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Centre for Development
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[OBE DESIGN- MICROBIOLOGY DEPARTMENT]

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PREFACE

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OUTCOME BASED EDUCATION

Faculty of Science & Technology

Department of Microbiology

1. Mission:

The mission statement describes, 'what organization is?' (what we are?). The mission statement should answer following four questions.

- i. Why organization (Department) exists?
- ii. What is the purpose of being in existence?
- iii. What are the organizational core values? And
- iv. How the organization is different /unique as compared to similar others?

The mission statement can be written in bulleted points or in the form of statement.

Mission Statement

- To offer post-graduation and research program in the domain of microbiology.
- The mission is to produce students with global competencies in the subject required in industry, business and profession
- The students will be competitive for achieving various fellowships in India and Abroad.
- To produce a students with social commitments.
- To contribute the society to solve the microbiology problems.

2. Vision:

The vision statement describes, "What organization wants to be?"

The statement should not be vague/ ambiguous. It must clearly describe how the organization looks like in (say) 7 years/ 10 years /13 years. The statement should be enough specific to guide, direct the organization about its future scenario/picture.

Vision Statement

- The vision of the department is to provide quality oriented teaching that may bring out the potentiality of the students. Besides the specific visions of the department are as follows: We want to make our Microbiology laboratory well equipped, well-known in India for scientific research, research workers should perform quality work to be published in high impact factor journal. Our classroom should be well connected to different reputed institutes in India and abroad through internet.

- Research activities in the department would be strengthened. For this, the department is planning to emphasis on research activities with the support from the head of the university. The faculty members will undertake Minor/Major research projects with financial assistance from UGC, DBT, DST and other funding agencies. For this, we would make the maximum use of research activities. The department is planning to sign MoUs with Indian Universities/Institutions to establish cooperation in the areas of teaching, research and training.

The mission and vision of the organization help in preparation of strategic plan.

3. Title of the Program (s):

a. Master of Microbiology

4. Program Educational Objectives:

The program educational objectives (PEO) are the statement that describes the career and professional achievement after the program of studies (graduation/ post-graduation). The PEO s are driven form question no. (ii) of the Mission statement (What is the purpose of organization). The PEOs can be minimum three and maximum five.

5. Program Outcomes:

The program outcomes (PO) are the statement of competencies/ abilities. POs are the statement that describes the knowledge and the abilities the graduate/ post-graduate will have by the end of program studies.

The sample POs for different programs are stated in Annexure-A.

6. Course- Program outcome Matrix:

The Program Outcomes are developed through the curriculum (curricular/co-curricular-extra-curricular activities). The program outcomes are attained through the course implementation. As an educator, one must know, “to which POs his/her course in contributing?”. So that one can design the learning experiences, select teaching method and design the tool for assessment. Hence, establishing the Corse-PO matrix is essential step in the OBE. The course-program outcomes matrix indicates the co-relation between the courses and program outcomes. The CO-PO matrix is the map of list of courses contributing to the development of respective POs.

The template is provided in the below table.

Course Title	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
C101								
C102								

.								
.								
C201								
C202								
.								
C301								
.								
.								
PROJECT								

7. Course Outcomes (for all courses):

The course outcomes are the statement that describes the knowledge & abilities developed in the student by the end of course (subject) teaching. The focus is on development of abilities rather than mere content. There can be 5 to 7 course outcomes of any course. These are to be written in the specific terms and not in general. The list of suggested verbs is the part of **Annexure-B** attached herewith.

8. Set Target levels for Attainment of Course Outcomes:

The course outcome attainment is assessed in order to track the graduates’ performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates’ abilities through appropriate learning & teaching strategies. In order to assess students’ performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment are measured/calculated. In order to calculate the program outcome attainment, the course outcome attainment is calculated. Prior to that, the course-program outcome mapping is done.

The set target level is either decided by the department/course coordinator or it can be set w.r.t. the passing % trend for the respective course.

9. Set Target level for Attainment of Program Outcomes:

The program outcome attainment is assessed in order to track the graduates’ performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates’ abilities through appropriate learning & teaching strategies. In order to assess students’ performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment and program outcome attainment is measured/calculated. The program outcome attainment is governed by curricular, co-curricular and extra-curricular activities including the stakeholders’ participation. The direct method and indirect method is adopted to calculate the PO attainment. The direct method implies the attainment by course outcomes contributing to respective program outcomes. And indirect method is the satisfaction/feed-back survey of stakeholders. In order to calculate the program outcome attainment, the course outcome attainment is calculated. Prior to that, the course-program outcome mapping is done.

The set target level is the set benchmark to ensure the continuous improvements in the learners/ graduates’ performance.

10. Course Attainment Levels:

- a. CO attainment is defined/set at three levels;
- b. The CO attainment is based on end term examination assessment and internal assessment;
- c. The Co attainment is defined at three levels in ascending order-
 - i. e.g. For end term and internal examination;
 - ii. Level-1: 40% students scored more than class average
 - iii. Level-2: 50% students score more than class average;
 - iv. Level-3: 60% students score more than class average.
- d. The target level is set (e.g. Level-2). It indicates that, the current target is level-2; 50% students score more than class average. The CO attainment is measured and the results are obtained. Based on the results of attainment, the corrective measures/remedial action are taken.
- e. CO Attainment= 80% (Attainment level in end term examination) + 20% (Attainment level in internal examination). [The example will be discussed in the meeting].

11. Program attainment Level:

- a. PO attainment is defined at five levels in ascending order;
- b. The PO attainment is based on the average attainment level of corresponding courses (Direct Method) and feed-back survey (Indirect method);
- c. The PO attainment levels are defined / set as stated below;
 - i. Level-1: Greater than 0.5 and less than 1.0 (0.5>1)- Poor
 - ii. Level-2: 1.0>1.5-Average
 - iii. Level-3: 1.5>2.0-Good
 - iv. Level-4: 2.0>2.5-Very Good
 - v. Level-5: 2.5>3.0 -Excellent
- d. The PO attainment target level is set/defined (say, Level-4). It implies that, the department is aiming at minimum level-4 (very good) in the performance of abilities by the graduates. Based upon the results of attainment, the remedial measures are taken;
- e. PO Attainment= 80% (Average attainment level by direct method) + 20% (Average attainment level by indirect method).

12. The Results of CO Attainment:

Table No. 1.0: CO Attainment Level

Course Code	Course Title	Target level	Attainment	Fully Attained/Not attained	Remedial measures
C101					
.					
C201					
.					

C301

Project

13.The Results of PO Attainment:

Table No. 2.0 PO Attainment Level

PO/PSO number	Description of PO/PSO	Attainment level	Target level	Fully attained/ Not Attained	Remedial Measures

14. Planned Actions for Course Attainment:

15.Planned Actions for Program Outcome Attainment: