St. John College, Dimapur, Nagaland

Department of Botany

Course outcome of semesters for B.Sc General and Honours course

**Semester 5**

**General Course**

<table>
<thead>
<tr>
<th>Course No</th>
<th>BOT – 501</th>
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<tbody>
<tr>
<td>Course Name</td>
<td>Biochemistry and Plant Breeding</td>
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<table>
<thead>
<tr>
<th>Unit</th>
<th>Unit Title</th>
<th>Course Outcome</th>
<th>Credit</th>
<th>Total Credit</th>
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</thead>
</table>
| 1    | Concept of biochemistry | • What is a biomolecules  
• Hierarchy of biomolecules  
• Bioenergetics  
• ATP, its structure, formation and function. | 4 | 5 |
| 2    | Biomolecules (Carbohydrates) | • Reducing and non reducing sugars.  
• Classification of sugars.  
• Mutarotation and inversion of sugars.  
• Sugar derivatives.  
• How sugars are synthesised and degraded in an organism. | 4 | 5 |
| 3    | Biomolecules (Lipids and Nucleic acids) | • Lipids and its classification.  
• Structure of lipids.  
• Saturated and unsaturated fatty acids.  
• How biosynthesis of fatty acids takes place in body.  
• Nitrogenous bases, nucleosides, nucleotides.  
• How different components of nucleic acids are combined.  
• Structure, types and properties of DNA.  
• Structure of tRNA.  
• Denaturation and renaturation of DNA. | 4 | 5 |
| 4    | Biomolecules (Proteins) | • What makes a protein.  
• Structure and classification of amino acids.  
• Physical and chemical nature of amio acids.  
• Different types of proteins | 4 | 5 |
<table>
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<tr>
<th>Course No</th>
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<th>Practical relation to Theory</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BOT – 502</td>
<td>Practical related to theory</td>
<td>1</td>
<td>5</td>
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According to structure.
- Conformation and denaturation of Proteins.

- Principles of plant breeding.
- Techniques of plant breeding.
- Types of plant breeding.