

## Lesson Plan

Name of the Assistant professor: Ms. Jyotsana Chahal

Class and Section: B.Sc. (Medical) 3<sup>rd</sup> year (6<sup>th</sup> semester)

Subject: Botany

Lesson Plan: 17 weeks of (Lesson Plan Format lesson: January 2018 to April 2018)

Week 1 Chapter 1: Basics of Enzymology
Assignments
Week 1, Monday, 1 January 2018 <ul style="list-style-type: none"><li>• 1.1.1. Basics of Enzymology</li><li>• 1.1.2 discovery of enzymes</li><li>• 1.1.2. Mechanism of enzyme action</li></ul>
Week 1, Tuesday, 2 January 2018 <ul style="list-style-type: none"><li>• 1.1.4. catalysis and enzyme</li><li>• 1.1.5.nomenclature and classification</li></ul>
Week 1, Wednesday, 3 January 2018 <ul style="list-style-type: none"><li>• 1.2.1. Isoenzymes nomenclature</li><li>• 1.2.2. classification</li></ul>
Week 1, Thursday, 4 January 2018 <ul style="list-style-type: none"><li>• 1.3.1. characteristics of enzymes</li></ul>
<ul style="list-style-type: none"><li>• Week 1, Saturday, 6 January 2018</li><li>• 1.4.1. inhibition of enzyme actions</li><li>• 1.4.2. Kinetics of enzyme actions</li></ul>
Week 2 Chapter 2: Respiration
Week 2, Monday, 8 January 2018 <ul style="list-style-type: none"><li>• 1.5.1. coenzymes</li><li>• 2.1.1. Respiration phases</li><li>• 2.1.2. cellular respiration</li><li>• 2.1.3. oxidative decarboxylation concept</li></ul>
Week 2, Tuesday, 9 January 2018 <ul style="list-style-type: none"><li>• 2.2.3. mechanisms Glycolysis</li><li>• 2.2.4. oxidative decarboxylation</li><li>• 2.2.5. kerb cycle</li></ul>

<p>Week 2, Wednesday, 10 January 2018</p> <ul style="list-style-type: none"> <li>• 2.3.1. electron transport chain</li> <li>• 2.3.2. shuttle system</li> <li>• 2.3.4. oxidative phosphorylation</li> </ul>
<p>Week 2, Thursday, 11 January 2018</p> <ul style="list-style-type: none"> <li>• 1.3.2. Anaerobic respiration</li> <li>• 1.3.3. efficiency of respiration</li> <li>• 1.3.4. ATP synthesis, RQ</li> </ul>
<p>Week 2, Friday, 12 January 2018</p> <ul style="list-style-type: none"> <li>• 2.4.1. Redox potential</li> <li>• 3.5.1 growth and development</li> <li>• 3.5.2. phase of growth</li> <li>• 3.5.3. growth curve</li> <li>• 3.5.4. Measurement of growth</li> </ul>
<p>Week 2, Saturday, 13 January 2018</p> <ul style="list-style-type: none"> <li>• 3.1.1. growth regulators : auxin and gibberellins</li> </ul>
<p>Week 3 Chapter 3: growth and development</p>
<p>Week 3, Monday, 15 January 2018</p> <ul style="list-style-type: none"> <li>• 3.1.2. cytokinins</li> <li>• 3.1.3. ethylene</li> <li>• 3.1.4. abscisic acid</li> </ul>
<p>Week 3, Tuesday, 16 January 2018</p> <ul style="list-style-type: none"> <li>• 3.2.1. Plant movement- brief discussion</li> </ul>
<p>Week 3, Wednesday, 17 January 2018</p> <ul style="list-style-type: none"> <li>• 3.3.1. Morphogenesis</li> <li>• 3.3.2. phytochrome pigments</li> <li>• 3.3.3. cryptochrome</li> </ul>
<p>Week 3, Thursday, 18 January 2018</p> <ul style="list-style-type: none"> <li>• 3.4.1. Photomorphogenesis</li> <li>• 3.4.2. Photoperiodism</li> <li>• 3.5.1. fruit ripening</li> </ul>
<p>Week 3, Friday, 19 January 2018</p> <ul style="list-style-type: none"> <li>• 3.6.1. Biological clock</li> </ul>
<p>Week 3, Saturday, 20 January 2018</p> <ul style="list-style-type: none"> <li>• 3.7.1. complete discussion on various types of pigments in plants</li> </ul>
<p>Week 4 Chapter 4: lipid metabolism</p>

