



Integral University, Lucknow
Department of BIOSCIENCES
Study and Evaluation Scheme

Program: M.Sc. Microbiology

Semester I

| S. No. | Course code | Course Title | Type of Paper | Period Per hr/week/sem | | | Evaluation Scheme | | | | Max . Marks | Credit | Total Credits | Attributes | | | | | | | United Nations Sustainable development Goals (SDGs) |
|------------------|-------------|---|---------------|------------------------|---|----|-------------------|----|-------|------|-------------|--------|---------------|---------------|------------------|-------------------|-----------------|------------------------------|-------------|---------------------|---|
| | | | | L | T | P | CT | TA | Total | ES E | | | | Employability | Entrepreneurship | Skill Development | Gender Equality | Environment & Sustainability | Human Value | Professional Ethics | |
| THEORIES | | | | | | | | | | | | | | | | | | | | | |
| 1 | BS441 | General Microbiology | Core | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | ✓ | | ✓ | | | | | |
| 2 | BS442 | Biophysical Methods | Core | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | ✓ | ✓ | ✓ | | | | ✓ | |
| 3 | BS443 | Biomolecules | Core | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | | | | | | | | |
| 4 | BS444 | Microbial Cytology & Genetics | Core | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | | | | | | | | |
| 5 | BS445 | Soil and Agricultural Microbiology | Core | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | | ✓ | ✓ | | ✓ | | | |
| PRACTICAL | | | | | | | | | | | | | | | | | | | | | |
| 6 | BS446 | General Microbiology & Biochemistry Lab | Practical | 0 | 0 | 12 | 40 | 20 | 60 | 40 | 100 | 0:0:6 | 6 | ✓ | | ✓ | | | | | |

| | | | | | | | | | | | | | | | |
|-------|----|----|----|-----|-----|-----|-----|-----|----|----|--|--|--|--|--|
| Total | 15 | 05 | 12 | 240 | 120 | 360 | 240 | 600 | 24 | 26 | | | | | |
|-------|----|----|----|-----|-----|-----|-----|-----|----|----|--|--|--|--|--|

Semester II

| S. No. | Course code | Course Title | Type of Paper | Period Per hr/week/sem | | | Evaluation Scheme | | | | Max. Marks | Credit | Total Credits | Attributes | | | | | | |
|-----------------|---|---|---------------|------------------------|---|---|-------------------|----|-------|-----|------------|--------|---------------|---------------|------------------|-------------------|-----------------|------------------------------|-------------|---------------------|
| | | | | L | T | P | CT | TA | Total | ESE | | | | Employability | Entrepreneurship | Skill Development | Gender Equality | Environment & Sustainability | Human Value | Professional Ethics |
| THEORIES | | | | | | | | | | | | | | | | | | | | |
| 1 | BS451 | Microbial Metabolism | Core | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | | | | | ✓ | | |
| 2 | MT412 | Bioinformatics and Biostatistics | Core | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | ✓ | | ✓ | | | | |
| 3 | BS452 | Molecular Biology | Core | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | | | ✓ | | | | |
| 4 | BS453 | Industrial Microbiology & Fermentation Technology | Core | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | ✓ | ✓ | ✓ | | | ✓ | |
| 5 | Elective courses (Any one of the following) | | Elective | 3 | 1 | 0 | 40 | 20 | 60 | 40 | 100 | 3:1:0 | 4 | | | | | | | |
| | BS454 | Microbial Diversity | | | | | | | | | | | | | | | ✓ | | | |



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|------------------|-------|---|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|-----------|-----------|---|---|---|---|---|
| | BS455 | Mycology and Plant Microbe Interactions | | | | | | | | | | | | | | | |  |
| | BS412 | Enzymology & Enzyme Kinetics | | | | | | | | | | | | | | | |  |
| PRACTICAL | | | | | | | | | | | | | | | | | | |
| 6 | BS456 | Applied Microbiology and Bioinformatics Lab | Practical | 0 | 0 | 12 | 40 | 20 | 60 | 40 | 100 | 0:0: 6 | 6 | √ | √ | √ |  | |
| 7 | BS419 | Educational/Industrial tour | | | | | | | | | S/U | | | | √ | √ |  | |
| Total | | | | 15 | 05 | 12 | 240 | 120 | 360 | 240 | 600 | 24 | 26 | | | | | |

Note: The students of M.Sc. Microbiology have to undergo the educational/Industrial tour in Microbiology based industry/research institution for practical awareness at the end of 2nd semester. [S- satisfactory/ U-unsatisfactory]