COURSE HANDBOOK

ON

PRINCIPLES OF MACROECONOMICS (HSS 2021)

(3rd Semester)

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES (HSS)

Faculty of Engineering and Technology,

Institute of Technical Education and Research

SIKSHA 'O' ANUSANDHAN (DEEMED TO BE) UNIVERSITY

Bhubaneswar, Odisha, India

(September 2022)

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PREFACE

This course handbook contains all the necessary details of the concerned subject, i.e., Principles of Macroeconomics (HSS 2021). It is designed in order keep up with the Outcome Based Education **(OBE)**. The handbook provides necessary details about the Grading Pattern, Grading System, Course Assessment, Assessment Rubrics, the Outcomes (POs, PEOs, PSOs), Bloom's Taxonomy, Graduation CGPA requirements, Minimum Requirements for Passing Grade and Appearing the (Deemed to be University) Examination.

1. Course Details

Name of the Course : Principles of Macroeconomics

Course Code : HSS 2021

Course Credits : 3

Grading Pattern : 6

Branch and Semester : Computer Science Engineering, 3rd Semester

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<table>
<tr><th>SUBJECT CODE</th><th>SUBJECT NAME</th><th>CREDIT</th><th>GRADING PATTERN</th></tr>
<tr><td>HSS 2021</td><td>Principles of Macroeconomics</td><td>3</td><td>6</td></tr>
<tr><td colspan="2" rowspan="2">Introduction to Macroeconomics, Independence & gains from trade, Measuring a nations income, Measuring the Cost of Living, Production & growth, Savings, investment & the financial system, The Basic tools of finance, Unemployment and its natural rate, The Monetary System, Money, Growth & inflation, Aggregate Demand & Aggregate Supply, The Short Run trade-off between Inflation and Unemployment</td><td colspan="2">Textbook –
Principles of Economics, 6th Edition (CENGAGE Learning),
by N Gregory Mankiw</td></tr>
<tr><td colspan="2">Course Format:
3Classes/Week, 1 hr/Class,
3 Credits</td></tr>
</table>

2. Course Outcomes (COs) and Mapping Course Outcomes with Program Outcomes (POs)

Course Outcomes		Program Outcomes
CO1	Be able to analyze how different economies across the globe, gains from trade by using absolute and comparative advantage as the basis.	PO6
CO2	Be able to construct Consumer Price Index (CPI) and analyze its impact on the cost of living and standard of living of the consumers in an economy.	PO6
CO3	Be able to measure national income and economic growth, and analyze their relationship with consumption, saving, investment, and productivity	PO6
CO4	Be able to analyze the role of financial markets and financial intermediaries in coordinating the activities of the savers and investors, and various tools used in regulating money supply in the economy.	PO6
CO5	Be able to analyze the economic feasibility of project proposals.	PO11
CO6	Be able to measure unemployment, and analyze the short-run fluctuations in economic activities through aggregate demand and aggregate supply model.	PO6

*Refer Appendix for list of POs

3. Course Articulation Matrix

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	0	0	0	0	0	2	0	0	0	0	0	0
CO2	0	0	0	0	0	2	0	0	0	0	0	0
CO3	0	0	0	0	0	2	0	0	0	0	0	0
CO4	0	0	0	0	0	2	0	0	0	0	0	0
CO5	0	0	0	0	0	0	0	0	0	0	2	0
CO6	0	0	0	0	0	2	0	0	0	0	0	0

*0: No correlation, 1: Slight (Low), 2: Moderate, 3: Substantial (High)