<p>Week 4, Tuesday, 23 January 2018</p> <ul style="list-style-type: none"> <li>• 4.1.1. fatty acids Introduction</li> <li>• 4.1.2. types : saturated and unsaturated</li> <li>• 4.1.3. various notations</li> </ul>
<p>Week 4, Wednesday, 24 January 2018</p> <ul style="list-style-type: none"> <li>• 4.2.1. properties of fatty acids</li> </ul>
<p>Week 4, Thursday, 25 January 2018</p> <ul style="list-style-type: none"> <li>• 4.3.1. synthesis of fatty acids</li> <li>• 4.3.2. condensation of fatty acids and glycerol</li> </ul>
<p>Week 4, Saturday, 27 January 2018</p> <ul style="list-style-type: none"> <li>• 4.4.1. alpha-oxidation</li> <li>• 4.4.2. beta-oxidation</li> <li>• 4.4.3. glyoxlate cycle</li> </ul>
<p>Week 5 Chapter 4: lipid metabolism</p>
<p>Week 5, Monday, 29 January 2018</p> <ul style="list-style-type: none"> <li>• 4.5.1. lipid structure</li> <li>• 4.5.2. types of lipids</li> </ul>
<p>Week 5, Tuesday, 30 January 2018</p> <ul style="list-style-type: none"> <li>• 4.6.1. derived lipid structure</li> </ul>
<p>Week 5, Thursday, 1 February 2018</p> <ul style="list-style-type: none"> <li>• 5.1.1. nitrogen nutrition in plants</li> <li>• 5.2.1 symbiotic nitrogen fixation</li> </ul>
<p>Week 5, Friday, 2 February 2018</p> <ul style="list-style-type: none"> <li>• 5.2.2. non symbiotic nitrogen fixation</li> <li>• 5.2.3. ammonia assimilation</li> </ul>
<p>Week 5, Saturday, 3 February 2018</p> <ul style="list-style-type: none"> <li>• 5.3.1. nitrate and nitrite reductase activities</li> </ul>
<p>Week 6 Chapter 6: Recombinant DNA technology</p>
<p>Week 6, Monday, 5 February 2018</p> <ul style="list-style-type: none"> <li>• 6.1.1. tools of rDNA technology</li> <li>• 6.2.1. cloning vectors introduction</li> </ul>
<p>Week 6, Tuesday, 6 February 2018</p> <ul style="list-style-type: none"> <li>• 6.2.2. cloning vectors: plasmid and phages</li> </ul>
<p>Week 6, Wednesday, 7 February 2018</p> <ul style="list-style-type: none"> <li>• 6.2.3. cloning vectors: plasmid, cosmids, YAC and BAC</li> </ul>
<p>Week 6, Thursday, 8 February 2018</p>

<ul style="list-style-type: none"> <li>• 6.3.1. Restriction enzymes: details</li> </ul>
<p>Week 6, Friday, 9 February 2018</p> <ul style="list-style-type: none"> <li>• 6.4.1. techniques of rDNA technology</li> <li>• 6.4.2. genomic and cDNA library</li> </ul>
<p>Week 7</p> <p>Chapter 7: Plant Tissue Culture</p>
<p>Week 7, Monday, 12 February 2018</p> <ul style="list-style-type: none"> <li>• 7.1.1. transgenesis</li> <li>• 7.1.2. transfection</li> </ul>
<p>Week 7, Wednesday, 14 February 2018</p> <ul style="list-style-type: none"> <li>• 7.2.1. plant tissue culture requirements</li> </ul>
<p>Week 7, Thursday, 15 February 2018</p> <ul style="list-style-type: none"> <li>• 7.2.1. callus and suspension culture</li> <li>• 7.2.2. meristem culture</li> </ul>
<p>Week 7, Friday, 16 February 2018</p> <ul style="list-style-type: none"> <li>• 7.2.3. embryo culture</li> <li>• 7.2.4. organogenesis</li> <li>• 7.2.5. embryogenesis</li> <li>• 7.3.1. role of plant tissue culture</li> </ul>
<p>Week 7, Saturday, 17 February 2018</p> <ul style="list-style-type: none"> <li>• 8.1.1. Totipotency and differentiation</li> </ul>
<p>Week 8</p> <p>discussions</p>
<p>Week 8, Monday, 19 February 2018</p> <ul style="list-style-type: none"> <li>• Discussions on enzymology</li> </ul>
<p>Week 8, Tuesday, 20 February 2018</p> <ul style="list-style-type: none"> <li>• Discussions on various cycles of respiration</li> </ul>
<p>Week 8, Wednesday, 21 February 2018</p> <ul style="list-style-type: none"> <li>• Discussions on growth and development</li> </ul>
<p>Week 8, Thursday, 22 February 2018</p> <ul style="list-style-type: none"> <li>• Discussions on lipid metabolism</li> </ul>
<p>Week 8, Friday, 23 February 2018</p> <ul style="list-style-type: none"> <li>• Discussions on nitrogen metabolism</li> </ul>
<p>Week 8, Saturday, 24 February 2018</p> <ul style="list-style-type: none"> <li>• Discussions on Totipotency and differentiation</li> </ul>
<p>Week 9</p> <p>unit test of paper 1</p>
<p>Week 9, Monday, 26 February 2018</p> <ul style="list-style-type: none"> <li>• Unit test</li> </ul>

