Kanpur Institute of Technology, Kanpur		
Common Data Input Sheet		
Semester: III	**Name of the Faculty:Dr. Neeraj Mishra**	
Subject Code: KBT 302	**Total No. of Students: 21**	**Subject Name:Microbiology & Immunology**

CO DESCRIPTION TABLE	
CO LIST	**DESCRIPTION**
CO1	Identify, culture and preserve microorganisms and determine the growth of microrganisms.
CO2	Understand bacterial genome and recombination processes, nitrogen fixation process, bacterial photosynthesis and structure of viruses.
CO3	Identify the major cells, molecules and tissues which comprise the innate and adaptive immune system.
CO4	Understand the basics immunological processes, the concepts of Major Histocompatibility Complex and Complement system and to apply the principles of immunotechniques.
CO5	Distinguish between useful & harmful microorganisms, their applications in the area of environmental microbiology. Understand various bacterial, protozoan and viral diseases.

CO-PO Matrix

S.No.	CO/PO	STATUS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
1	CO1	A	2	3	3	2	1	-	-	-	-	2	-	2	2	2	3	2	-	-
2	CO2	A	2	2	2	2	1	-	-	-	-	2	-	2	2	2	2	2	-	-
3	CO3	A	2	3	3	2	2	-	-	-	-	2	-	2	2	2	2	3	-	-
4	CO4	A	3	3	3	2	2	-	-	-	-	2	-	2	2	2	2	3	-	-
5	CO5	A	2	3	3	2	2	-	-	-	-	2	-	2	2	2	2	2	-	-

(Please Fill up 'NA' in STATUS COLUMN if any CO is NOT APPLICABLE)

Kanpur Institute of Technology, Kanpur		
Assessment Sheet for PU		
Semester: III	**Name of the Faculty:Dr. Neeraj Mishra**	**Subject Code: KBT 302**

CO1	Identify, culture and preserve microorganisms and determine the growth of microrganisms.
CO2	Understand bacterial genome and recombination processes, nitrogen fixation process, bacterial photosynthesis and structure of viruses.
CO3	Identify the major cells, molecules and tissues which comprise the innate and adaptive immune system.
CO4	Understand the basics immunological processes, the concepts of Major Histocompatibility Complex and Complement system and to apply the principles of immunotechniques.
CO5	Distinguish between useful & harmful microorganisms, their applications in the area of environmental microbiology. Understand various bacterial, protozoan and viral diseases.

S.No	SEC	Roll No	Student Name	Total Present Status	Internal CO marks	Out of	CO attained APPLICABLE			
							CO	AL:1	AL:2	AL:3
Distribution of Marks				**21**	**50**	**50**	**50**	**<40%**	**>=40% & <60%**	**>=60%**
1	A	2001650540002	ARYAN SINGH	P	47	47	47	0	0	1
2	A	2001650540003	AYUSHI SINGH	P	44	44	44	0	0	1
3	A	2001650540004	DEEPAK YADAV	P	23	23	23	0	1	0
4	A	2001650540005	DEEPIKA MISHRA	P	41	41	41	0	0	1
5	A	2001650540006	DIPIKA	P	37	37	37	0	0	1
6	A	2001650540007	DURGESH KUMAR	P	44	44	44	0	0	1
7	A	2001650540008	HIMANSHU PATHAK	P	32	32	32	0	0	1
8	A	2001650540009	ISTAKHAR ANSARI	P	40	40	40	0	0	1
9	A	2001650540010	KRITIKA SONKAR	P	49	49	49	0	0	1
10	A	2001650540011	MANJEET CHAUDHARY	P	30	30	30	0	0	1
11	A	2001650540012	NIKITA YADAV	P	49	49	49	0	0	1
12	A	2001650540013	PRATISTHHA SINGH	P	49	49	49	0	0	1
13	A	2001650540014	RIMJHIM SRIVASTAVA	P	49	49	49	0	0	1
14	A	2001650540015	RITIK PATEL	P	37	37	37	0	0	1
15	A	2001650540016	SAUMYA PRIYA GAUTAM	P	43	43	43	0	0	1
16	A	2001650540017	SHIKHA SINGH	P	42	42	42	0	0	1
17	A	2001650540018	SHIPRALI DWIVEDI	P	48	48	48	0	0	1
18	A	2001650540019	SHIRIN HASHMI	P	49	49	49	0	0	1
19	A	2001650540020	SHIVAM KUMAR	P	37	37	37	0	0	1
20	A	2001650540021	SIMRAN RAWAT	P	50	50	50	0	0	1
21	A	2001650540022	TEHREEM JABEEN	P	49	49	49	0	0	1
						Total		**0**	**1**	**20**
						% Student	**CO**	**0**	**4.761905**	**95.23809524**
						% CO attained		**98.41**		

Kanpur Institute of Technology, Kanpur	
Assessment Sheet for Feedback	
Semester: III	**Name of the Faculty:Dr. Neeraj Mishra**
Subject Code: KBT 302	**Subject Name:Microbiology & Immunology**

CO1	Identify, culture and preserve microorganisms and determine the growth of microrganisms.
CO2	Understand bacterial genome and recombination processes, nitrogen fixation process, bacterial photosynthesis and structure of viruses.
CO3	Identify the major cells, molecules and tissues which comprise the innate and adaptive immune system.
CO4	Understand the basics immunological processes, the concepts of Major Histocompatibility Complex and Complement system and to apply the principles of immunotechniques.
CO5	Distinguish between useful & harmful microorganisms, their applications in the area of environmental microbiology. Understand various bacterial, protozoan and viral diseases.

Total Students	**21**

Course Outcomes					**CO1 Feedback**	**CO2 Feedback**	**CO3 Feedback**	**CO4 feedback**	**CO5 feedback**
CO1	**CO2**	**CO3**	**CO4**	**CO5**	**APPLICABLE**	**APPLICABLE**	**APPLICABLE**	**APPLICABLE**	**APPLICABLE**
A	**A**	**A**	**A**	**A**					
No of students in option1 (3)					14	15	5	7	3
No. of students for option2 (2)					6	5	11	7	5
No. of students in option3 (1)					1	1	5	7	13
No. of students in option4 (0)					0	0	0	0	0
					21	21	21	21	21

Kanpur Institute of Technology, Kanpur

Assessment Sheet for UNIVERSITY

Semester: III	**Name of the Faculty:Dr. Neeraj Mishra**
Subject Code: KBT 302	**Subject Name:Microbiology & Immunology**

CO1	Identify, culture and preserve microorganisms and determine the growth of microrganisms.
CO2	Understand bacterial genome and recombination processes, nitrogen fixation process, bacterial photosynthesis and structure of viruses.
CO3	Identify the major cells, molecules and tissues which comprise the innate and adaptive immune system.
CO4	Understand the basics immunological processes, the concepts of Major Histocompatibility Complex and Complement system and to apply the principles of immunotechniques.
CO5	Distinguish between useful & harmful microorganisms, their applications in the area of environmental microbiology. Understand various bacterial, protozoan and viral diseases.

S.No	SEC	Roll No	Student Name	Total Present Status	From University	Out of	UNIVERSITY ATTAINTMENT APPLICABLE		
							AL:1	AL:2	AL:3
Distribution of Marks				**21**	**100**	**100**	**<40%**	**>=40% & <60%**	**>=60%**
1	A	2001650540002	ARYAN SINGH	P	50	50	0	1	0
2	A	2001650540003	AYUSHI SINGH	P	60	60	0	0	1
3	A	2001650540004	DEEPAK YADAV	P	14	14	1	0	0
4	A	2001650540005	DEEPIKA MISHRA	P	57	57	0	1	0
5	A	2001650540006	DIPIKA	P	50	50	0	1	0
6	A	2001650540007	DURGESH KUMAR	P	34	34	1	0	0
7	A	2001650540008	HIMANSHU PATHAK	P	37	37	1	0	0
8	A	2001650540009	ISTAKHAR ANSARI	P	31	31	1	0	0
9	A	2001650540010	KRITIKA SONKAR	P	56	56	0	1	0
10	A	2001650540011	MANJEET CHAUDHARY	P	3	3	1	0	0
11	A	2001650540012	NIKITA YADAV	P	87	87	0	0	1
12	A	2001650540013	PRATISTHHA SINGH	P	56	56	0	1	0
13	A	2001650540014	RIMJHIM SRIVASTAVA	P	53	53	0	1	0
14	A	2001650540015	RITIK PATEL	P	45	45	0	1	0
15	A	2001650540016	SAUMYA PRIYA GAUTAM	P	33	33	1	0	0
16	A	2001650540017	SHIKHA SINGH	P	12	12	1	0	0
17	A	2001650540018	SHIPRALI DWIVEDI	P	54	54	0	1	0
18	A	2001650540019	SHIRIN HASHMI	P	78	78	0	0	1
19	A	2001650540020	SHIVAM KUMAR	P	41	41	0	1	0
20	A	2001650540021	SIMRAN RAWAT	P	80	80	0	0	1
21	A	2001650540022	TEHREEM JABEEN	P	68	68	0	0	1
						Total	**7**	**9**	**5**
						% Student	**33.33**	**42.86**	**23.81**
						% CO attained	**63.49**		

Kanpur Institute of Technology, Kanpur		
Assessment Sheet for CO Attainment		
Semester: III	**Name of the Faculty:Dr. Neeraj Mishra**	
Subject Code: KBT 302	**Total No. of Students: 21**	**Subject Name:Microbiology & Immunology**
CO1	Identify, culture and preserve microorganisms and determine the growth of microrganisms.	
CO2	Understand bacterial genome and recombination processes, nitrogen fixation process, bacterial photosynthesis and structure of viruses.	
CO3	Identify the major cells, molecules and tissues which comprise the innate and adaptive immune system.	
CO4	Understand the basics immunological processes, the concepts of Major Histocompatibility Complex and Complement system and to apply the principles of immunotechniques.	
CO5	Distinguish between useful & harmful microorganisms, their applications in the area of environmental microbiology. Understand various bacterial, protozoan and viral diseases.	