*Refer Appendix for list of POs

4. Justifications of Mapping

Components	Statement		
CO	**CO1:** Be able to analyze how different **economies across the globe**, gains from trade by using absolute and comparative advantage as the basis.		
PO	**PO6 -** The engineer and society: Apply reasoning informed by the contextual knowledge to assess **societal,** health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.		
CO1-PO6 Correlation justification	Be able to analyse the effect of trade, both domestic and international, on **economic growth**		
% of Mapping	50%	Level of correlation	2
CO	**CO2:** Be able to construct Consumer Price Index (CPI) and analyze its impact on the cost of living and standard of living of the consumers in an **economy.**		
PO	**PO6 –** The engineer and society: Apply reasoning informed by the contextual knowledge to assess **societal**, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.		
CO2-PO6 Correlation justification	Be able to analyse how change in the price level affects both people's living standard as well **economic growth**		
% of Mapping	50%	Level of correlation	2
CO	**CO3**: Be able to measure national income and **economic growth**, and analyze their relationship with consumption, saving, investment, and productivity		
PO	**PO6 –** The engineer and society: Apply reasoning informed by the contextual knowledge to assess **societal,** health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.		
CO3-PO6 Correlation justification	Be able to analyse how fluctuation in consumption, saving, investment, and Govt. expenditure affects **GDP and economic growth**		
% of Mapping	50%	Level of correlation	2
CO	**CO4:** Be able to analyze the role of financial markets and financial intermediaries in coordinating the activities of the savers and investors, and various tools used in regulating **money supply in the economy**.		
PO	**PO6 –** The engineer and society: Apply reasoning informed by the contextual knowledge to assess **societal**, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.		
CO4-PO6 Correlation justification	Be able to analyse how money supply influences price level and **growth of an economy.**		
% of Mapping	50%	Level of correlation	2
CO	**CO5:** Be able to analyze the economic feasibility of **project proposals.**		
PO	**PO11 – Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.		
CO5-PO11 Correlation justification	Be able to examine the **economic feasibility of single and alternative projects** by evaluating their **cost and benefits**		
% of Mapping	67%	Level of correlation	2
CO	**CO6:** Be able to measure unemployment, and analyze the short-run fluctuations in **economic activities** through aggregate demand and aggregate supply model.		
PO	**PO6 –** The engineer and society: Apply reasoning informed by the contextual knowledge to assess **societal**, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.		
CO6-PO6 Correlation justification	Be able to analyse why unemployment arises in an **economy** and how it affects the **economic growth process**.		
% of Mapping	50%	Level of correlation	2

5. Grading Pattern and Components of Evaluation

The Subject, Principles of Macroeconomics (HSS 2021), has 3 Credits, and belongs to Grading Pattern 6. The **Six Grading Pattern** will be for those Subjects which are of 3 credits and having only theory components and no laboratory/practical components. The breakdown required for the calculation of the Numeric Score (out of 100) for Grading Pattern 6 is given below.

ATTENDANCE	5
ASSIGNMENTS	10
QUIZZES	10
MID TERM	15
TOTAL INTERNAL	40

THEORY EXAM	60
TOTAL EXTERNAL	60

6. Tentative Lesson Plan

Lecture	Tasks	Mapping with COs
L-1	Review of the concept of opportunity cost and production possibilities frontier (PPF)	**CO1**
L-2	The concepts of absolute advantage and comparative advantage	**CO1**
L-3	The price of the trade and Gains from trade	**CO1**
L-4	Problem solving and analysis session relating to basis of trade, pattern of trade, terms of trade and gains from trade.	**CO1**
L-5	Concept of cost of living and standard of living; construction of consumer price Index (CPI)	**CO2**
L-6	Problems in measuring the cost of living	**CO2**
L-7	Indexation, Real and Nominal Interest Rates	**CO2**
L-8	Problem solving and analysis session relating to CPI, real and nominal interest rate.	**CO2**
L-9	Review of circular flow of income model with withdrawals and injections	**CO3**
L-10	Concept of GDP, GNP, NDP, NNP	**CO3**
L-11	Components of GDP	**CO3**
L-12	Income, Expenditure & value-added approach to measure GDP	**CO3**
L-13	Real GDP, Nominal GDP, GDP Deflator & Inflation	**CO3**
L-14	Problem solving and analysis session relating to GDP Deflator, inflation rate and GDP growth.	**CO3**
L-15	Concept of Economic growth, Economic growth around the	**CO3**

