

Masters Degree - Curriculum

First Year

M. Sc. Biochemistry	M.Sc. Biotechnology	M.Sc. Microbiology
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Semester I

Cell Biology	Cell Biology	Cell Biology
Molecular Biology	Molecular Biology	Molecular Biology
Metabolism	Metabolism	Metabolism
Basic Immunology	Basic Immunology	Basic Immunology
Human Physiology	General and Applied Microbiology	General and Applied Microbiology
Laboratory I	Laboratory I	Laboratory I
Seminar I	Seminar I	Seminar I

Semester II

Neurobiology	Industrial Microbiology & Fermentation Technology	Industrial Microbiology & Fermentation Technology
Bioanalytical Techniques	Bioanalytical Techniques	Bioanalytical Techniques
Genetic Engineering	Genetic Engineering	Genetic Engineering
Reproductive Physiology	Reproductive Physiology	Reproductive Physiology
Elective I	Elective I	Elective I
Seminar II	Seminar II	Seminar II
Laboratory II	Laboratory II	Laboratory II

Masters Degree - Curriculum

Second Year

M. Sc. Biochemistry	M.Sc. Biotechnology	M.Sc. Microbiology
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Semester III

Biochemical Toxicology	Molecular Microbial Physiology	Molecular Microbial Physiology
Cancer Biology	Animal Biotechnology	Medical Microbiology & Virology
Endocrinology	Cancer Biology	Agriculture & Environmental Microbiology
Animal Biotechnology	Genomics and Proteomics	Microbial Diversity & Systematics
Elective II	Elective II	Elective II
Laboratory III	Laboratory III	Laboratory III
Dissertation Tutorials	Dissertation Tutorials	Dissertation Tutorials
Research Methods	Research Methods	Research Methods
Summer Internship	Summer Internship	Summer Internship

Semester III

Dissertation/Industry internship	Dissertation/Industry internship	Dissertation/Industry internship
Comprehensive Viva voce	Comprehensive Viva voce	Comprehensive Viva voce

During summer, supplementary learning activities and/or practical training are planned and students have to compulsorily take up summer internships. Dissertation projects are also undertaken over the last two semesters when students undergo rigorous research training under the guidance of the faculty members and are exposed to modern high-end instruments.

List of Elective Courses

- Advanced Immunology
- Cancer Biology
- Genomics and Proteomics
- Human Genetics
- Microbial Diversity and Systemics
- Microbial Ecology
- Microbial Genetics
- Reproductive Physiology
- Structural Biology
- Vaccinology
- Neurobiology
- Agriculture & Environmental Microbiology

Supplementary Courses

- Basics of Animal Physiology
- Basics of Microbiology
- Professional English
- Social Extension Activities
- Professional Development and Resume Writing
- Dissertation tutorial
- Interpersonal and Networking Skills

Pedagogy

The Institute makes use of an appropriate mix of pedagogical tools to train the students to handle professional responsibilities. These include lectures by an appropriate mix of in-house and visiting faculty, expert lectures, discussions, seminars, project assignments, and a visit to industries. Continuous evaluation and counseling are important parts of the academic program.

The Approach to Learning:

Rigorous coaching and continuous evaluation through:

- Outcome-Based Education through Outcome-Based Teaching and Learning, Curriculum, and Assessment
- Credit-based Semester System with weightage of different components of study
- Learning through Classroom Teaching, Practical Work, Industry Visits, Project Work, and Dissertation Work
- Academic Rigor and Innovative Pedagogical Tools
- Faculty Guidance and Advisory System with faculty as counselors to students
- Continuous Enhancement of Communication Skills
- Continuous up-gradation of state-of-the-art knowledge and skills
- Active participation of students in creative co-curricular activities

Course and Assessment

Nirma University has provided a credit-based semester system. It is devised to motivate students for systematic and continuous study. Term assignments, laboratory, and project work are given great importance and are continuously assessed. In addition to continuous evaluation, Semester End Examinations are conducted for theory subjects.