Direct Assessment						
S.No.	**Exam**	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
1	**Internal**	**98.41**	**98.41**	**98.41**	**98.41**	**98.41**
Average		**98.41**	**98.41**	**98.41**	**98.41**	**98.41**

Average % Students Attained Course Outcomes					
S.N.	**Course Outcome**	**TOTAL % STUDENT WHO ATTAINED OUTCOME (Internal)**	**TOTAL % STUDENT WHO ATTAINED OUTCOME (University)**	**TOTAL % STUDENT WHO ATTAINED OUTCOME (Indirect - Survey)**	**Goal**
1	CO1	98.41	63.49	87.30	60
2	CO2	98.41	63.49	88.89	60
3	CO3	98.41	63.49	66.67	60
4	CO4	98.41	63.49	66.67	60
5	CO5	98.41	63.49	50.79	60
Average % Students Attained Course Outcomes		98.41	63.49	72.06	60.00

Weigtage of attainment level	
Direct Assessment	80%
Internal Assessment	60%
University Assessment	40%
Indirect Assessment	20%

% of students attained the outcome					
Assessment Types	**% of students attained CO1**	**% of students attained CO2**	**% of students attained CO3**	**% of students attained CO4**	**% of students attained CO5**
Internal Assessment (I)	**98.41**	**98.41**	**98.41**	**98.41**	**98.41**
University Assessment (U)	**63.49**	**63.49**	**63.49**	**63.49**	**63.49**
Direct Assessment (DI) DI=0.6*I + 0.4* U	**84.44**	**84.44**	**84.44**	**84.44**	**84.44**
Indirect Assessment (ID)	**87.30**	**88.89**	**66.67**	**66.67**	**50.79**
Total = 0.8*DI + 0.2*ID	**85.01**	**85.33**	**80.89**	**80.89**	**77.71**

Attainment Level: Rationale				
EE	**Exceed Expectation**	**Attainment > 5% above the goal**		
ME	**Meet Expectation**	**5% below the goal<=Attainment < 5% above the goal**		
BE	**Below Expectation**	**Attainment <5% below the goal**		
Code	**Description**	**Goal (%)**	**Attainment obtained**	**Attainment Level**
EE	Attainment obtained > 58%	60.00	Attainment value > 63	3
ME	Attainment obtained between 52.% to 58%		57 <= Attainment value > 63	2
BE	Attainment obtained below 52%		Attainment value <57	1

% of students attained the outcome w.r.t attainment level					
Assessment Types	**% of students attained CO1**	**% of students attained CO2**	**% of students attained CO3**	**% of students attained CO4**	**% of students attained CO5**
Internal Assessment (I)	**3**	**3**	**3**	**3**	**3**
University Assessment (U)	**3**	**3**	**3**	**3**	**3**
Direct Assessment (DI) DI=0.6*I + 0.4* U	**3**	**3**	**3**	**3**	**3**
Indirect Assessment (ID)	**3**	**3**	**3**	**3**	**1**
Total = 0.8*DI + 0.2*ID	**3**	**3**	**3**	**3**	**2.6**

Kanpur Institute of Technology, Kanpur		
Assessment Sheet for Indirect Assesment		
Semester: III	Name of the Faculty:Dr. Neeraj Mishra	
Subject Code: KBT 302	Total No. of Students: 21	Subject Name:Microbiology & Immunology

CO1	Identify, culture and preserve microorganisms and determine the growth of microrganisms.
CO2	Understand bacterial genome and recombination processes, nitrogen fixation process, bacterial photosynthesis and structure of viruses.
CO3	Identify the major cells, molecules and tissues which comprise the innate and adaptive immune system.
CO4	Understand the basics immunological processes, the concepts of Major Histocompatibility Complex and Complement system and to apply the principles of immunotechniques.
CO5	Distinguish between useful & harmful microorganisms, their applications in the area of environmental microbiology. Understand various bacterial, protozoan and viral diseases.

Indirect Survay Table		
Options	**Description**	**Value**
Option 1	Acquired Very Well with proficiency	3
Option 2	Acquired enough to do my work	2
Option 3	Acquired Marginally	1
Option 4	Did not acquire at all	0

Students feedback Matrix					Total No. of Participants				0
S.No	**Course Outcome**	**Total students participated in feedback**	**No of students in option1 (3)**	**No. of students for option2 (2)**	**No. of students in option3 (1)**	**No. of students in option4 (0)**	**Total Point**	**Total point attained**	**% Attained**
1	**CO1**	21	14	6	1	0	63	55	87.30
2	**CO2**	21	15	5	1	0	63	56	88.89
3	**CO3**	21	5	11	5	0	63	42	66.67
4	**CO4**	21	7	7	7	0	63	42	66.67
5	**CO5**	21	3	5	13	13	63	32	50.79
Average % Students who Attained Course Outcomes									72.06

CO-PO Matrix

S.No.	CO/PO	STATUS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
1	**CO1**	A	2	3	3	2	1	-	-	-	-	2	-	2	2	2	3	2	-	-
2	**CO2**	A	2	2	2	2	1	-	-	-	-	2	-	2	2	2	2	2	-	-
3	**CO3**	A	2	3	3	2	2	-	-	-	-	2	-	2	2	2	2	3	-	-
4	**CO4**	A	3	3	3	2	2	-	-	-	-	2	-	2	2	2	2	3	-	-
5	**CO5**	A	2	3	3	2	2	-	-	-	-	2	-	2	2	2	2	2	-	-
Average PO			2.2	2.8	2.8	2	1.6	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2	#DIV/0!	2	2	2	2.2	2.4	#DIV/0!	#DIV/0!

Indirect Attainment of CO

S.No.	Exam	STATUS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
1	**CO1**	A	1.75	2.62	2.62	1.75	0.87					1.75		1.75	1.75	1.75	2.62	1.75		
2	**CO2**	A	1.78	1.78	1.78	1.78	0.89					1.78		1.78	1.78	1.78	1.75	1.75		
3	**CO3**	A	1.33	2.00	2.00	1.33	1.33					1.33		1.33	1.33	1.33	1.75	2.62		
4	**CO4**	A	2.00	2.00	2.00	1.33	1.33					1.33		1.33	1.33	1.33	1.75	2.62		
5	**CO5**	A	1.02	1.52	1.52	1.02	1.02					1.02		1.02	1.02	1.02	1.75	1.75		
Average PO			1.57	1.98	1.98	1.44	1.09	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.44	#DIV/0!	1.44	1.44	1.44	1.92	2.10	#DIV/0!	#DIV/0!

Kanpur Institute of Technology, Kanpur		
Assessment Sheet for PO Attainment		
Semester: III	Name of the Faculty:Dr. Neeraj Mishra	
Subject Code: KBT 302	Total No. of Students: 21	Subject Name:Microbiology & Immunology

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES/PROGRAM SPECIFIC OUTCOME

S.No.	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
1	CO1	2.00	3.00	3.00	2.00	1.00	-	-	-	-	2.00	-	2.00	2.00	2.00	3.00	2.00	-	-
2	CO2	2.00	2.00	2.00	2.00	1.00	-	-	-	-	2.00	-	2.00	2.00	2.00	2.00	2.00	-	-
3	CO3	2.00	3.00	3.00	2.00	2.00	-	-	-	-	2.00	-	2.00	2.00	2.00	2.00	3.00	-	-
4	CO4	3.00	3.00	3.00	2.00	2.00	-	-	-	-	2.00	-	2.00	2.00	2.00	2.00	3.00	-	-
5	CO5	2.00	3.00	3.00	2.00	2.00	-	-	-	-	2.00	-	2.00	2.00	2.00	2.00	2.00	-	-
Average CO		2.20	2.80	2.80	2.00	1.60	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2.00	#DIV/0!	2.00	2.00	2.00	2.20	2.40	#DIV/0!	#DIV/0!

Direct Assessment (Internal + University)

S.No.	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	% of students attained CO
1	CO1	1.69	2.53	2.53	1.69	0.84					1.69		1.69	1.69	1.69	2.53	1.69			84.44
2	CO2	1.69	1.69	1.69	1.69	0.84					1.69		1.69	1.69	1.69	1.69	1.69			84.44
3	CO3	1.69	2.53	2.53	1.69	1.69					1.69		1.69	1.69	1.69	1.69	2.53			84.44
4	CO4	2.53	2.53	2.53	1.69	1.69					1.69		1.69	1.69	1.69	1.69	2.53			84.44
5	CO5	1.69	2.53	2.53	1.69	1.69					1.69		1.69	1.69	1.69	1.69	1.69			84.44
Average PO		1.86	2.36	2.36	1.69	1.35					1.69		1.69	1.69	1.69	1.86	2.03			84.44

Indirect Attainment of CO

S.No.	Exam	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	% of student Indirect Attained
1	CO1	1.75	2.62	2.62	1.75	0.87					1.75		1.75	1.75	1.75	2.62	1.75			87.30
2	CO2	1.78	1.78	1.78	1.78	0.89					1.78		1.78	1.78	1.78	1.75	1.75			88.89
3	CO3	1.33	2.00	2.00	1.33	1.33					1.33		1.33	1.33	1.33	1.75	2.62			66.67
4	CO4	2.00	2.00	2.00	1.33	1.33					1.33		1.33	1.33	1.33	1.75	2.62			66.67
5	CO5	1.02	1.52	1.52	1.02	1.02					1.02		1.02	1.02	1.02	1.75	1.75			50.79
Average PO		1.57	1.98	1.98	1.44	1.09					1.44		1.44	1.44	1.44	1.92	2.10			72.06

PO Attainment

Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
Direct(D)	1.86	2.36	2.36	1.69	1.35					1.69		1.69	1.69	1.69	1.86	2.03		
Indirect(I)	1.57	1.98	1.98	1.44	1.09					1.44		1.44	1.44	1.44	1.92	2.10		
Total=.8*D+0.2*I	1.80	2.28	2.28	1.64	1.30					1.64		1.64	1.64	1.64	1.87	2.04		

Kanpur Institute of Technology, Kanpur				VALUE
Feedback				
Semester: III	Name of the Faculty:Dr. Neeraj Mishra			
Subject Code: KBT 302	Total No. of Students: 21		Subject Name:Microbiology & Immunology	
CO1	Identify, culture and preserve microorganisms and determine the growth of microrganisms.			To be filled by students
CO2	Understand bacterial genome and recombination processes, nitrogen fixation process, bacterial photosynthesis and structure of viruses.			To be filled by students
CO3	Identify the major cells, molecules and tissues which comprise the innate and adaptive immune system.			To be filled by students
CO4	Understand the basics immunological processes, the concepts of Major Histocompatibility Complex and Complement system and to apply the principles of immunotechniques.			To be filled by students
CO5	Distinguish between useful & harmful microorganisms, their applications in the area of environmental microbiology. Understand various bacterial, protozoan and viral diseases.			To be filled by students

Indirect Survay Table		
Options	Description	Value
Option 1	Acquired Very Well with proficiency	3
Option 2	Acquired enough to do my work	2
Option 3	Acquired Marginally	1
Option 4	Did not acquire at all	0