Lecture	Tasks	Mapping with COs
	world, GDP growth rate, productivity vs. per-capita income.	
L-16	Economic growth and public policy	**CO3**
L-17	Problem solving and analysis session relating to catch-up effect and law of diminishing marginal return.	**CO3**
L-18	Saving and investment in National Income Accounting framework	**CO3**
L-19	The market for loanable funds: Supply & demand for loanable funds, determination of equilibrium interest rate.	**CO3**
L-20	Analysing the impact of budget deficit, budget surplus, saving incentive, and investment incentive on saving, investment, and real interest rate; crowding-out effect.	**CO3**
L-21	Financial system: Financial Market (stock market and bond market)	**CO4**
L-22	Financial system: Financial intermediaries (mutual fund)	**CO4**
L-23	Bank: Commercial banks and its functions; credit creation	**CO4**
L-24	Bank: Central bank and its functions; Money supply	**CO4**
L-25	The classical theory of inflation: money supply, money demand, and monetary equilibrium;	**CO4**
L-26	Quantity Theory of Money; cost of inflation	**CO4**
L-27	The inflation Tax, The Fisher effect	**CO4**
L-28	Tools of monetary control	**CO4**
L-29	Time Value of Money - simple and compound interest; concept of single payment and uniform series payment cash flow.	**CO5**
L-30	Evaluating project proposals by using present worth method	**CO5**
L-31	Evaluating project proposals by using future worth method	**CO5**
L-32	Evaluating alternative project proposals by using Future Worth and Present Worth Method	**CO5**
L-33	Concept and types of unemployment.	**CO6**
L-34	Measuring U-rate, Labor force, LFPR; Natural rate of unemployment.	**CO6**
L-35	Analysis session relating to causes of NRU (Minimum wage policy, Labor Union and efficiency wage theory)	**CO6**
L-36	The concept of aggregate demand, aggregate demand curve, shifting of aggregate demand curve	**CO6**
L-37	The concept of aggregate supply, aggregate supply curve, shifting of aggregate supply curve, Aggregate demand and aggregate supply together	**CO6**
L-38	Short run economic fluctuations and causes	**CO6**
L-39	Aggregate demand, aggregate supply and Phillips curve	**CO6**
L-40	The short run Phillips curve and long run Phillips curve	**CO6**

7. Assessment Rubric for the Course

Method: Assignments, Quiz, Mid-Semester, and End-Semester Exam

Outcomes Assessed:

PO6 - The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.

PO11 - Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

Mid-Semester and End-Semester Examination Rubrics			
Performance	**High (2 Marks)**	**Medium (1-1.5 Marks)**	**Low (0.5 Marks)**
Theoretical representation of the concepts	Properly able to define, represent, and interpret the theoretical/logical significance.	Minor errors in definition, representation, and interpretation of theoretical/logical significance.	Incomplete or poor definition, representation and interpretation of theoretical/logical significance.
Pictorial/ Graphical representation of ideas	Neat, clean and proper sketches, graphs with proper labelling and interpretation.	Sketches and Graphs are drawn but interpretation of significance is not done or labelling is missing.	The pictures are unclear/not labelled and the interpretation is inappropriate.
Solving numerical/ mathematical problems and interpreting the results	Selection of appropriate concepts and translate it to algebraic/ mathematical forms, solve the problems, got correct results, and interpret the results.	Selection of appropriate concepts and translate it to algebraic/mathematical forms, solve the problems and got the correct results, but error in the interpretation of the results.	Able to select appropriate concepts and translate it to algebraic/mathematical forms, but error in problem solving, results, and in interpretation.