<p>Week 9, Tuesday, 27 February 2018</p> <ul style="list-style-type: none"> <li>• Discussions of topics of test</li> </ul>
<p>Week 10</p> <p>Chapter 1 Cereals</p>
<p>Week 10, Monday, 05 march 2018</p> <ul style="list-style-type: none"> <li>• 1.1.1. introduction and origin</li> </ul>
<p>Week 10, Tuesday, 06 march 2018</p> <ul style="list-style-type: none"> <li>• 1.2.1. rice morphology</li> <li>• 1.2.2. botanical description</li> <li>• 1.2.3. cultivation</li> </ul>
<p>Week 10, Wednesday, 07 march 2018</p> <ul style="list-style-type: none"> <li>• 1.2.4.HYV- varieties discussion</li> <li>• 1.2.5. disease of rice</li> </ul>
<p>Week 10, Thursday, 08 march 2018</p> <ul style="list-style-type: none"> <li>• 1.3.1. wheat morphology</li> <li>• 1.3.2. botanical description</li> <li>• 1.3.3. cultivation</li> </ul>
<p>Week 10, Friday, 09 march 2018</p> <ul style="list-style-type: none"> <li>• 1.3.4. cytotaxonomy</li> <li>• 1.3.5. evolution</li> <li>• 1.3.6.HYV- wheat</li> <li>• 1.3.7. disease of wheat</li> </ul>
<p>Week 10, Saturday, 10 march 2018</p> <ul style="list-style-type: none"> <li>• 1.4.1. maize origin</li> <li>• 1.4.2. botanical description</li> <li>• 1.4.3. climatic zone</li> <li>• 1.4.4. kinds of maize</li> </ul>
<p>Week 11</p> <p>Chapter 2-3: pulses and vegetables</p>
<p>Week 11, Monday, 12 march 2018</p> <ul style="list-style-type: none"> <li>• 1.4.5. HYV- maize</li> <li>• 2.1.1. pulses- origin and uses</li> </ul>
<p>Week 11, Tuesday, 13 march 2018</p> <ul style="list-style-type: none"> <li>• 2.2.1 Gram botanical description and uses</li> </ul>
<p>Week 11, Wednesday, 14 march 2018</p> <ul style="list-style-type: none"> <li>• 2.3.1. Cajanas (arhar) botanical description and uses</li> </ul>
<p>Week 11, Thursday, 15 march 2018</p> <ul style="list-style-type: none"> <li>• 3.1.1. garden pea, potato, tomato-botanical description and uses</li> </ul>
<p>Week 11, Friday, 16 march 2018</p>

<ul style="list-style-type: none"> <li>• 3.1.2. onion fibres and its types</li> </ul>
<p>Week 11, Saturday, 17 march 2018</p> <ul style="list-style-type: none"> <li>• 4.1.1. cotton, jute, flax - botanical description and uses</li> </ul>
<p>Week 12</p> <p>Chapter 4: Fibres</p>
<p>Week 12, Monday, 19 march 2018</p> <ul style="list-style-type: none"> <li>• 4.1.1. vegetable oils-types, mustard</li> </ul>
<p>Week 12, Tuesday, 20 march 2018</p> <ul style="list-style-type: none"> <li>• 4.1.2. groundnut- botanical description</li> </ul>
<p>Week 12, Wednesday, 21march 2018</p> <ul style="list-style-type: none"> <li>• 4.1.3. coconut- botanical description</li> </ul>
<p>Week 12, Thursday, 22 march 2018</p> <ul style="list-style-type: none"> <li>• 4.2.1. spices-concept, ginger- botanical description</li> </ul>
<p>Week 12, Friday, 23 march 2018</p> <ul style="list-style-type: none"> <li>• 4.2.2. coriander</li> <li>• 4.2.3. turmeric</li> </ul>
<p>Week 12, Saturday, 24 march 2018</p> <ul style="list-style-type: none"> <li>• 4.2.3. asafoetida</li> <li>• 4.2.4. cloves</li> </ul>
<p>Week 13</p> <p>Chapter 5: medicinal plants</p>
<p>Week 13, Monday, 26 march 2018</p> <ul style="list-style-type: none"> <li>• 5.1.1. medicinal plants- <i>Rauwolfia</i>, <i>Neem</i>, <i>Cinchona</i></li> </ul>
<p>Week 13, Tuesday, 27 march 2018</p> <ul style="list-style-type: none"> <li>• 5.1.2. <i>Cannabis</i>, <i>opium</i>, <i>Belladonna</i></li> </ul>
<p>Week 13, Wednesday, 28 march 2018</p> <ul style="list-style-type: none"> <li>• 5.2.1. Beverages-Tea</li> </ul>
<p>Week 13, Thursday, 29 march 2018</p> <ul style="list-style-type: none"> <li>• 5.2.2. coffee-Botanical description</li> </ul>
<p>Week 13, Friday, 31 march 2018</p> <ul style="list-style-type: none"> <li>• 5.2.3. Rubber-types, Hevea</li> </ul>
<p>Week 14</p> <p>Chapter 6: Sugar</p>
<p>Week 14, Monday, 2 April 2018</p> <ul style="list-style-type: none"> <li>• 6.1.1. sugarcane description</li> </ul>
<p>Week 14, Tuesday, 3 April 2018</p> <ul style="list-style-type: none"> <li>• 6.1.2. Timber yielding plants-timber and wood</li> </ul>
<p>Week 14, Wednesday, 4 April 2018</p> <ul style="list-style-type: none"> <li>• 6.1.3. types of wood-teak, sal, shisham</li> </ul>

<p>Week 14, Thursday, 5 April 2018</p> <ul style="list-style-type: none"> <li>• 6.1.4. chir, bamboos-uses and description</li> </ul>
<p>Week 14, Friday, 6 April 2018</p> <ul style="list-style-type: none"> <li>• 6.2.1. Biofuels, bioenergy mass</li> </ul>
<p>Week 14, Saturday, 7 April 2018</p> <ul style="list-style-type: none"> <li>• 6.2.2. Bioenergy discussions</li> </ul>
<p>Week 15</p>
<p>Week 15, Monday, 9 April 2018</p> <p>Unit test –II (Paper II)</p>
<p>Week 15, Tuesday, 10 April 2018</p> <ul style="list-style-type: none"> <li>• Question discussion in unit test</li> </ul>
<p>Week 15, Wednesday, 11 April 2018</p> <ul style="list-style-type: none"> <li>• Seminar on assignment</li> </ul>
<p>Week 15, Thursday, 12 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on cereals</li> </ul>
<p>Week 15, Friday, 13 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on pulses</li> </ul>
<p>Week 16</p>
<p>Week 16, Monday, 16 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on vegetables</li> </ul>
<p>Week 16, Tuesday, 17 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on fibres</li> </ul>
<p>Week 16, Wednesday, 18 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on vegetable oils</li> </ul>
<p>Week 16, Thursday, 19 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on spices</li> </ul>
<p>Week 16, Friday, 20 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on medicinal plants</li> </ul>
<p>Week 16, Saturday, 21 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on beverages</li> </ul>
<p>Week 17</p> <p>Chapter 10: Proteins</p>
<p>Week 17, Monday, 23 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on rubber</li> </ul>
<p>Week 17, Tuesday, 24 April 2018</p> <ul style="list-style-type: none"> <li>• Discussions on sugar</li> </ul>
<p>Week 17, Wednesday, 25 April 2018</p>

- Discussions on timber yielding plants

Week 17, Thursday, 26 April 2018

- Discussions on energy plantation and biofuels

Week 17, Friday, 27 April 2018

- assignments

Week 17, Saturday, 28 April 2018

- assignments