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## Course Contents for Subjects with Code: BIO

This document only contains details of courses having code **BIO**.



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Code	Subject Title	Cr. Hrs	Semester
BIO-111	Biology-I	3	II
Year	Discipline		
1	Chemistry-II		

Biological Methods, Principles of Cellular Life, Chemical Basis, Structure and Function, Principles of Metabolism, Energy Acquisition, Principles of Inheritance, Mitosis and Meiosis, Chromosomes, Observable Inheritance Patterns, DNA Structure and Function, RNA and Proteins, Genes, Genetic, Engineering and Biotechnology, Biodiversity, Fundamental Concept of Biodiversity, One or two examples of each of the following from commonly, found organism, Prions, Viruses, Bacteria, Protistans, Algae, Fungi, Plants, Crops, Animals, Invertebrates, Vertebrates

**Recommended Books:**

1. Roberts, M.M., Reiss and G. Monger. 2000. Advanced Biology, Nelson.
  2. Starr, C, and R, Taggart, 2001. Biology: The Unity and Diversity of Life Brooks and Cole.
  3. Campbell, N.A., J.B, Reece, L.G. Mitchell, M.R, Taylor. 2001. Biology: Concepts and Connections. Prentice-Hall
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Code	Subject Title	Cr. Hrs	Semester
BIO-112	Biology (General Studies)	3	II
Year	Discipline		
1	Applied Psychology		

**Theory:**

Biology and its major fields, Cell organization and division, Enzymes as catalysts, Genes and Chromosomes, DNA structure and function, Mendelian inheritance, Variety of Living organisms, Plant diversity, Animal diversity, Evolution and its theories, Animal reproductive and development systems, Ethology, Human central and peripheral nervous system, Major human endocrine glands, Role of nutrition, Principles of biotechnology and applications, Ecosystem, Population and Environment.

**Lab:**

- Microscope- Principles and handling
- Cell structure and function
- Diffusion/Osmosis
- Mitosis/Meiosis
- Study of various types of Stomata and appendages
- Survey of Plant kingdom
- Survey of Animal kingdom
- Water / Air pollution

**Recommended Books:**

Brooker, R., Widmaier, E., Graham, L and Stiling, P. 2010. Biology, 2<sup>nd</sup> Edition, McGraw-Hill Science/Engineering/Math.

Ravan, P., Johnson, G., Mason, K and Losos, J. 2007. Biology, 8<sup>th</sup> Edition, McGraw-Hill Science/Engineering/Math.

Reece, J.B., Urry, L.A., Cain, M.L and Wasserman, S.A. 2010. Campbell Biology, 9<sup>th</sup> Edition, Benjamin Cummings.

Mader, S.S. 2009. Biology, 10<sup>th</sup> Edition, McGraw-Hill Science/Engineering/Math.

Campbell, N.A., Reece, J.B., Taylor, M.R and Simon, E.J. 2008. Biology: Concepts and Connections, 6<sup>th</sup> Edition, Benjamin Cummings.



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Code	Subject Title	Cr. Hrs	Semester
BIO-211	Biology-II	3	III
Year	Discipline		
2	Chemistry-II		

Myths and Realities of Evolution, Microevolution, Speciation, Macroevolution, Level of Organization, Plants, Tissues, Nutrition and Transport, Reproduction, Growth and Development

Animals, Tissue, Organ System and Homeostasis, Information Flow and Neuron, Nervous System, Circulation and Immunity, Nutrition and Respiration, Reproduction and Development, Ecology and Behavior, Ecosystems, Biosphere, Social Interactions, Community Interactions, Human Impact on Biosphere, Environment Conservation

**Recommended Books:**

1. Roberts, M.M., Reiss and G. Monger. 2000. Advanced Biology, Nelson.
2. Starr, C, and R, Taggart, 2001. Biology: The Unity and Diversity of Life Brooks and Cole.
3. Campbell, N.A., J.B, Reece, L.G. Mitchell, M.R, Taylor. 2001. Biology: Concepts and Connections. Prentice-Hall.



## BS (4 Years) for Affiliated Colleges

Code	Subject Title	Cr. Hrs	Semester
<b>BIO-212</b>	<b>Biology</b>	<b>3</b>	<b>III</b>
Year	Discipline		
<b>2</b>	Applied Psychology		

### Theory:

Biology and its major fields, Cell organization and division, Enzymes as catalysts, Genes and Chromosomes, DNA structure and function, Mendelian inheritance, Variety of Living organisms, Plant diversity, Animal diversity, Evolution and its theories, Animal reproductive and development systems, Ethology, Human central and peripheral nervous system, Major human endocrine glands, Role of nutrition, Principles of biotechnology and applications, Ecosystem, Population and Environment.

### Lab:

Microscope- Principles and handling  
Cell structure and function  
Diffusion/Osmosis  
Mitosis/Meiosis  
Study of various types of Stomata and appendages  
Survey of Plant kingdom  
Survey of Animal kingdom  
Water / Air pollution

### Recommended Books:

Brooker, R., Widmaier, E., Graham, L and Stiling, P. 2010. Biology, 2<sup>nd</sup> Edition, McGraw-Hill Science/Engineering/Math.  
Ravan, P., Johnson, G., Mason, K and Losos, J. 2007. Biology, 8<sup>th</sup> Edition, McGraw-Hill Science/Engineering/Math.  
Reece, J.B., Urry, L.A., Cain, M.L and Wasserman, S.A. 2010. Campbell Biology, 9<sup>th</sup> Edition, Benjamin Cummings.  
Mader, S.S. 2009. Biology, 10<sup>th</sup> Edition, McGraw-Hill Science/Engineering/Math.  
Campbell, N.A., Reece, J.B., Taylor, M.R and Simon, E.J. 2008. Biology: Concepts and Connections, 6<sup>th</sup> Edition, Benjamin Cummings.

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