

# Curriculum of Biotechnology

## MS Program



**Department of Biotechnology**  
**Kohsar University Murree Pakistan**  
**MS (MASTER OF SCIENCE IN BIOTECHNOLOGY)**  
**PROGRAM STRUCTURE**

No.	Categories	Credit Hours
1.	Course work (08)	24
2.	Research Project + Seminar (02)	06
	<b>Total</b>	<b>30</b>

- Total numbers of Credit hours 30
- Duration 2 years
- Semester duration 16-18 weeks
- Semesters 4
- Course Load per Semester maximum 12 Cr hr/ semester
- Number of courses per semester maximum 4

**Semester wise courses distribution**

<b>1<sup>st</sup> Semester</b>		
S.No.	Courses	Chr
1.	Major-I	3(2,1)
2.	Major-II	3
3.	Compulsory-I	3
4.	Elective-I	3(2,1)
Total subjects : 04		12
<b>2<sup>nd</sup> Semester</b>		
5.	Major-III	3(2,1)
6.	Major-IV	3
7.	Compulsory-II	3
8.	Elective-II	3(2,1)
Total subjects : 04		12
<b>3<sup>rd</sup> &amp; 4<sup>th</sup> Semester</b>		
9.	Research project and Thesis	06

<b>SCHEME OF STUDIES FOR MASTER OF SCIENCE IN BIOTECHNOLOGY (2 YEAR)</b>	
Number of Credits	30 (24 taught + 6 project)
Semester I & II	Taught courses
	Core courses: 12 credit hours Compulsory: 06 credit hours Elective Courses: 06 credit hours
Semester III & IV	Research (Thesis): 06 credit hours

<b>Core courses</b>	<b>Credit hours</b>
BTE511: Principles and Practices in Biotechnology	3
BTE512: Advanced Biotechnology	3(2,1)
BTE513: Advanced Molecular Genetics	3
BTE514: Medical Biotechnology	3(2,1)

#### **List of Compulsory courses**

<b>Core courses</b>	<b>Credit hours</b>
CHM203: Fundamental Biochemistry	3
STA202: Biostatistics	3

#### **Five Course to be taken from the following**

<b>S.No.</b>	<b>Elective courses</b>	<b>Credit hours</b>
1.	BTE515: Advances in Molecular Biology	3(2,1)
2.	BTE516: Advances in Microbiology	3(2,1)
3.	BTE517: Pharmacogenomics	3
4.	BTE518: Gene Expression and Regulation	3(2,1)
5.	BTE519: Plant Cell and Tissue Culture	3
6.	BTE520: Regenerative Medicine	3(2,1)
7.	BTE521: Animal Biotechnology	3(2,1)
8.	BTE522: Protein Engineering	3
9.	BTE523: Gene manipulation	3
10.	BTE524: Cancer Genetics	3
11.	BTE525: General Virology	3
12.	BTE526: Stem Cell and Therapeutic Cloning	3(2,1)
13.	BTE527: Health Biotechnology	3
14.	BTE528: Research Techniques	3(2,1)
15.	BTE529: Biosafety and Bioethics	3
16.	BTE530: Microbial Physiology & Genetics	3
17.	BTE531: Nano Biotechnology	3
	<b>Research Thesis</b>	<b>6 (6,0) Credit Hours</b>