Rubrics for Assignments			
Performance	**High (9-10 Marks)**	**Medium (7-8 Marks)**	**Low (4-6 Marks)**
Completion and Submission of Assignments	Completed and submitted all assignments within deadline. The answers are depicted correctly, completely, and in a neat and clean manner. The answers may be unique/innovative.	Completed and submitted above 80% of the assignments. Submission is by the due date. The answers were fairly represented.	Completed 60% of the assignments. The submissions were made after repeated reminders, and in the extended deadline period. The answers were fairly represented.

Rubrics for Quiz			
Performance	**High (9-10 Marks)**	**Medium (7-8 Marks)**	**Low (4-6 Marks)**
Short/Long Answer Type Questions	The student has answered all the questions correctly and depicted them in a neat and clean manner, with appropriate explanation.	The student has answered most of the questions correctly and depicted them in a satisfactory manner.	The student has answered some of the questions correctly, though, with improper /erroneous/incomplete justification of the same.
MCQ Type Questions	The student has attended all the quizzes and answered all the questions correctly.	The student has attended most of the quizzes and answered most of the questions correctly.	The student has attended some of the quizzes and answers few of the questions correctly.

8. Course Related Surveys

Pre-requisite Survey: The objective of this survey is to know the basic understanding and different skills relevant to the subject, i.e., Principles of Macroeconomics (HSS 2021). Please respond to the questions by clicking any one of the options against each of the following questions.

1. Ability to transform theoretical concept into graphical models

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

2. Ability to solve numerical and to plot graphs.

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

3. Basic knowledge on the law of demand and law of supply

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

4. Basic knowledge on consumption, saving, and investment

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

5. Basic knowledge on domestic and international trade

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

6. Basic knowledge on project management

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

7. Basic knowledge on Banking System in an economy

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

8. Basic knowledge on stock market and bond market

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

9. Basic knowledge on unemployment

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

10. Basic knowledge on Business Cycle

(a) Low Understanding *(b) Medium* *(c) Adequate/High*

Interim Course Progress Survey: The objective of this survey is to know the students' progress in basic understanding and attaining different outcomes relevant to the subject, i.e., Principles of Macroeconomics (HSS 2021). Please respond to the questions by clicking any one of the options against each of the following questions. The outputs will be shared with the respective Faculty Advisors for further necessary actions.

Course End Survey: The objective of this survey is to know the attainment of the outcomes relevant to the subject, i.e., Principles of Macroeconomics (HSS 2021). Please respond to the questions by clicking any one of the options against each of the following questions.

APPENDIX I – VISION

The Siksha 'O' Anusandhan will be a leading institution of higher learning in its chosen areas of concentration, preparing future generations through quality teaching and innovative research and will emerge as a comprehensive and socially inclusive University in the country for professional advancements in related disciplines.

APPENDIX II – MISSION

- Educate students to become responsible, enlightened, and productive citizens;
- Conduct scholarship and promote entrepreneurship that improve the human condition;
- Serve business, education, government, health care systems, and community; and
- Enhance the cultural environment of the region.

