

# Swarnim Startup & Innovation University

## SWARRNIM SCIENCE COLLEGE

### Master of Science (M.Sc.) Biotechnology

#### Masters- Teaching syllabus & examination pattern

| Semester 1 |              |                                    |        |                          |     |           |       |             |         |     |         |          |         |    |         |       |
|------------|--------------|------------------------------------|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| Sr. No.    | Subject Code | Subject Name                       | Credit | Teaching scheme per week |     |           |       | Examination |         |     |         |          |         |    |         | Total |
|            |              |                                    |        | Th                       | Tut | Practical | Total | Internal    |         |     |         | External |         |    |         |       |
|            |              |                                    |        |                          |     |           |       | Th          | PASSING | Pr  | PASSING | Th       | PASSING | Pr | PASSING |       |
| 1          | 256010101    | Gene Structure and Function        | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 2          | 256010102    | Bioinstrumentation                 | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 3          | 256010103    | Microbial Diversity                | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 4          | 256010104    | Biogeohydratechnology and Biofuels | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 5          | 256010105    | Practicals                         | 8      | -                        | -   | 12        | 12    | -           | -       | 200 | 80      | -        | -       | -  | -       | 200   |
|            |              | Total                              | 24     | 16                       | -   | 12        | 28    | 120         | -       | 200 | -       | 280      | -       | -  | -       | 600   |

| Semester 2 |              |                                                |        |                          |     |           |       |             |         |     |         |          |         |    |         |       |
|------------|--------------|------------------------------------------------|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| Sr. No.    | Subject Code | Subject Name                                   | Credit | Teaching scheme per week |     |           |       | Examination |         |     |         |          |         |    |         | Total |
|            |              |                                                |        | Th                       | Tut | Practical | Total | Internal    |         |     |         | External |         |    |         |       |
|            |              |                                                |        |                          |     |           |       | Th          | PASSING | Pr  | PASSING | Th       | PASSING | Pr | PASSING |       |
| 1          | 256010201    | Microbial Genetics                             | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 2          | 256010202    | Immunology                                     | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 3          | 256010203    | Bioprocess Technology                          | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 4          | 256010204    | Tools and techniques in synthetic microbiology | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 5          | 256010205    | Practicals                                     | 8      | -                        | -   | 12        | 12    | -           | -       | 200 | 80      | -        | -       | -  | -       | 200   |
|            |              | Total                                          | 24     | 16                       | -   | 12        | 28    | 120         | -       | 200 | -       | 280      | -       | -  | -       | 600   |

  
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| Semester 3 |              |                                                      |        |                          |     |           |       |             |         |     |         |          |         |    |         |       |
|------------|--------------|------------------------------------------------------|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| Sr. No.    | Subject Code | Subject Name                                         | Credit | Teaching scheme per week |     |           |       | Examination |         |     |         |          |         |    |         | Total |
|            |              |                                                      |        | Th                       | Tut | Practical | Total | Internal    |         |     |         | External |         |    |         |       |
|            |              |                                                      |        |                          |     |           |       | Th          | PASSING | Pr  | PASSING | Th       | PASSING | Pr | PASSING |       |
| 1          | 256010301    | Microbial Biotechnology                              | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 2          | 256010302    | Enzymology                                           | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 3          | 256010303    | r-DNA Technology                                     | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 4          | 256010304    | Animal Tissue culture & pharmaceutical Biotechnology | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 5          | 256010305    | Practicals                                           | 8      | -                        | -   | 12        | 12    | -           | -       | 200 | 80      | -        | -       | -  | -       | 200   |
|            |              | Total                                                | 24     | 16                       | -   | 12        | 28    | 120         | -       | 200 | -       | 280      | -       | -  | -       | 600   |

| Semester 4 |              |                             |        |                          |     |           |       |             |         |     |         |          |         |    |         |       |
|------------|--------------|-----------------------------|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| Sr. No.    | Subject Code | Subject Name                | Credit | Teaching scheme per week |     |           |       | Examination |         |     |         |          |         |    |         | Total |
|            |              |                             |        | Th                       | Tut | Practical | Total | Internal    |         |     |         | External |         |    |         |       |
|            |              |                             |        |                          |     |           |       | Th          | PASSING | Pr  | PASSING | Th       | PASSING | Pr | PASSING |       |
| 1          | 256010401    | Plant Biotechnology         | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 2          | 256010402    | Environmental Biotechnology | 4      | 4                        | -   | -         | 4     | 30          | 12      | -   | -       | 70       | 25      | -  | -       | 100   |
| 3          | 256010403    | Practicals                  | 4      | -                        | -   | 6         | 6     | -           | -       | 100 | 40      | -        | -       | -  | -       | 100   |
| 4          | 256010404    | Dissertation                | 12     | -                        | -   | 12        | 12    | -           | -       | 300 | 120     | -        | -       | -  | -       | 300   |
|            |              | Total                       | 24     | 8                        | -   | 18        | 26    | 60          | -       | 400 | -       | 140      | -       | -  | -       | 600   |



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