Course-Program Mapping

Date:	Fall 2019	**Department:**	Computer Science and Engineering
Course Title:	Differential and Integral Calculus	**Prepared by:**	Satyaki Das
Course Code:	MAT 101	**Checked by:**	
Course Type:	MJ, T		

SL No.	Course Learning Outcome (ILO)	Contribution to			Assessment Strategy
		Program Learning Outcomes	Generic Skills	Professional Skills	
1.	**Describe** the objective of Differential and Integral Calculus.	PLO1(MJ)	GS1.1(MJ), GS3.4(MJ)	PS1(MJ), PS2 (MN)	AS1(MJ), AS7(MJ)
2.	**Explain** terms related to various techniques of differentiation and integration, design mathematical modeling of different applications.	PLO1(MJ), PLO2 (MJ)	GS2.1(MJ), GS3.4 (MN)	PS1(MJ), PS2 (MJ)	AS1(MJ), AS7(MJ)
3.	**Understand** a practical problem; **apply** techniques and appropriate formulation to implement method to solve the problem.	PLO1 (MJ), PLO2 (MJ)	GS1.1(MJ), GS4.2(MJ), GS4.3 (MJ), GS3.7(MN)	PS1 (MJ), PS2 (MJ), PS6(MJ)	AS1(MJ), AS2(MJ), AS7(MJ)

Note: Kindly write the appropriate code on the space allotted. Please indicate if the contribution is major (MJ) or minor (MN). The codes are in the following pages.

Program Learning Outcome Mapping

Degree	BSc in Computer Science and Engineering
Program Offering Entity:	Department of Computer Science and Engineering

Course Code	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
MAT 101	√√	√√										

Note: Put (√√) if the course makes a major contribution, put (√) if the course makes a minor contribution.

Program Learning Outcome Alignment

Degree:	**BSc in Computer Science and Engineering**
Program Offering Entity:	**Department of Computer Science and Engineering**

PLO 1: MAT 101	**PLO 2:** MAT 101
PLO 3:	**PLO 4:**
PLO 5:	**PLO 6:**
PLO 7:	**PLO 8:**
PLO 9:	**PLO 10:**
PLO 11:	**PLO 12:**

Generic Skills Map

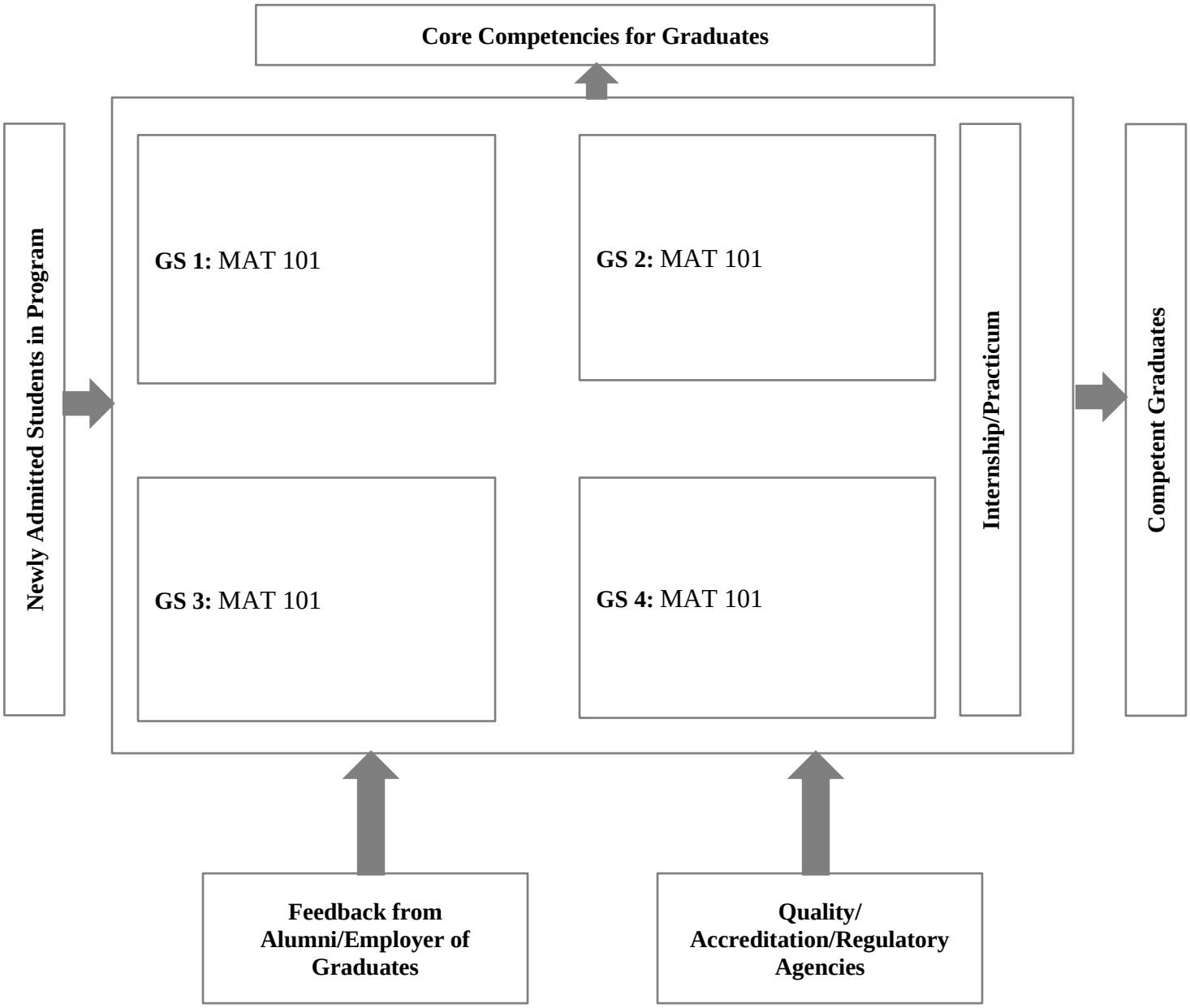
Degree	**BSc in Computer Science and Engineering**
Program Offering Entity	**Department of Computer Science and Engineering**

Courses	GS1		GS2			GS3							GS4					
	1	2	1	2	3	1	2	3	4	5	6	7	1	2	3	4	5	6
MAT 101	√√		√√						√√			√		√√	√√			

Note: Put (√√) if the course makes a major contribution, put (√) if the course makes a minor contribution.

Generic Skills Alignment

Degree	**BSc in Computer Science and Engineering**
Program Offering Entity	**Department of Computer Science and Engineering**



Note: Plot only if the course makes a major contribution.

Professional Skills Map

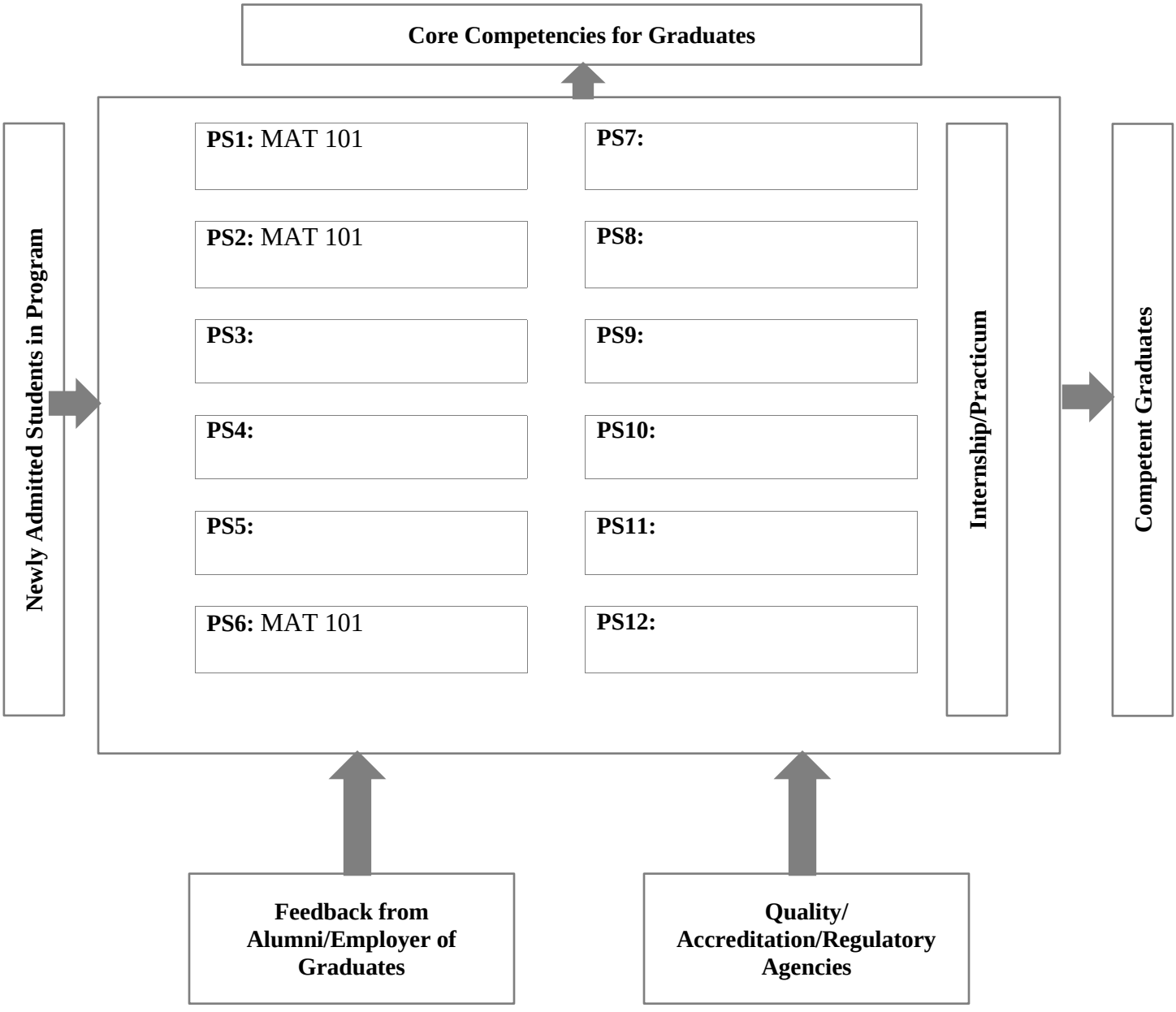
Degree	**BSc in Computer Science and Engineering**
Program Offering Entity	**Department of Computer Science and Engineering**

Courses	PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8	PS9	PS10	PS11	PS12
MAT 101	√√	√√				√√						

Note: Put (√√) if the course makes a major contribution, put (√) if the course makes a minor contribution.

Professional Skills Alignment

Degree:	**BSc in Computer Science and Engineering**
Program:	**Department of Computer Science and Engineering**



Note: Plot only if the course makes a major contribution.

Learning Assessment Mapping (Course Level)

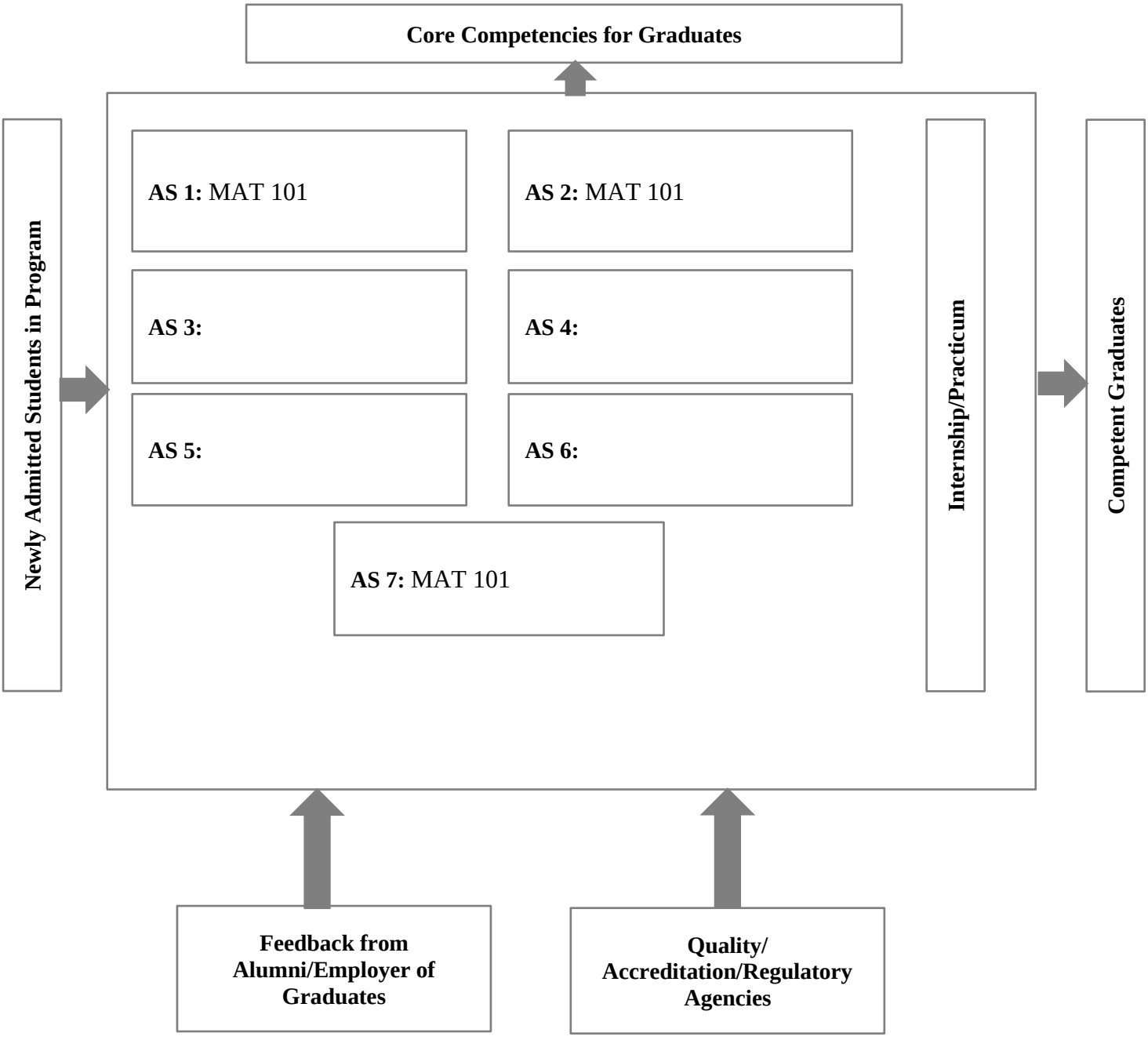
Degree	**BSc in Computer Science and Engineering**
Program Offering Entity	**Department of Computer Science and Engineering**

Courses	AS1	AS2	AS3	AS4	AS5	AS6	AS7
MAT 101	√√	√√					√√

Note: Put (√√) if the course makes a major contribution, Put (√) if the course makes a minor contribution.

Learning Assessment Alignment (Course Level)

Degree	**BSc in Computer Science and Engineering**
Program Offering Entity	**Department of Computer Science and Engineering**



Note: Plot only if the course makes a major contribution.

Semester Course Report

University	**ULAB**	**School**	**School of Engineering**	**Department**	**CSE**
Semester	**Fall**	**Year**	**2019**		

I. Basic Information

1.	**Course Code**	**MAT 101**
2.	**Course Title**	Differential and Integral Calculus
3.	**Section**	**04**
4.	**Unit/Credit hours:**	**3**

Lectures	**24**	**Tutorial**		**Practical**		**Total**	**24**

5.	**Course Instructor:**	**Satyaki Das**

6. Intended Learning Outcomes:

1. **Describe** the objective of Differential and Integral Calculus.
2. **Explain** terms related to various techniques of differentiation and integration, design mathematical modeling of different applications.
3. **Understand** a practical problem; **apply** techniques and appropriate formulation to implement method to solve the problem.