Name & Signature of the Student

Kanpur Institute of Technology, Kanpur				VALUE
Feedback				
Semester: III	Name of the Faculty:Dr. Neeraj Mishra			
Subject Code: KBT 302	Total No. of Students: 21		Subject Name:Microbiology & Immunology	
CO1	Identify, culture and preserve microorganisms and determine the growth of microrganisms.			To be filled by students
CO2	Understand bacterial genome and recombination processes, nitrogen fixation process, bacterial photosynthesis and structure of viruses.			To be filled by students
CO3	Identify the major cells, molecules and tissues which comprise the innate and adaptive immune system.			To be filled by students
CO4	Understand the basics immunological processes, the concepts of Major Histocompatibility Complex and Complement system and to apply the principles of immunotechniques.			To be filled by students
CO5	Distinguish between useful & harmful microorganisms, their applications in the area of environmental microbiology. Understand various bacterial, protozoan and viral diseases.			To be filled by students

Indirect Survay Table		
Options	Description	Value
Option 1	Acquired Very Well with proficiency	3
Option 2	Acquired enough to do my work	2
Option 3	Acquired Marginally	1
Option 4	Did not acquire at all	0

Name & Signature of the Student

Kanpur Institute of Technology, Kanpur		
Common Data Input Sheet		
Semester:IV	Name of the Faculty: Dr. Neeraj Mishra	
Subject Code: KBT-403	Total No. of Students:21	Subject Name:Enzyme Engineering

CO DESCRIPTION TABLE	
CO LIST	DESCRIPTION
CO1	Understand the basic concepts, composition and role of enzyme in biochemical process.
CO2	Understand the roles of different physical factors in the stability of enzyme during reaction catalyzed.
CO3	Able to extract the crude enzyme from various sources.
CO4	Able to differentiate between enzyme immobilization methods and their application in different fields.
CO5	Able to understand the designing of different enzyme electrodes and their use in industry.

CO-PO Matrix

S.No.	CO/PO	STATUS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
1	CO1	A	3	2	2	3	1	-	-	-	-	2	-	2	2	2	2	2	-	-
2	CO2	A	3	3	2	3	1	-	-	-	-	2	-	2	2	2	2	2	-	-
3	CO3	A	3	2	3	3	3	-	-	-	-	3	-	2	2	2	2	3	-	-
4	CO4	A	3	3	3	2	2	-	-	-	-	2	-	2	2	2	2	2	-	-
5	CO5	A	3	3	3	2	2	-	-	-	-	2	-	2	2	2	2	2	-	-

(Please Fill up 'NA' in STATUS COLUMN if any CO is NOT APPLICABLE)

Kanpur Institute of Technology, Kanpur										
Assessment Sheet for PU										
Semester:IV			**Name of the Faculty: Dr. Neeraj Mishra**							**Subject Code: KBT-403**
CO1	Understand the basic concepts, composition and role of enzyme in biochemical process.									
CO2	Understand the roles of different physical factors in the stability of enzyme during reaction catalyzed.									
CO3	Able to extract the crude enzyme from various sources.									
CO4	Able to differentiate between enzyme immobilization methods and their application in different fields.									
CO5	Able to understand the designing of different enzyme electrodes and their use in industry.									

S.No	SEC	Roll No	Student Name	Total Present Status	Internal CO marks	Out of	CO attained APPLICABLE			
							CO	AL:1	AL:2	AL:3
Distribution of Marks				**21**	**50**	**50**	**50**	**<40%**	**>=40% & <60%**	**>=60%**
1	A	2001650540002	ARYAN SINGH	P	**49**	49	49	0	0	1
2	A	2001650540003	AYUSHI SINGH	P	**47**	47	47	0	0	1
3	A	2001650540004	DEEPAK YADAV	P	**25**	25	25	0	1	0
4	A	2001650540005	DEEPIKA MISHRA	P	**48**	48	48	0	0	1
5	A	2001650540006	DIPIKA	P	**28**	28	28	0	1	0
6	A	2001650540007	DURGESH KUMAR	P	**47**	47	47	0	0	1
7	A	2001650540008	HIMANSHU PATHAK	P	**34**	34	34	0	0	1
8	A	2001650540009	ISTAKHAR ANSARI	P	**46**	46	46	0	0	1
9	A	2001650540010	KRITIKA SONKAR	P	**50**	50	50	0	0	1
10	A	2001650540011	MANJEET CHOUDHARY	P	**35**	35	35	0	0	1
11	A	2001650540012	NIKITA YADAV	P	**50**	50	50	0	0	1
12	A	2001650540013	PRATISTHHA SINGH	P	**50**	50	50	0	0	1
13	A	2001650540014	RIMJHIM SRIVASTAVA	P	**49**	49	49	0	0	1
14	A	2001650540015	RITIK PATEL	P	**38**	38	38	0	0	1
15	A	2001650540016	SAUMYA PRIYA GAUTAM	P	**46**	46	46	0	0	1
16	A	2001650540017	SHIKHA SINGH	P	**47**	47	47	0	0	1
17	A	2001650540018	SHIPRALI DWIVEDI	P	**50**	50	50	0	0	1
18	A	2001650540019	SHIRIN HASHMI	P	**50**	50	50	0	0	1
19	A	2001650540020	SHIVAM KUMAR	P	**48**	48	48	0	0	1
20	A	2001650540021	SIMRAN RAWAT	P	**50**	50	50	0	0	1
21	A	2001650540022	TEHREEM JABEEN	P	**50**	50	50	0	0	1
						Total	**CO**	**0**	**2**	**19**
						% Student		**0**	**9.5238**	**90.47619048**
						% CO attained		**96.83**		

Kanpur Institute of Technology, Kanpur	
Assessment Sheet for Feedback	
Semester:IV	**Name of the Faculty: Dr. Neeraj Mishra**
Subject Code: KBT-403	**Subject Name:Enzyme Engineering**

CO1	Understand the basic concepts, composition and role of enzyme in biochemical process.
CO2	Understand the roles of different physical factors in the stability of enzyme during reaction catalyzed.
CO3	Able to extract the crude enzyme from various sources.
CO4	Able to differentiate between enzyme immobilization methods and their application in different fields.
CO5	Able to understand the designing of different enzyme electrodes and their use in industry.

Total Students	**21**

Course Outcomes					**CO1 Feedback**	**CO2 Feedback**	**CO3 Feedback**	**CO4 feedback**	**CO5 feedback**
CO1	**CO2**	**CO3**	**CO4**	**CO5**	**APPLICABLE**	**APPLICABLE**	**APPLICABLE**	**APPLICABLE**	**APPLICABLE**
A	**A**	**A**	**A**	**A**					
No of students in option1 (3)					10	14	4	10	7
No. of students for option2 (2)					5	6	12	5	4
No. of students in option3 (1)					6	1	5	6	10
No. of students in option4 (0)					0	0	0	0	0
					21	21	21	21	21

Kanpur Institute of Technology, Kanpur

Assessment Sheet for UNIVERSITY

Semester:IV	**Name of the Faculty: Dr. Neeraj Mishra**
Subject Code: KBT-403	**Subject Name:Enzyme Engineering**

CO1	Understand the basic concepts, composition and role of enzyme in biochemical process.
CO2	Understand the roles of different physical factors in the stability of enzyme during reaction catalyzed.
CO3	Able to extract the crude enzyme from various sources.
CO4	Able to differentiate between enzyme immobilization methods and their application in different fields.
CO5	Able to understand the designing of different enzyme electrodes and their use in industry.

S.No	SEC	Roll No	Student Name	Total Present Status	From University	Out of	UNIVERSITY ATTAINTMENT APPLICABLE		
							AL:1	AL:2	AL:3
Distribution of Marks				**21**	**100**	**100**	**<40%**	**>=40% & <60%**	**>=60%**
1	A	2001650540002	ARYAN SINGH	P	**72**	72	0	0	1
2	A	2001650540003	AYUSHI SINGH	P	**74**	74	0	0	1
3	A	2001650540004	DEEPAK YADAV	P	**35**	35	1	0	0
4	A	2001650540005	DEEPIKA MISHRA	P	**60**	60	0	0	1
5	A	2001650540006	DIPIKA	P	**60**	60	0	0	1
6	A	2001650540007	DURGESH KUMAR	P	**60**	60	0	0	1
7	A	2001650540008	HIMANSHU PATHAK	P	**38**	38	1	0	0
8	A	2001650540009	ISTAKHAR ANSARI	P	**54**	54	0	1	0
9	A	2001650540010	KRITIKA SONKAR	P	**77**	77	0	0	1
10	A	2001650540011	MANJEET CHOUDHARY	P	**30**	30	1	0	0
11	A	2001650540012	NIKITA YADAV	P	**75**	75	0	0	1
12	A	2001650540013	PRATISTHHA SINGH	P	**69**	69	0	0	1
13	A	2001650540014	RIMJHIM SRIVASTAVA	P	**73**	73	0	0	1
14	A	2001650540015	RITIK PATEL	P	**70**	70	0	0	1
15	A	2001650540016	SAUMYA PRIYA GAUTAM	P	**61**	61	0	0	1
16	A	2001650540017	SHIKHA SINGH	P	**58**	58	0	1	0
17	A	2001650540018	SHIPRALI DWIVEDI	P	**66**	66	0	0	1
18	A	2001650540019	SHIRIN HASHMI	P	**77**	77	0	0	1
19	A	2001650540020	SHIVAM KUMAR	P	**70**	70	0	0	1
20	A	2001650540021	SIMRAN RAWAT	P	**72**	72	0	0	1
21	A	2001650540022	TEHREEM JABEEN	P	**68**	68	0	0	1
							3	**2**	**16**
						% Student	**14.29**	**9.52**	**76.19**
						% CO attained	**87.3**		

Kanpur Institute of Technology, Kanpur		
Assessment Sheet for CO Attainment		
Semester:IV	**Name of the Faculty: Dr. Neeraj Mishra**	
Subject Code: KBT-403	**Total No. of Students:21**	**Subject Name:Enzyme Engineering**
CO1	Understand the basic concepts, composition and role of enzyme in biochemical process.	
CO2	Understand the roles of different physical factors in the stability of enzyme during reaction catalyzed.	
CO3	Able to extract the crude enzyme from various sources.	
CO4	Able to differentiate between enzyme immobilization methods and their application in different fields.	
CO5	Able to understand the designing of different enzyme electrodes and their use in industry.	

Direct Assessment						
S.No.	**Exam**	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
1	**Internal**	**96.83**	**96.83**	**96.83**	**96.83**	**96.83**
Average		**96.83**	**96.83**	**96.83**	**96.83**	**96.83**

Average % Students Attained Course Outcomes					
S.N.	**Course Outcome**	**TOTAL % STUDENT WHO ATTAINED OUTCOME (Internal)**	**TOTAL % STUDENT WHO ATTAINED OUTCOME (University)**	**TOTAL % STUDENT WHO ATTAINED OUTCOME (Indirect - Survey)**	**Goal**
1	CO1	96.83	87.30	73.02	60
2	CO2	96.83	87.30	87.30	60
3	CO3	96.83	87.30	65.08	60
4	CO4	96.83	87.30	73.02	60
5	CO5	96.83	87.30	61.90	60
Average % Students Attained Course Outcomes		96.83	87.30	72.06	60.00

Weigtage of attainment level	
Direct Assessment	80%
Internal Assessment	60%
University Assessment	40%
Indirect Assessment	20%

% of students attained the outcome					
Assessment Types	**% of students attained CO1**	**% of students attained CO2**	**% of students attained CO3**	**% of students attained CO4**	**% of students attained CO5**
Internal Assessment (I)	**96.83**	**96.83**	**96.83**	**96.83**	**96.83**
University Assessment (U)	**87.30**	**87.30**	**87.30**	**87.30**	**87.30**
Direct Assessment (DI) DI=0.6*I + 0.4* U	**93.02**	**93.02**	**93.02**	**93.02**	**93.02**
Indirect Assessment (ID)	**73.02**	**87.30**	**65.08**	**73.02**	**61.90**
Total = 0.8*DI + 0.2*ID	**89.02**	**91.87**	**87.43**	**89.02**	**86.80**

Attainment Level: Rationale		
EE	**Exceed Expectation**	**Attainment > 5% above the goal**
ME	**Meet Expectation**	**5% below the goal<=Attainment < 5% above the goal**
BE	**Below Expectation**	**Attainment <5% below the goal**

Code	**Description**	**Goal (%)**	**Attainment obtained**	**Attainment Level**
EE	Attainment obtained > 58%	60.00	Attainment value > 63	3
ME	Attainment obtained between 52.% to 58%		57 <= Attainment value > 63	2
BE	Attainment obtained below 52%		Attainment value <57	1

% of students attained the outcome w.r.t attainment level					
Assessment Types	**% of students attained CO1**	**% of students attained CO2**	**% of students attained CO3**	**% of students attained CO4**	**% of students attained CO5**
Internal Assessment (I)	**3**	**3**	**3**	**3**	**3**
University Assessment (U)	**3**	**3**	**3**	**3**	**3**
Direct Assessment (DI) DI=0.6*I + 0.4* U	**3**	**3**	**3**	**3**	**3**
Indirect Assessment (ID)	**3**	**3**	**3**	**3**	**2**
Total = 0.8*DI + 0.2*ID	**3**	**3**	**3**	**3**	**2.8**

Kanpur Institute of Technology, Kanpur		
Assessment Sheet for Indirect Assesment		
Semester:IV	Name of the Faculty: Dr. Neeraj Mishra	
Subject Code: KBT-403	Total No. of Students:21	Subject Name:Enzyme Engineering

CO1	Understand the basic concepts, composition and role of enzyme in biochemical process.
CO2	Understand the roles of different physical factors in the stability of enzyme during reaction catalyzed.
CO3	Able to extract the crude enzyme from various sources.
CO4	Able to differentiate between enzyme immobilization methods and their application in different fields.
CO5	Able to understand the designing of different enzyme electrodes and their use in industry.

Indirect Survay Table		
Options	**Description**	**Value**
Option 1	Acquired Very Well with proficiency	3
Option 2	Acquired enough to do my work	2
Option 3	Acquired Marginally	1
Option 4	Did not acquire at all	0

Students feedback Matrix					Total No. of Participants				0
S.No	**Course Outcome**	**Total students participated in feedback**	**No of students in option1 (3)**	**No. of students for option2 (2)**	**No. of students in option3 (1)**	**No. of students in option4 (0)**	**Total Point**	**Total point attained**	**% Attained**
1	**CO1**	21	10	5	6	0	63	46	73.02
2	**CO2**	21	14	6	1	0	63	55	87.30
3	**CO3**	21	4	12	5	0	63	41	65.08
4	**CO4**	21	10	5	6	0	63	46	73.02
5	**CO5**	21	7	4	10	10	63	39	61.90
Average % Students who Attained Course Outcomes									72.06

CO-PO Matrix

S.No.	CO/PO	STATUS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
1	**CO1**	A	3	2	2	3	1	-	-	-	-	2	-	2	2	2	2	2	-	-
2	**CO2**	A	3	3	2	3	1	-	-	-	-	2	-	2	2	2	2	2	-	-
3	**CO3**	A	3	2	3	3	3	-	-	-	-	3	-	2	2	2	2	3	-	-
4	**CO4**	A	3	3	3	2	2	-	-	-	-	2	-	2	2	2	2	2	-	-
5	**CO5**	A	3	3	3	2	2	-	-	-	-	2	-	2	2	2	2	2	-	-
Average PO			3	2.6	2.6	2.6	1.8	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2.2	#DIV/0!	2	2	2	2	2.2	#DIV/0!	#DIV/0!

Indirect Attainment of CO

S.No.	Exam	STATUS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
1	**CO1**	A	2.19	1.46	1.46	2.19	0.73					1.46		1.46	1.46	1.46	1.46	1.46		
2	**CO2**	A	2.62	2.62	1.75	2.62	0.87					1.75		1.75	1.75	1.75	1.46	1.46		
3	**CO3**	A	1.95	1.30	1.95	1.95	1.95					1.95		1.30	1.30	1.30	1.46	2.19		
4	**CO4**	A	2.19	2.19	2.19	1.46	1.46					1.46		1.46	1.46	1.46	1.46	1.46		
5	**CO5**	A	1.86	1.86	1.86	1.24	1.24					1.24		1.24	1.24	1.24	1.46	1.46		
Average PO			2.16	1.89	1.84	1.89	1.25	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.57	#DIV/0!	1.44	1.44	1.44	1.46	1.61	#DIV/0!	#DIV/0!

Kanpur Institute of Technology, Kanpur		
Assessment Sheet for PO Attainment		
Semester:IV	Name of the Faculty: Dr. Neeraj Mishra	
Subject Code: KBT-403	Total No. of Students:21	Subject Name:Enzyme Engineering

MAPPING OF COURSE OUTCOME WITH PROGRAM OUTCOMES/PROGRAM SPECIFIC OUTCOME

S.No.	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
1	CO1	3.00	2.00	2.00	3.00	1.00	-	-	-	-	2.00	-	2.00	2.00	2.00	2.00	2.00	-	-
2	CO2	3.00	3.00	2.00	3.00	1.00	-	-	-	-	2.00	-	2.00	2.00	2.00	2.00	2.00	-	-
3	CO3	3.00	2.00	3.00	3.00	3.00	-	-	-	-	3.00	-	2.00	2.00	2.00	2.00	3.00	-	-
4	CO4	3.00	3.00	3.00	2.00	2.00	-	-	-	-	2.00	-	2.00	2.00	2.00	2.00	2.00	-	-
5	CO5	3.00	3.00	3.00	2.00	2.00	-	-	-	-	2.00	-	2.00	2.00	2.00	2.00	2.00	-	-
Average CO		3.00	2.60	2.60	2.60	1.80	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2.20	#DIV/0!	2.00	2.00	2.00	2.00	2.20	#DIV/0!	#DIV/0!

Direct Assessment (Internal + University)

S.No.	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	% of students attained CO
1	CO1	2.79	1.86	1.86	2.79	0.93					1.86		1.86	1.86	1.86	1.86	1.86			93.02
2	CO2	2.79	2.79	1.86	2.79	0.93					1.86		1.86	1.86	1.86	1.86	1.86			93.02
3	CO3	2.79	1.86	2.79	2.79	2.79					2.79		1.86	1.86	1.86	1.86	2.79			93.02
4	CO4	2.79	2.79	2.79	1.86	1.86					1.86		1.86	1.86	1.86	1.86	1.86			93.02
5	CO5	2.79	2.79	2.79	1.86	1.86					1.86		1.86	1.86	1.86	1.86	1.86			93.02
Average PO		2.79	2.42	2.42	2.42	1.67					2.05		1.86	1.86	1.86	1.86	2.05			93.02

Indirect Attainment of CO

S.No.	Exam	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	% of student Indirect Attained
1	CO1	2.19	1.46	1.46	2.19	0.73					1.46		1.46	1.46	1.46	1.46	1.46			73.02
2	CO2	2.62	2.62	1.75	2.62	0.87					1.75		1.75	1.75	1.75	1.46	1.46			87.30
3	CO3	1.95	1.30	1.95	1.95	1.95					1.95		1.30	1.30	1.30	1.46	2.19			65.08
4	CO4	2.19	2.19	2.19	1.46	1.46					1.46		1.46	1.46	1.46	1.46	1.46			73.02
5	CO5	1.86	1.86	1.86	1.24	1.24					1.24		1.24	1.24	1.24	1.46	1.46			61.90
Average PO		2.16	1.89	1.84	1.89	1.25					1.57		1.44	1.44	1.44	1.46	1.61			72.06

PO Attainment

Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
Direct(D)	2.79	2.42	2.42	2.42	1.67					2.05		1.86	1.86	1.86	1.86	2.05		
Indirect(I)	2.16	1.89	1.84	1.89	1.25					1.57		1.44	1.44	1.44	1.46	1.61		
Total=.8*D+0.2*I	2.66	2.31	2.30	2.31	1.59					1.95		1.78	1.78	1.78	1.78	1.96		

Kanpur Institute of Technology, Kanpur				VALUE
Feedback				
Semester:IV	Name of the Faculty: Dr. Neeraj Mishra			
Subject Code: KBT-403	Total No. of Students:21		Subject Name:Enzyme Engineering	
CO1	Understand the basic concepts, composition and role of enzyme in biochemical process.			
CO2	Understand the roles of different physical factors in the stability of enzyme during reaction catalyzed.			
CO3	Able to extract the crude enzyme from various sources.			
CO4	Able to differentiate between enzyme immobilization methods and their application in different fields.			
CO5	Able to understand the designing of different enzyme electrodes and their use in industry.			

Indirect Survay Table		
Options	Description	Value
Option 1	Acquired Very Well with proficiency	3
Option 2	Acquired enough to do my work	2
Option 3	Acquired Marginally	1
Option 4	Did not acquire at all	0

Name & Signature of the Student

Kanpur Institute of Technology, Kanpur				VALUE
Feedback				
Semester:IV	Name of the Faculty: Dr. Neeraj Mishra			
Subject Code: KBT-403	Total No. of Students:21		Subject Name:Enzyme Engineering	
CO1	Understand the basic concepts, composition and role of enzyme in biochemical process.			
CO2	Understand the roles of different physical factors in the stability of enzyme during reaction catalyzed.			
CO3	Able to extract the crude enzyme from various sources.			
CO4	Able to differentiate between enzyme immobilization methods and their application in different fields.			
CO5	Able to understand the designing of different enzyme electrodes and their use in industry.			

Indirect Survay Table		
Options	Description	Value
Option 1	Acquired Very Well with proficiency	3
Option 2	Acquired enough to do my work	2
Option 3	Acquired Marginally	1
Option 4	Did not acquire at all	0

Name & Signature of the Student