



MSc (Applied Microbiology) Curriculum



KIIT School of Biotechnology
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M.Sc. Applied Microbiology

COURSE CURRICULUM

Semester-I

Code	Subject	L	T	P	Credits	Exam Duration (h)
BT4201	Fundamentals of Microbiology & Microbial Diversity	2	1	0	3	3
BT4101	Biochemistry	2	1	0	3	3
BT4109	Cell Biology	2	1	0	3	3
BT4203	Microbial Genetics	2	1	0	3	3
BT4107	Biostatistics	2	1	0	3	3
BT4191	Microbiology Lab	0	0	6	4	3
BT4193	Biochemistry & Cell Biology Lab	0	0	6	4	3
BT4181	Computing Lab	0	0	3	2	3
TOTAL		10	5	15	25	

Non-credit course: Public Speaking and Personality development

Semester-II

Code	Subject	L	T	P	Credits	Exam Duration (h)
BT4104	Immunology	2	1	0	3	3
BT4202	Microbial Metabolism	2	1	0	3	3
BT4204	Biophysics	2	1	0	3	3
BT4206	Molecular Biology and Gene Manipulation	2	1	0	3	3
BT4208	Food & Agricultural Microbiology	2	1	0	3	3
BT4194	Immunology lab	0	0	6	4	3
BT4292	Molecular Biology & Microbial Genetics Lab	0	0	6	4	3
BT4182	Scientific Writing and Communication Skills	0	0	3	2	-
TOTAL		10	5	12	25	

Summer Training (Optional): students may undergo summer training at SBT or other Indian institute

Semester-III

Code	Subject	L	T	P	Credits	Exam Duration (h)
BT5201	Industrial Microbiology & Bioprocess engineering	2	1	0	3	3
BT5203	Clinical Microbiology	2	1	0	3	3
BT5205	Genomics & Bioinformatics	2	1	0	3	3
BT5207	Environmental Microbiology	2	1	0	3	3
BT5209	Advanced Microbial Technology	2	1	0	3	3
BT5291	Clinical Microbiology Lab	0	0	6	4	3
BT5293	Industrial Microbiology & Bioprocess Lab	0	0	6	4	3
BT5181	Seminar	0	0	3	2	-
TOTAL		10	5	12	25	

Note: Industrial/educational tour will be organized during III Semester

Semester-IV

Code	Subject	L	T	P	Credits	Exam Duration (h)
BT5292	Dissertation*	0	0	36	24	-
TOTAL				36	24	

* Dissertation duration of 5-6 months in any National or International laboratory

Credit points: Theory paper: 1 credit \cong 1 contact h/week; Lab work: 1 credit \cong 1.5 contact h/week

1. EVALUATION:

All subject items will be evaluated on cent percent points. The break-up for each category is:

➤ **Theory Subjects:** Evaluation will be on continuous and end-semester examination basis with 60% points for end-semester examination and 40% points on continuous evaluation. For continuous evaluation one mid-sem examination and two quizzes or tests/ assignments/seminars have to be conducted with point distribution as: 25% for mid-sem, 15% for quizzes / assignments /seminars.

➤ **Practical Subjects:** Evaluation will be on continuous and end-semester examination basis with distribution of points as, 50% for continuous internal evaluation & 30% for the experiments conducted and 20% for grand viva during end-semester examination.

Note: 100 marks for practicals will be divided into: 50 (internal evaluation) and 20 (Grand Viva) and 30 (Major experiment and spotting)

- 50 marks for internal evaluation are evaluated as: Regularity: 10; Record File: 10; Basics: 10; Technique/execution: 10; Analysis: 10

- Grand Viva will consist of a jury of faculty members (including subject teachers) + 1 external (non subject teacher). 20 marks will be evaluated as: Fundamentals 5; Experimental analysis: 10; Presentation: 5.

- 30 marks in practical's are for one major experiment (20 marks) and spotting/identification (10)

➤ **Evaluation of Seminar:** Students will choose any scientific original research paper according to their choice (impact factor not less than 4.0). They have to do a critical analysis of the paper in the form of a presentation in front of two evaluators. The marks will be given as - chosen article and preparation of slide -25; presentation skills- 25; knowledge of the topic-25; Defence-25.

➤ **Dissertation:** To be evaluated by internal as well as external examiners. Distribution of points allocated is: 60% for work done, 20% for report and 20% for seminar and *viva*.

2. GRADING & PERFORMANCE INDEX:

➤ **Grading:** A seven point grading system on a base of 10 will be followed for grading in a subject item and thesis/dissertation.

➤ **SGPA:** Semester Grade Point Average (SGPA) is the credit weighted average of grade points earned in all the subject items in a Semester. It indicates the performance level of a student in a particular Semester.

➤ **CGPA:** Cumulative Grade Point Average (CGPA) is the credit weighted average of grade points earned in all the subject items up to the last completed Semester starting from the 1st Semester. It indicates the current performance level of a student.

3. ATTENDANCE:

If a student's attendance in a subject item falls below 75%, he/she will be debarred from appearing in the end-semester examination in that subject item.

4. PROMOTION:

A student has to pass in all the individual paper with minimal grade 'D'. If a student fails during one academic year (two semesters) in more than five subjects he/she will not be promoted to next year and will be demoted to previous year. If a student fails in a semester, back paper examination will be conducted in the next year academic session. If a student fails in the 3rd semester, a back paper examination will be scheduled for him/her during end of 4th Semester. If a student fails in the project work, he/she will be re-evaluated after six months time.

5. DEGREE REQUIREMENT:

For award of the degree, the student has to secure minimum CGPA of 5.5 and should have secured minimal grade D in all the subjects.