II. Statistical Information

	No.	%
Students enrolled	**16**	**100.00%**
Students who withdrew	**0**	**0.00%**
Students who took final exam/project	**9**	**56.25%**
Students passed	**8**	**50.00%**

	No.	%
Sessions Missed	**2**	**8.3**
Sessions Made Up		
Total Sessions Conducted (excluding midterm & finals)	**22**	**91.7**

	Average Number Per Session
Tardy Students	**2**
Absent Students	**5**

	No.
Guest Lecturers Invited	**0**
Field Trips Taken	**0**

Achievement of students:

Letter Grade	No.	%
A+	**0**	**0.00%**
A	**0**	**0.00%**
A-	**2**	**12.50%**
B	**1**	**6.25%**
B+	**0**	**0.00%**
B-	**1**	**6.25%**
C+	**1**	**6.25%**
C	**0**	**0.00%**
D	**3**	**18.75%**
F	**8**	**50.00%**
I	**0**	**0.00%**
W	**0**	**0.00%**
Total	**16**	**100.00%**

III. Professional Information

1. **Course topic/content ILO covered**

Topics Taught	ILO Covered	No. of Sessions
Differential Calculus: Functional Analysis and Graphical Information: function, properties of functions, graphs of functions, new function from old, lines and family of functions, Limit: Limits (an informal view), one sided limits, the relation between one sided and two sided limits, computing limits, Continuity: continuity and discontinuity, some properties of continuity, the	1-3	5

intermediated value theorem.		
Derivatives: slope and rate of change, tangent and normal, derivative of a function, physical meaning of derivative of a function, techniques of differentiation, chain rule, successive derivatives.	3	3
Derivative in graphing and applications: analysis of functions, maximum and minimum, Expansion of functions: Taylor's series, Maclaurian's series, Leibniz; Rolle's and Mean Value theorems, Partials and total derivatives of a function of two or three variables.	1-3	3
Different technique of integration: integration, fundamental integrals, methods of substitutions, integration of rational functions, integration by parts, integrals of special trigonometric functions, reduction formulae for trigonometric functions.	3	5
Definite integrals: general properties of definite integral, definite integral as the limit of sum and as an area, definition of Riemann integral, Fundamental theorem of integral calculus and its applications to definite integrals, determination of arc length, Improper integrals, Double integrals, Evaluation of Areas and Volumes. Introduction to MATLAB and LAB Sessions.	3	6

What percentage of topics/content planned were actually taught? (Please encircle appropriate answer)

a. >90% [redacted] **b. 70-90%** [ ] **c. <70%** [ ]

If <70%, please write the reason for not teaching all topics/content planned:

[ ]

If any topics/contents were taught which were not written in course outline, give reasons in detail:

2. **Teaching and learning methods:**

Teaching Methods	No.	% of Total Session
Lectures	22	100
Debate		
Discussion	10	45.45
Presentation		
Group Work	4	18.18
Others		
Active learning: (Please Specify)		
Teaching Aids:	**No.**	**% of Total Session**
Video		
Audio		
Handout		

3. **Student assessment:**

SL#	Type	Description	ILO Assessed
1.	Written Examination	Midterm, Final and Quizzes	1-3
2.	Oral Examination		
3.	Laboratory work		
4.	Projects		
5.	Research Papers		
6.	Others (please specify)		

Involvement of external evaluator in student assessment

☐ **Yes** ■ **No**

If yes, please explain

4. **Facilities and teaching materials:**

SL#	Facilities	Please rate the following (1-inadequate, 2-adequate to some extent, 3-adequate)		
		1	2	3
1.	Classroom			
2.	Projector/Screen			
3.	Whiteboard/Marker			
4.	Chair/table			
5.	Computer (If appropriate)			
6.	Laboratory (If appropriate please specify)			
7.	Equipment (If appropriate please specify)			

5. **List any Inadequacies:**

6. **Administrative Constraints**
   List any difficulties encountered:

7. **Suggestions for Course Enhancement:**

Class size should be reduced.

Signature:

Date: