduate student with the core knowledge and practical skills in biotechnology with particular emphasis on modules pertaining to pharmaceutical biotechnology. The lectures are supplemented with in depth analysis of relevant case studies, projects, assignments, web tools and site visits.

**Objectives:** The course content is specifically designed to meet the needs of graduate students with cutting edge knowledge and techniques that are currently employed in biotech industry. Specifically course will cover:

- Introduction [definition-application-tools]
- Molecular biology of nucleic acids
- Molecular biology of protein
- Biotechnologically developed pharmaceuticals [biosimilars]
- Monoclonal antibodies
- Vaccines
- Gene therapy
- Regulatory affairs of biopharmaceuticals and bioethics

**Course Instructors:**

Instructor Name	Office Number	Office Hours
<b>Professor Ibrahim A. Alsarra</b> Department of Pharmaceutics	AA 90	By appointment e-mail: <a href="mailto:ialsarra@ksu.edu.sa">ialsarra@ksu.edu.sa</a> or call: <b>4677504</b>
<b>Aws I. Alshamsan</b> Department of Pharmaceutics	AA 87	By appointment e-mail: <a href="mailto:aalshmsan@ksu.edu.sa">aalshmsan@ksu.edu.sa</a> or call: <b>4677363</b>

## SUBJECT SCHEDULE

Time Schedule	Topic
<b>Aws I. Alshamsan, Ph.D.</b>	
<b>Week 1</b> 18/09/2016	<b>Semester Commencement</b> <b>(No class for postgraduate students)</b>
<b>Week 2</b> 25/09/2016	Overview, Pharmaceutical Biotechnology
<b>Week 3</b> 02/10/2016	Recombinant DNA Technology
<b>Week 4</b> 09/10/2016	Fermentation Technology
<b>Week 5</b> 16/10/2016	Genetics in Drug Therapy
<b>Week 6</b> 23/10/2016	Vaccines
<b>Week 7</b> 30/10/2016	Monoclonal Antibodies Stem Cell-Based Research
<b>Professor Ibrahim A. Alsarra</b>	
<b>Week 8</b> 06/11/2016	Background, Cell and Molecular Biology
<b>Mid-semester Break</b> <b>From: 10/11/2016 (10/02/1438 H) to: 19/11/2016 (19/02/1438 H)</b>	
<b>Week 9</b> 20/11/2016	Protein Structure
<b>Week 10</b> 27/11/2016	Pharmaceutical and Microbiological Considerations
<b>Week 11</b> 04/12/2016	Recent Advances in Biological Products and its Clinical Applications
<b>Week 12</b> 11/12/2016	
<b>Week 13</b> 18/12/2016	Regulatory Affairs of Biopharmaceuticals and Bioethics