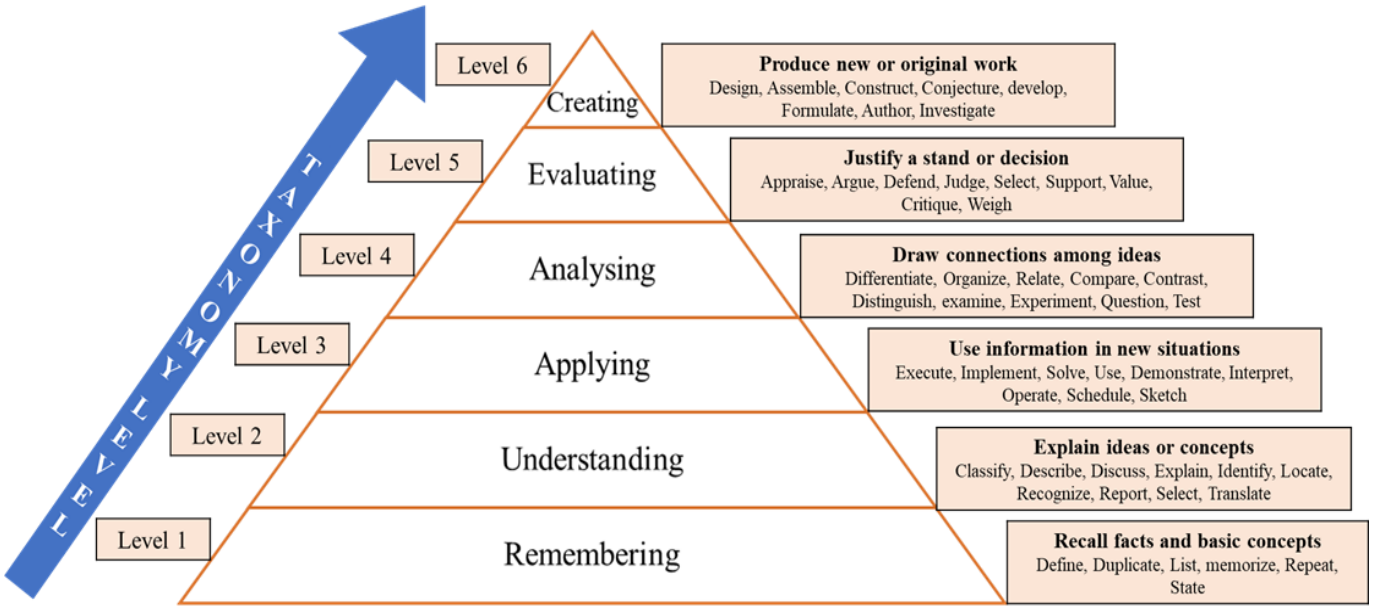
APPENDIX III – PROGRAM EDUCATIONAL OBJECTIVES (PEO)	
1	Our Graduates will have successful professional careers in industry, government, academia or non-profit organisations.
2	Our Graduates will effectively lead, work and communicate in multidisciplinary teams and apply sound engineering principles and design methodology to solve societal problems.
3	Our Graduates will maintain currency in their chosen field through higher study, through organizational participation and through participation in professional developmental activities.

APPENDIX IV – PROGRAM SPECIFIC OUTCOMES (PSO)	
PSO1	The ability to understand, analyze, and develop computer programs in the areas related to business intelligence, web design, and networking for efficient design of computer-based systems of varying complexities.
PSO2	The ability to apply standard practices and strategies in software development using open-ended programming environments to deliver a quality product for business success.

APPENDIX V – PROGRAM OUTCOMES (PO)	
POs	**Description**
PO1	**Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the

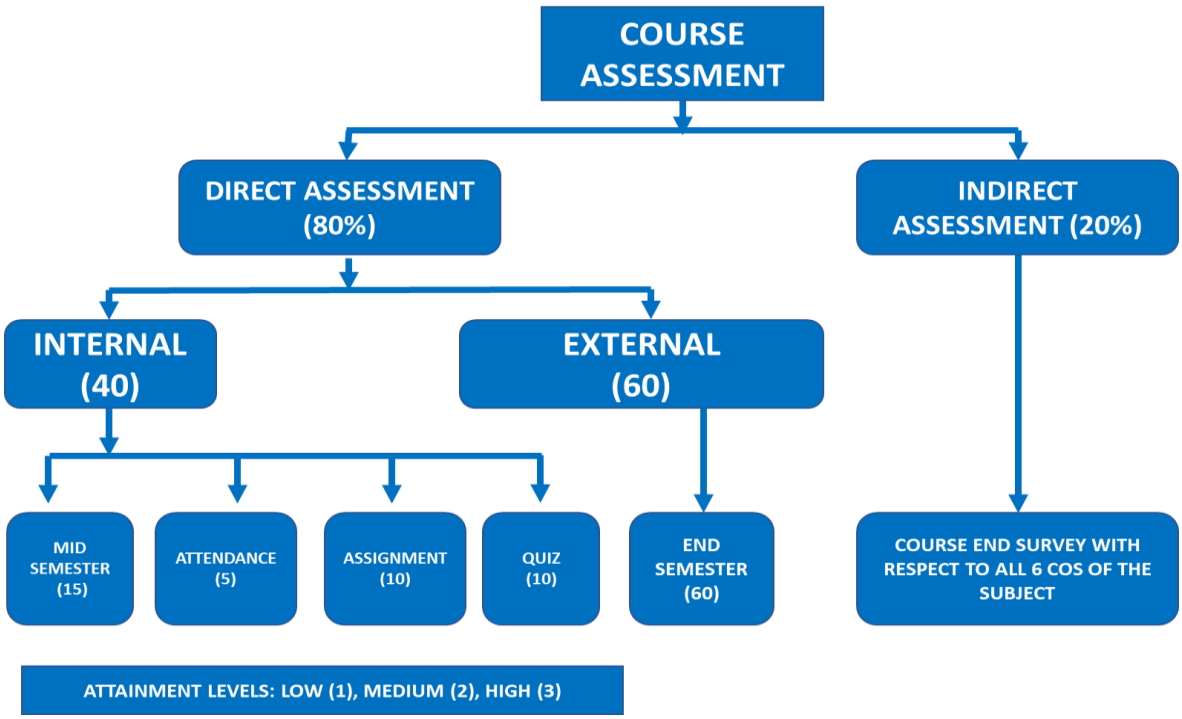
APPENDIX V – PROGRAM OUTCOMES (PO)	
	limitations.
PO6	**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilitiesrelevant to the professional engineering practice.
PO7	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, andneed for sustainable development.
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	**Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and giveand receive clear instructions.
PO11	**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	**Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

APPENDIX VI – BLOOM'S TAXONOMY

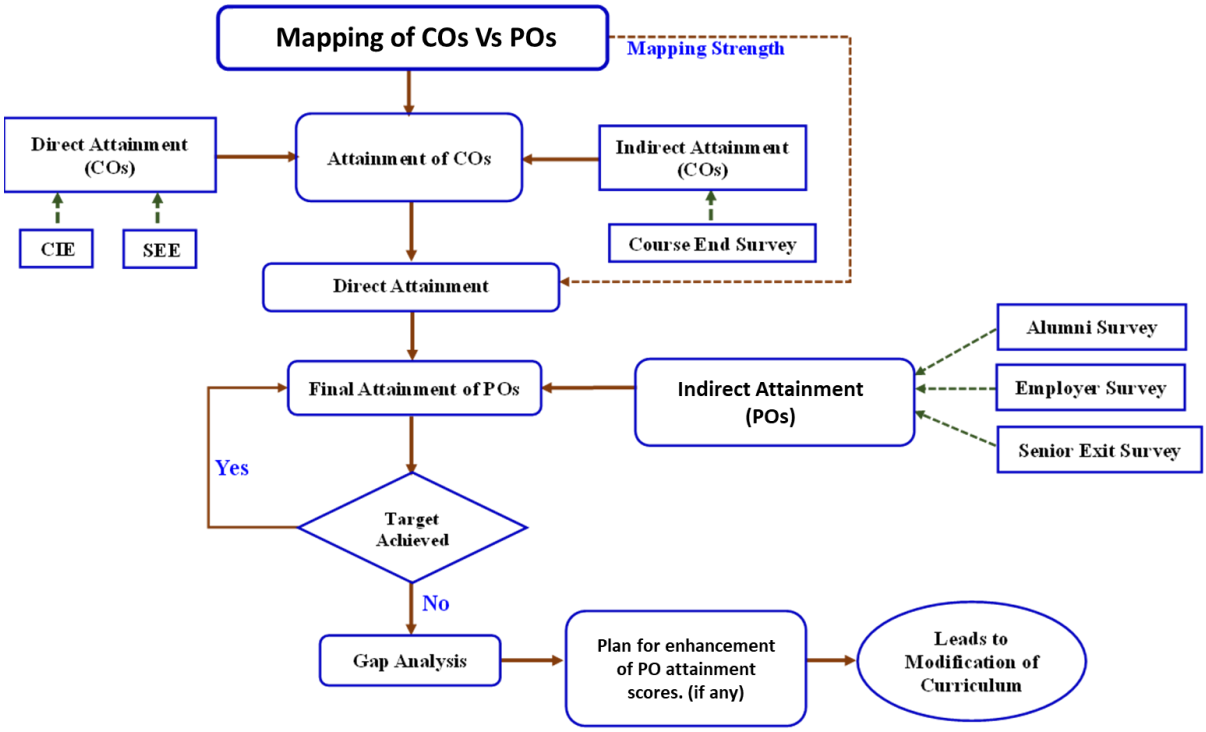


In this subject, Levels 1–4 of Bloom's Taxonomy, i.e., Remembering–Analysing are covered.

APPENDIX VII – COURSE ASSESSMENT (FOR GRADING PATTERN 6)



APPENDIX VIII – ATTAINMENT OF COs & POs



APPENDIX IX – GRADING SYSTEM

Performance	Letter grade	Grade Point Per Credit
Outstanding	O	10
Accomplished	A	9.5
Impressive	B	8.5
Encouraging	C	7.5
Acceptable	D	6.5
Must do better	E	5.5
Fail	F	0

PERCENTAGE EQUIVALENCE CONVERSION FOR CGPA:

Percentage of Marks = CGPA Multiplied by 10

APPENDIX IX – 9 RELATIVE GRADING

LETTER GRADE	STUDENTS RANGE	GRADE POINT
O	Top 5%	10
A	Next 10%	9.5
B	Next 20%	8.5
C	Next 30%	7.5
D	Next 20%	6.5
E	Remaining Students having Numeric Score >= 40	5.5
F	Numeric Score < 40	0

The minimum possible cutoff used for “E” grade is 40 (Internal + External), i.e., if the marks obtained are less than 40 (Internal + External) then the student won't be given an "E" grade (or above) in a particular instance of the Subject irrespective of value of cutoff for “E” grade.

The Relative Grading System will only be applicable for those subjects which follow Grading Patterns 1, 2, and 6. For Relative grading to be applicable, the number of students in the subject will need to be at least 12. Absolute Grading will be applicable otherwise.

APPENDIX X – 10. GRADUATION CGPA REQUIREMENTS

The Minimum Cumulative Grade Point Average required for Graduation is **6.0**, i.e., a student can only be considered for graduation if and only if his/her Cumulative Grade Point Average (after complying with all the requirements of the (Deemed to be University) and the Constituent College required for graduation) is **greater than or equal to 6.0 (six point zero)**.

APPENDIX XI – 11. MINIMUM REQUIREMENTS FOR A PASSING GRADE

The Minimum Attendance and Numeric Score Requirements for a passing grade at Institute of Technical Education and Research (ITER), Siksha ‘O’ Anusandhan (Deemed to be University) which will be followed from admission year 2018-2019.

NUMERIC SCORE REQUIREMENTS	
INTERNAL	16
EXTERNAL	24
TOTAL	40

ATTENDANCE REQUIREMENTS	
ATTENDANCE	75%

APPENDIX XII – 12. APPEARING THE (DEEMED TO BE UNIVERSITY) EXAM

The Minimum Numeric Score and Attendance Requirements for appearing the External Exam of a subject are as mentioned below.

NUMERIC SCORE REQUIREMENTS (For External Exam)	
INTERNAL COMPONENT	16

ATTENDANCE REQUIREMENTS (For External Exam)	
ATTENDANCE	75%