



COURSE OUTCOMES AND PROGRAM OUTCOMES

Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs)

(Program Outcomes as mentioned in Annexure I and Program Specific Outcomes as defined by the Program)

PO.1.Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO.2.Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO.3.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.

PO.4.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.

PO.5.Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO.6.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.

PO.7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO.8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO.9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO.10. 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 give and receive clear instructions.

PO.11. 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.

PO.12. 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.


PRINCIPAL
Avanthi Institute of Engg. & Tech.
Gunthapally (V), Abdullapurmet (Mdl.), R.R. Dist.

PSO1: Design, implement, test and evaluate a computer system, component, or algorithm to meet desired needs and to solve a computational problem

PSO2: Ability to analyze, design and implement hardware and software components.

Course Outcomes (COs)

Note: Number of Outcomes for a Course is expected to be around 6.

Course Name : Data Structures ;

Year of Study : II-I;

Academic year : 2020-21

Upon Completion of the course student will be able to:

DS.CO1	Identify, understand and determine the usage of various data structures operations and associated algorithms.
DS.CO2	Analyze and compare the efficiency of various algorithms.
DS.CO3	Implement applications using basic data structures such as arrays, stacks, queues and linked lists.
DS.CO4	Understand the concept of trees and graphs and their implementation using basic data structures and algorithms.
DS.CO5	Design and apply different data structure using simple algorithms for modeling and solving given computing problems
DS.CO6	Compare and contrast the cost and benefits of dynamic and static structure implementations

Course Name: Database management systems;

Year of Study: II-II;

Academic year: 2020-21

Upon Completion of the course student will be able to:

DBMS.CO1	Identify the importance of DBMS and describe fundamental elements of a relational data model
DBMS.CO2	Explain the basics of SQL and construct queries using relational algebra and apply query processing and optimization
DBMS.CO3	Develop skills to use commercial relational database system
DBMS.CO4	Select design principles for logical design of databases including E-R method and normalization approach
DBMS.CO5	Elaborate the basic issues of transaction processing, concurrency control, and recovery techniques
DBMS.CO6	Explain teamwork by design and development of a database application system


PRINCIPAL
Avanathi Institute of Engg. & Tech.
Guntur (M), Abdulapuram (Nidi), R.R. Dist.

Course Name:OPERATING SYSTEMS;

Year of Study: III-I;

Academic year :2020-21

Upon Completion of the course student will be able to:

OS.CO1	Tell the working of an operating system and its components
OS.CO2	Demonstrate the process management and analyze the synchronization process
OS.CO3	Identify the working methodology of multithreaded applications and distinguish different scheduling algorithms
OS.CO4	Discover the reason of deadlocks and their remedial measures in an operating system
OS.CO5	Select different memory management techniques used in an operating system
OS.CO6	Compare different file systems and apply the knowledge earned into various operating systems.

Course Name:Object oriented modeling and design ;

Year of Study: II-I;

Academic year :2020-21

Upon Completion of the course student will be able to:

OOAD.CO1	Define system requirements and apply model for problem domains
OOAD.CO2	Explain the model by performing analysis process
OOAD.CO3	Design and build object oriented system with different architectural frame works
OOAD.CO4	Analyze object oriented design with suitable frame works
OOAD.CO5	Develop skills to demonstrate object oriented concepts
OOAD.CO6	Be familiar with the application of UML towards analysis and design

Course Name:Unix shell programming ;

Year of Study: IV-I;

Academic year :2020-21

Upon Completion of the course student will be able to:

LP.CO1	Have a fundamental understanding about the development of open source software based architecture of UNIX
LP.CO2	Discuss about different flavours in UNIX
LP.CO3	Develop skills to use UNICX tools like grep,sed,awk etc for large scale text processing
LP.CO4	List small to medium sized shell scripts to complete various computing tasks
LP.CO5	Explain the GUI of LINUX and UNIX systems
LP.CO6	Analyze reactive power control schemes

Course Name: Scripting Language;
Year of Study: II-I;
Academic year :2020-21

Upon Completion of the course student will be able to:

SL.CO1	To understand tables, layers ,frames, forms, and css
SL.CO2	To explain the evaluation of different tags
SL.CO3	Classify the strengths and weakness of scripting language including perl and python
SL.CO4	Choose substantial Perl scripts when appropriate reusing previously created scripts
SL.CO5	Develop java scripts and jquery scripts .
SL.CO56	Compare and contrast different input validation schemes

CO-PO matrices of courses selected (six matrices to be mentioned; one per semester from 3rd to 8th semester)

II-I DATA STRUCTURES

COURSE OUTCOME	PROGRAMME OUTCOME											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
DS.CO1	3	3	3	2	2	2	3		2	2		2
DS.CO2				3			2					
DS.CO3	3			2								
DS.CO4			3									
DS.CO5	2	3										
DS.CO6		3					1					
CO attainment	2.3	3	3	3	0		2					

II-II DATABASE MANAGEMENT STSTEM (CS010 503)

COURSE OUTCOME	PROGRAMME OUTCOME											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
DBMS.CO1	--	2	--	--	3	--	--	--	--	--	--	--
DBMS.CO2	3	--	2	3	--	--	--	--	--	--	--	--
DBMS.CO3	--	--	--	3	--	3	--	--	--	--	--	--
DBMS.CO4	--	--	--	--	--	2	3	--	--	--	--	--
DBMS.CO5	3	--	2	--	--	--	--	--	--	--	--	--
CO attainment	3		2	3	3	3	3					

III-I Operating Systems

COURSE OUTCOME	PROGRAMME OUTCOME											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
OS.CO1	--	--	3	--	--	2	2	--	2	2	--	2
OS.CO2	2	2	--	--	2	--	--	2	--	3	--	--
OS.CO3	--	3	2	2	--	--	2	3	2	--	2	2
OS.CO4	2	--	3	--	2	--	--	--	--	--	--	--
OS.CO5	--	3	3	--	--	2	--	2	--	--	3	2
OS.CO6	2	--	2	--	2	--	--	--	3	2	2	2
CO attainment	0	3	3	0	2	0	0	0	3	3	--	--


PRINCIPAL
Avanathi Institute of Engg. & Tech.
 Gunthapally (V), Abdullapurmat (Nidi), R.R. Dist.

III-II OBJECT ORIENTED MODELLING and DESIGN

COURSE OUTCOME	PROGRAMME OUTCOME											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
OOAD.CO1	--	--	3	3	--	2	--	--	2	--	2	2
OOAD.CO2	3	3	--	--	--	2	--	--	2	--	--	--
OOAD.CO3	--	--	3	--	--	2	--	2	--	2	2	2
OOAD.CO4	--	--	--	3	--	--	2	--	2	--	--	--
OOAD.CO5	3	--	--	3	--	--	--	--	--	2	3	--
OOAD.CO6	--	3	--	--	--	2	2	--	2	--	--	--
CO attainment	3	3	3	3	0	0	0	0	2	0	0	0

IV-I Unix Shell Programming

COURSE OUTCOME	PROGRAMME OUTCOME											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
LP.CO1	3	--	3	--	--	2	--	--	--	2	--	1
LP.CO2	2	--	--	3	--	--	2	2	--	--	--	--
LP.CO3	3	--	2	--	--	--	--	--	3	2	2	--
LP.CO4	--	2	3	--	--	--	2	--	--	--	--	--
LP.CO5	--	--	--	3	--	--	--	2	--	3	2	--
LP.CO6	--	--	--	--	--	--	--	--	3	--	--	--
CO attainment	2.3	2	2.6	3	0	2	2	2	3	2.3	2	1


 PRINCIPAL
 Avanthi Institute of Engg. & Tech.
 Gunthapally IV, Abdullapurmet (Nid.), R.R. Dist.

IV-II SCRIPTING LANGUAGE

COURSE OUTCOME	PROGRAMME OUTCOME											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
SL.CO1	3	--	3	--	--	--	--	--	--	2	--	--
SL.CO2	2	--	--	3	--	--	2	--	--	--	--	--
SL.CO3	3	--	2	--	--	--	--	--	--	--	--	--
SL.CO4	--	--	3	--	--	--	--	1	--	--	--	3
SL.CO5	--	--		3	2					3		
SL.CO6	--	--	--	--	--	--	2	--	--	--	--	
CO attainment	2.6	0	2.3	3	2	0	2	1	0	2.5	0	3

Note:

1. Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

If there is no correlation, put "--"

2. Similar table for PSOs

CO	PSO1	PSO2
DS.CO1	3	--
DS.CO2	--	2
DS.CO3	2	--
DS.CO4	2	--
DS.CO5	--	2
DS.CO6	1	--
	2	2

CO	PSO1	PSO2
DBMS.CO1	2	--
DBMS.CO2	--	--
DBMS.CO3	2	--
DBMS.CO4	--	2
DBMS.CO5	3	--
DBMS.CO6	--	2
	2.3	2

Table – 2.1.2.8

CO	PSO1	PSO2
OS.CO1	3	--
OS.CO2	2	--
OS.CO3	--	--
OS.CO4	2	--
OS.CO5	--	2
OS.CO6	--	2
	2.3	2

Table – 2.1.2.9

CO	PSO1	PSO2
OOAD.CO1	--	3
OOAD.CO2	2	--
OOAD.CO3	--	2
OOAD.CO4	--	2
OOAD.CO5	1	--
OOAD.CO6	--	3
	1.5	2.5

Table – 2.1.2.10

CO	PSO1	PSO2
LP.CO1	--	3
LP.CO2	--	--
LP.CO3	2	--
LP.CO4	2	--
LP.CO5	2	2
LP.CO6	--	1
	2	2

Table – 2.1.2.11

CO	PSO1	PSO2
SL.CO1	1	--
SL.CO2	2	--
SL.CO3	--	2
SL.CO4	--	2
SL.CO5	3	--
SL.CO6	--	2
	2	3

Table – 2.1.2.12

Program level Course-PO matrix of all courses INCLUDING first year courses:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101	3	3	2	-	-	-	-	-	-	3	1	-
C202	3	2	2	3	2	-	-	-	-	3	-	-
C303	2	-	2	2	3	-	-	-	3	-	-	-
...	2	3	2	3	-	1	-	-	3	-	-	2
C4..	3	3	3	2	3	-	-	-	-	-	3	3
	2	3	3	3	2	-	-	3	-	2	-	3

Note:

1. Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

It may be noted that the contents of Table 3.1.2 must be consistent with information available in for all courses.

COURSE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ENGLISH-I					2				2	3	2	2
MATHEMATICS-I	3	3	3		3						3	2
MATHEMATICAL METHODS	3	3	3		2						2	2
ENGINEERING PHYSICS	3	2		2	3						3	2
ENGINEERING CHEMISTRY					2	2	2	3		2	3	
COMPUTER PROGRAMMING		3	2	2	2						2	
ENGINEERING DRAWING					2		3		2	3	2	2
COMPUTER PROGRAMMING LAB	2	2	2	3					2			
EP/EC LAB	2	2	2	2					2			
ELCS LAB-1	2		2	2					2			
IT/ENGINEERING WORKSHOP					2		3		2	3	2	2
PROBABILITY AND STATISTICS	3	3	2		2						2	2
MFCS	3	2		2	2						2	
DATA STRUCTURES	2	3		2			2					2
DIGITAL LOGIC DESIGN	2	2		2			2		2			2
EDC	3	2		2	2						2	
BEE	2	2		2			2		2			3
EE LAB					3		2		2	3	2	2
DS LAB	2	3	2	2	2						2	
CO	3	1	2		2	2	-					
DBMS	3	2	3	3			2					
JAVA PROGRAMMING	3	3							2			
ES	2	2	2	2						2		2
FLAT	3	2	2		2						2	
DAA	2	2							2	2		

JAVA LAB	3	2	3	2	2				2	2		
DBMS LAB	2	2	2	2								2
PPL	1	3	2		2					2	2	2
HVPE	3	2	2	2								
SE	2	3	2	2						2		
CD	2						2	2				2
OS	3	3					2					
CN	2	2							2	2		
OS LAB	3	2							2	2		
CD LAB	2		2			2	3					
DS		2	3		2						2	2
IS	2	2		3						2	-	2
OOAD	3	2	2				3		3			
STM	2	2	2		3						2	
MEFA	3	2	2									
WT	2		2		2					3		
CT&WT	2	2					2		2			
AECS LAB	2					2		3				2
LP	3			2		2			2			
DP	2		2		2						2	2
DWANDDM	2		2		2							2
CC	2					2		2				2
MC	2			2					3			
AI	2	2		2	2						2	3
LP LAB	2		2	2					2	2		
DW&M LAB	2		2		2				2	2		
MS	2	3	2			2	3				2	
SL	3		3	3	2					3		3
DBS	2		3	2								
MINI PROJEST	3	3			2		3					
SEMINAR	2.		2		2						2	
PROJECT WORK	3		3		3						3	
VIVA	2	2			3				3	2		


 PRINCIPAL
 Avanathi Institute of Engg. & Tech.
 Gunthapalli (V), Abdullapurmet (Mdl.), R.R. Dist.

2. Similar table for PSOs

Course	<i>PSOI</i>	<i>PSO2</i>
ENGLISH-I		2
MATHEMATICS-I		2
MATHEMATICAL METHODS	2	2
ENGINEERING PHYSICS	2	2
ENGINEERING CHEMISTRY		1
COMPUTER PROGRAMMING		2
ENGINEERING DRAWING	2	2
COMPUTER PROGRAMMING LAB		2
EP/EC LAB		2
ELCS LAB-1	2	2
IT/ENGINEERING WORKSHOP		2
PROBABILITY AND STATISTICS	2	2
MFCs		2
DATA STRUCTURES	2	1
DIGITAL LOGIC DESIGN	2	2
EDC		2
BEE		2
EE LAB	2	
DS LAB		2
CO		1
DBMS	2	
JAVA PROGRAMMING		2
ES	2	
FLAT	1	
DAA		2
JAVA LAB	2	
DBMS LAB		2
PPL		1
HVPE	2	
SE	2	2
CD	1	
OS	2	
CN	2	
OS LAB	2	
CD LAB	2	
DS		2

IS	2	2
OOAD		2
STM		2
MEFA		2
WT	2	
CT&WT		2
AECS LAB		2
LP	2	
DP		2
DWANDDM	2	
CC	1	
MC	1	2
AI		2
LP LAB	2	
DW&M LAB	2	
MS	2	
SL	2	
DBS		2
MINI PROJEST	2	
SEMINAR		2
PROJECT WORK	3	
VIVA		2


 PRINCIPAL
 Avanithi Institute of Engg. & Tech.
 Gunthapalli (V), Abdullapurmet (Nidi.), R.R. Dist.

Attainment of Course Outcomes

Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based.

(Examples of data collection processes may include, but are not limited to, specific exam/tutorial questions, assignments, laboratory tests, project evaluation, student portfolios (A portfolio is a collection of artifacts that demonstrate skills, personal characteristics and accomplishments created by the student during study period), internally developed assessment exams, project presentations, oral exams etc.)

\

Step1: AIET collected the exam marks from Exam branch.
Internal – sample form and University Exam – Sample form
are shown after the procedure.

Step 2: One Sample excel sheet was developed internally for assessments.

Step 3: Copied the exam results to the developed excel sheet & calculated assessment from 1st internal exam; 2nd internal exam and university. From assessment – average Mark, % average mark and CO attainments.

Sample CO Attainment calculations of Internal Examinations (IV year 1Ind Semester) (2020-21)

Roll No	DA	MIS	Web& SOA	MAJOR
17Q61A0501	24	25	24	24
17Q61A0503	23	24	24	23
17Q61A0505	24	23	23	21
17Q61A0506	24	24	24	19
17Q61A0508	21	23	24	19
17Q61A0509	24	25	24	22
17Q61A0510	24	23	23	19
17Q61A0511	23	24	23	21
17Q61A0513	21	21	24	18
17Q61A0514	24	24	24	23
17Q61A0515	24	25	24	21
17Q61A0516	24	25	24	24
17Q61A0520	22	24	23	20
17Q61A0521	24	25	24	24
17Q61A0522	23	23	24	24
17Q61A0523	22	24	23	21
17Q61A0524	22	24	23	19
17Q61A0525	23	21	24	24
17Q61A0526	25	24	25	22
17Q61A0528	24	25	23	24
17Q61A0531	19	19	22	19
17Q61A0532	24	25	23	22
17Q61A0534	24	24	21	18
17Q61A0536	19	19	22	19
17Q61A0540	24	25	23	18
17Q61A0541	24	25	23	23
17Q61A0542	24	25	23	22
17Q61A0543	22	24	23	19

17Q61A0544	25	25	25	18
17Q61A0545	22	24	24	19
17Q61A0546	24	25	23	18
17Q61A0547	24	24	21	20
17Q61A0548	25	23	25	24
17Q61A0549	21	24	24	20
17Q61A0550	24	24	24	22
17Q61A0552	24	25	23	23
17Q61A0553	24	24	21	24
17Q61A0554	25	23	25	18
17Q61A0555	24	25	24	24
17Q61A0557	24	25	24	22
17Q61A0558	24	24	24	23
17Q61A0559	24	24	23	23
17Q61A0560	23	25	23	21
17Q61A0561	24	25	23	22
17Q61A0562	24	24	21	24
17Q61A0566	25	23	25	18
17Q61A0567	23	23	23	22
17Q61A0568	22	23	24	19
17Q61A0574	24	25	23	18
17Q61A0575	24	24	21	22
17Q61A0577	25	23	25	24
17Q61A0580	24	25	24	24
18Q65A0502	21	23	24	21
18Q65A0503	24	23	24	18
18Q65A0505	22	25	24	24
18Q65A0506	24	25	23	22
18Q65A0508	24	25	23	18
18Q65A0510	24	24	21	24
18Q65A0511	25	23	25	22
18Q65A0512	23	23	22	22
18Q65A0515	22	25	24	24
18Q65A0516	23	24	23	22
18Q65A0519	23	23	24	20
AVERAGE	23.4	23.9	23.4	21.3
AVERAGE %	93.5%	95.5%	93.5%	85.1%
co attainment	3	3	3	3


 PRINCIPAL
 Avanthi Institute of Engg. & Tech.
 Gunthapally (V), Abdullapurmet (Md.), R.R. Dist.

**Sample PO Attainment calculations of University Examinations (IV year II nd Semester)
(2020-21)**

HTNO	DATA ANALYTICS	MANAGEMENT INFORMATION SYSTEMS	WEB SERVICES AND SERVICE ORIENTED ARCHITECTURE	MAJOR PROJECT
17Q61A0501	31	41	26	72
17Q61A0503	33	43	26	72
17Q61A0505	27	33	26	70
17Q61A0506	31	26	26	72
17Q61A0508	26	26	37	70
17Q61A0509	33	52	26	72
17Q61A0510	34	27	30	69
17Q61A0511	28	27	26	72
17Q61A0513	26	34	32	69
17Q61A0514	29	55	33	72
17Q61A0515	27	33	26	72
17Q61A0516	26	40	37	72
17Q61A0520	35	26	26	70
17Q61A0521	28	48	37	72
17Q61A0522	27	30	26	72
17Q61A0523	35	26	26	72
17Q61A0524	35	26	26	72
17Q61A0525	27	55	34	72
17Q61A0526	40	33	40	72
17Q61A0528	26	52	26	72
17Q61A0531	70	69	72	72
17Q61A0532	26	52	26	72
17Q61A0534	27	55	34	69
17Q61A0536	70	69	72	72
17Q61A0540	26	33	26	69
17Q61A0541	26	40	26	73
17Q61A0542	26	52	26	72
17Q61A0543	35	26	26	72
17Q61A0544	40	40	40	69
17Q61A0545	27	26	26	70
17Q61A0546	26	52	26	69
17Q61A0547	27	55	34	71
17Q61A0548	40	28	40	72
17Q61A0549	35	26	26	70
17Q61A0550	26	26	26	72
17Q61A0552	26	52	26	72
17Q61A0553	27	55	34	72
17Q61A0554	40	28	40	69
17Q61A0555	35	43	32	72
17Q61A0557	39	29	26	72
17Q61A0558	30	35	29	73

17Q61A0559	29	27	26	72
17Q61A0560	22	40	4	70
17Q61A0561	26	52	26	72
17Q61A0562	27	55	34	72
17Q61A0566	40	28	40	69
17Q61A0567	31	44	26	71
17Q61A0568	22	27	26	70
17Q61A0574	26	52	26	69
17Q61A0575	27	55	34	72
17Q61A0577	40	28	40	72
17Q61A0580	33	28	28	72
18Q65A0502	26	30	26	70
18Q65A0503	32	26	33	69
18Q65A0505	33	35	26	72
18Q65A0506	26	33	26	72
18Q65A0508	26	52	26	69
18Q65A0510	27	55	34	72
18Q65A0511	40	28	40	72
18Q65A0512	30	41	28	72
18Q65A0515	31	54	26	72
18Q65A0516	34	43	30	70
18Q65A0519	26	28	32	70
AVERAGE	31.5	39.4	30.8	71.2
AVERAGE %	41.9%	52.6%	41.1%	71.2%
co attainment	2	3	2	3

The assessment of course outcome is done based on examinations conducted

- Mid Exam
- Laboratory Exam
- Projects
- University Examinations

The Course outcome for all theory courses is assessed based on target criterion set. The Weightages are given for Internal Examinations & University Examinations. The overall attainment of the course outcome is calculated by obtaining weighted average.

Projects Work & Laboratory courses of assessed through Rubrics. Performance indicators are described in Rubrics to assess the course outcome.

The course outcomes are assessed through internal and external examinations (direct assessment tool). Each examination is given due weightage for assessment as given below.

A. Theory Courses:

1. **Internal Examination (25%)**-This type of performance assessment is carried out during the examination sessions which will be held twice in a semester. Each and every Mid-term examination is focused in achieving the course outcomes.
2. **University Examination (75%)**- Semester End examination comprising entire syllabus of the course is a measure for assessing whether the entire COs are attained or not.

Mid Examination Evaluation Procedure:

Step No	Activity	Responsibility	Frequency	Time Line
1	Midterm Question paper mapped with Course Outcomes	Respective Faculty	Twice per Semester	Along the Question paper setting
2	Internal Examination Conduction	Department Exam Section	Twice per Semester	As per academic Calendar
3	Evaluate the answer scripts	Respective Faculty	Twice per Semester	two days from examination completion
4	Standard format for Course Outcome Assessment for Mid and Assignment	Assessment Committee	Once per Year	Beginning of the ACY
5	Evaluate question wise and calculate the course Attainment	Respective Faculty	Twice per Semester	two days from examination completion
6	Submit the course attainment to Assessment Committee	Respective Faculty	Twice per Semester	two days from examination completion
7	Consolidation of attainments for all courses and report submission to HOD	Assessment Committee	Twice per Semester	3 days from examination completion
8	Analysis of attainments and corrective measures for all courses	HOD	Twice per Semester	One week from report availability

B. Lab Courses: Presentation and Conduction The laboratory test assessment is based on the following three components:

1. **Day to day work (20%):** The students are expected to conduct the laboratory experiment by applying the concepts learned in relevant theory courses. In order to test the experimental skills and knowledge attained by the student viva-voce will be conducted on the day of performing experiment. While evaluating the students in laboratory the COs are taken into consideration
2. **Record (10%):** In laboratory courses the students are expected to prepare the documentation of experimental procedure, design calculations, results and conclusions for every experiment conducted in the laboratory. The record is submitted to faculty for assessment of the student skills in various aspects.
3. **Internal exam (20%):** The overall performance of the student in laboratory is evaluated by conducting examination at the end of the semester.
4. **University Examination(50%):** The overall performance of the student in laboratory is evaluated by conducting examination at the end of the semester.

Project Work:

The internal evaluation for 50 marks allocated for the project work shall be on the basis of two seminars & Viva - Voce examination by each student on the topic of his/her project and evaluated by Project Review committee. The Project Review committee consists of Head of Department, respective internal guide and three senior faculty members of the department. The distribution of marks is as given in below Table

S.No.	Criteria	Marks
1	Two Seminars & Viva-Voce	20+20
2	Day to Day Assessment	10

Table: Distribution of Internal Marks

Rubric showing internal evaluation of Project

- Literature survey(5M)
- Problem identification(5M)
- Professional behavior (5M)
- Communication skills(5M)
- Similar evaluation for 2nd Seminar of Project

S.No.	Criteria	Marks
1	Report	100
2	Presentation & Viva	50

Table: Distribution of External Marks

These marks awarded by the examiner appointed the University. Based on the above procedure, Attainment levels will be calculated for both internal and university examinations and the same is consolidated into the following format:

S.NO	COURSE OUT COMES	INTERNAL EXAMS	EXTERNAL EXAMS	Overall Course attainment (0.25*Internal + 0.75*External)
1	Course 1			
2			
3	Course n			


PRINCIPAL
Avanithi Institute of Engg. & Tech.
Gunturapalli (V), Abulapurmet (Nidi), R.R. Dist.

Record the attainment of Course Outcomes of all courses with respect to set attainment levels (40):

Program shall have set Course Outcome attainment levels for all courses.
 (The attainment levels shall be set considering average performance levels in the university examination or any higher value set as target for the assessment years.
 Attainment level is to be measured in terms of student performance in internal assessments with respect to the Course Outcomes of a course in addition to the performance in the University examination)

CO ATTAINMENT:

S.NO	COURSE OUT COMES	INTERNAL EXAMS	EXTERNAL EXAMS	Overall Course attainment (0.25*Internal + 0.75*External)
1	BEE	3	1	1.5
2	DS	3	1	1.5
3	DLD	2.2	2	1.5
4	EDC	3	2	1.25
5	MFCS	3	1	1.5
6	P&S	3	2	2
7	DS LAB	2.4	3	2.8
8	EE LAB	3	3	3
9	ES	3	2	3
10	DAA	2.1	2	2
11	CO	3	2	2
12	JAVA	3	2	2
13	FLAT	2.4	2	2.1
14	DBMS	3	1	1.5
15	JAVA LAB	3	3	3
16	DBMS LAB	3	3	3
17	DCCN	2.5	1	2.1
18	MP	3	2	2
19	OS	3	1	1.5
20	OR	3	2	2
21	PPL	2.1	1	1.2
22	SE	3	2	3
23	CNOS LAB	3	3	3
24	MP LAB	3	3	3
25	CD	3	2	2
26	MEFA	2.2	1	1.3
27	NS	3	2	2
28	OOAD	3	1	2
29	VLSI	2.5	2	2.1
30	WT	3	2	2
31	WTCDLAB	3	3	3
32	AELCS LAB	2	3	2.5
33	CG	3	2	2
34	DMDW	3	2	2
35	DP	3	2	2

36	LP	2.5	1	1.3
37	MC	3	2	2
38	STM	3	1	2
39	CTST LAB	3	3	3
40	LPDMLAB	2	3	3
41	DBS	2.1	1	3
42	MS	3	2	2
43	SL	2	2	2
44	CV	3	3	3
45	MINI	3	3	3
46	SEMINAR *	3	-	3
47	MAJOR	3	3	3

***The attainment of seminar is not calculated externally, so internal attainment is awarded as overall attainment.**

Sample Internal assessment of DA course is shown below:

Roll No	DA	MIS	Web& SOA	MAJOR
17Q61A0501	24	25	24	24
17Q61A0503	23	24	24	23
17Q61A0505	24	23	23	21
17Q61A0506	24	24	24	19
17Q61A0508	21	23	24	19
17Q61A0509	24	25	24	22
17Q61A0510	24	23	23	19
17Q61A0511	23	24	23	21
17Q61A0513	21	21	24	18
17Q61A0514	24	24	24	23
17Q61A0515	24	25	24	21
17Q61A0516	24	25	24	24
17Q61A0520	22	24	23	20
17Q61A0521	24	25	24	24
17Q61A0522	23	23	24	24
17Q61A0523	22	24	23	21
17Q61A0524	22	24	23	19
17Q61A0525	23	21	24	24
17Q61A0526	25	24	25	22
17Q61A0528	24	25	23	24
17Q61A0531	19	19	22	19
17Q61A0532	24	25	23	22
17Q61A0534	24	24	21	18
17Q61A0536	19	19	22	19
17Q61A0540	24	25	23	18
17Q61A0541	24	25	23	23
17Q61A0542	24	25	23	22
17Q61A0543	22	24	23	19
17Q61A0544	25	25	25	18
17Q61A0545	22	24	24	19

17Q61A0546	24	25	23	18
17Q61A0547	24	24	21	20
17Q61A0548	25	23	25	24
17Q61A0549	21	24	24	20
17Q61A0550	24	24	24	22
17Q61A0552	24	25	23	23
17Q61A0553	24	24	21	24
17Q61A0554	25	23	25	18
17Q61A0555	24	25	24	24
17Q61A0557	24	25	24	22
17Q61A0558	24	24	24	23
17Q61A0559	24	24	23	23
17Q61A0560	23	25	23	21
17Q61A0561	24	25	23	22
17Q61A0562	24	24	21	24
17Q61A0566	25	23	25	18
17Q61A0567	23	23	23	22
17Q61A0568	22	23	24	19
17Q61A0574	24	25	23	18
17Q61A0575	24	24	21	22
17Q61A0577	25	23	25	24
17Q61A0580	24	25	24	24
18Q65A0502	21	23	24	21
18Q65A0503	24	23	24	18
18Q65A0505	22	25	24	24
18Q65A0506	24	25	23	22
18Q65A0508	24	25	23	18
18Q65A0510	24	24	21	24
18Q65A0511	25	23	25	22
18Q65A0512	23	23	22	22
18Q65A0515	22	25	24	24
18Q65A0516	23	24	23	22
18Q65A0519	23	23	24	20
AVERAGE	23.4	23.9	23.4	21.3
AVERAGE %	93.5%	95.5%	93.5%	85.1%
CO attainment	3	3	3	3


 PRINCIPAL
 Avanthi Institute of Engg. & Tech.
 Gunthapalli (V), Abdulapurmet (Nidi), R.R. Dist.

Sample University Examination assessment of DA (IV-II) course is shown below:

HTNO	DATA ANALYTICS	MANAGEMENT INFORMATION SYSTEMS	WEB SERVICES AND SERVICE ORIENTED ARCHITECTURE	MAJOR PROJECT
17Q61A0501	31	41	26	72
17Q61A0503	33	43	26	72
17Q61A0505	27	33	26	70
17Q61A0506	31	26	26	72
17Q61A0508	26	26	37	70
17Q61A0509	33	52	26	72
17Q61A0510	34	27	30	69
17Q61A0511	28	27	26	72
17Q61A0513	26	34	32	69
17Q61A0514	29	55	33	72
17Q61A0515	27	33	26	72
17Q61A0516	26	40	37	72
17Q61A0520	35	26	26	70
17Q61A0521	28	48	37	72
17Q61A0522	27	30	26	72
17Q61A0523	35	26	26	72
17Q61A0524	35	26	26	72
17Q61A0525	27	55	34	72
17Q61A0526	40	33	40	72
17Q61A0528	26	52	26	72
17Q61A0531	70	69	72	72
17Q61A0532	26	52	26	72
17Q61A0534	27	55	34	69
17Q61A0536	70	69	72	72
17Q61A0540	26	33	26	69
17Q61A0541	26	40	26	73
17Q61A0542	26	52	26	72
17Q61A0543	35	26	26	72
17Q61A0544	40	40	40	69
17Q61A0545	27	26	26	70
17Q61A0546	26	52	26	69
17Q61A0547	27	55	34	71
17Q61A0548	40	28	40	72
17Q61A0549	35	26	26	70
17Q61A0550	26	26	26	72
17Q61A0552	26	52	26	72
17Q61A0553	27	55	34	72
17Q61A0554	40	28	40	69
17Q61A0555	35	43	32	72
17Q61A0557	39	29	26	72
17Q61A0558	30	35	29	73
17Q61A0559	29	27	26	72
17Q61A0560	22	40	4	70
17Q61A0561	26	52	26	72

17Q61A0562	27	55	34	72
17Q61A0566	40	28	40	69
17Q61A0567	31	44	26	71
17Q61A0568	22	27	26	70
17Q61A0574	26	52	26	69
17Q61A0575	27	55	34	72
17Q61A0577	40	28	40	72
17Q61A0580	33	28	28	72
18Q65A0502	26	30	26	70
18Q65A0503	32	26	33	69
18Q65A0505	33	35	26	72
18Q65A0506	26	33	26	72
18Q65A0508	26	52	26	69
18Q65A0510	27	55	34	72
18Q65A0511	40	28	40	72
18Q65A0512	30	41	28	72
18Q65A0515	31	54	26	72
18Q65A0516	34	43	30	70
18Q65A0519	26	28	32	70
AVERAGE	31.5	39.4	30.8	71.2
AVERAGE %	41.9%	52.6%	41.1%	71.2%
co attainment	2	3	2	3

Overall Attainment

S.NO	COURSE OUT COMES	INTERNAL EXAMS	EXTERNAL EXAMS	Overall Course attainment (0.25*Internal + 0.75*External)
1	DA	3	2	2.25
2	MIS	3	3	3
3	WB & SOA	3	2	2.25
4	MAJOR	3	3	3


 PRINCIPAL
 Avanithi Institute of Engg. & Tech.
 Gunthapali (V), Abdullapurmet (Nidi), R.R. Dist.

Attainment of Program Outcomes and Program Specific Outcomes

Describe assessment tools and processes used for measuring the attainment of each of the Program Outcomes and Program Specific Outcomes

Course – PO mapping is explained in 3.1.2 and 3.1.3

Course attainment level is calculated and shown in 3.2.2

Considering the CO-PO mapping and CO attainment level, same attainment level was used for all the mapped Pos ONLY.

When one semester is completed, PO attainment from all the courses of that semester is calculated.

Provide results of evaluation of each PO & PSO

Program shall set Program Outcome attainment levels for all POs & PSOs.

(The attainment levels by direct (student performance) and indirect (surveys) are to be presented through Program level Course – PO & PSO matrix as indicated).

PO Attainment:

COURSE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ENGLISH-I					2				2	3	2	2
MATHEMATICS-I	3	3	3		3						3	2
MATHEMATICAL METHODS	3	3	3		2						2	2
ENGINEERING PHYSICS	3	2		2	3						3	2
ENGINEERING CHEMISTRY					2	2	2	3		2	3	
COMPUTER PROGRAMMING		3	2	2	2						2	
ENGINEERING DRAWING					2		3		2	3	2	2
COMPUTER PROGRAMMING LAB	2	2	2	3					2			
EP/EC LAB	2	2	2	2					2			
ELCS LAB-1	2		2	2					2			
IT/ENGINEERING WORKSHOP					2		3		2	3	2	2
PROBABILITY AND STATISTICS	3	3	2		2						2	2
MFCS	3	2		2	2						2	
DATA STRUCTURES	2	3		2			2					2
DIGITAL LOGIC DESIGN	2	2		2			2		2			2
EDC	3	2		2	2						2	
BEE	2	2		2			2		2			3
EE LAB					3		2		2	3	2	2
DS LAB	2	3	2	2	2						2	
CO	3	1	2		2	2	-					
DBMS	3	2	3	3			2					
JAVA PROGRAMMING	3	3							2			
ES	2	2	2	2						2		2

FLAT	3	2	2		2					2		
DAA	2	2						2	2			
JAVA LAB	3	2	3	2	2			2	2			
DBMS LAB	2	2	2	2							2	
PPL	1	3	2		2				2	2	2	
HVPE	3	2	2	2								
SE	2	3	2	2					2			
CD	2						2	2			2	
OS	3	3					2					
CN	2	2						2	2			
OS LAB	3	2						2	2			
CD LAB	2		2			2	3					
DS		2	2		2					2	2	
IS	2	2		3					2	-	2	
OOAD	2.1	2.1	2.1				2.1		2.1			
STM	2	2	2		3					2		
MEFA	3	2	2									
WT	2.2		2		2.2					3		
CT&WT	2	2					2		2			
AECS LAB	2					2		3			2	
LP	3			2		2			2			
DP	2		2		2					2	2	
DWANDDM	2		2		2						2	
CC	2					2		2			2	
MC	2			2					3			
AI	2	2		2	2					2	3	
LP LAB	2		2	2					2	2		
DW&M LAB	2		2		2				2	2		
MS	2	3	2			2	3				2	
DA	2.25		2.25	2.25	2.25					2.25	2.25	
MIS	3		3	3				3				
WB & SOA	2.25	2.25			2.25		2.25				2.25	
MAJOR	3		3		3						3	
VIVA	2	2			3				3	2		
AVERAGE	2.3	2.3	2.25	2.2	2.2	2	2.4	2	2.1	2.0	1.9	1.9


 PRINCIPAL
 Avanthi Institute of Engg. & Tech.
 Gunthapalli, V.V. Abdullapurmet (Ndl.), R.R. Dist.

Course	PSOI	PSO2
ENGLISH-I		2
MATHEMATICS-I		2
MATHEMATICAL METHODS	2	2
ENGINEERING PHYSICS	2	2
ENGINEERING CHEMISTRY		1
COMPUTER PROGRAMMING		2
ENGINEERING DRAWING	2	2
COMPUTER PROGRAMMING LAB		2
EP/EC LAB		2
ELCS LAB-1	2	2
IT/ENGINEERING WORKSHOP		2
PROBABILITY AND STATISTICS	2	2
MFCS		2
DATA STRUCTURES	2	1
DIGITAL LOGIC DESIGN	2	2
EDC		2
BEE		2
EE LAB	2	
DS LAB		2
CO		1
DBMS	2	
JAVA PROGRAMMING		2
ES	2	
FLAT	1	
DAA		2
JAVA LAB	2	
DBMS LAB		2
PPL		1
HVPE	2	
SE	2	2
CD	1	
OS	2	
CN	2	
OS LAB	2	
CD LAB	2	
DS		2
IS	2	2
OOAD		2
STM		2

MEFA		2
WT	2	
CT&WT		2
AECS LAB		2
LP	2	
DP		2
DWANDDM	2	
CC	1	
MC	1	2
AI		2
LP LAB	2	
DW&M LAB	2	
MS	2	
SL	2	
DBS		2
MINI PROJEST	2	
SEMINAR		2
PROJECT WORK	3	
VIVA		2


 PRINCIPAL
 Avanthi Institute of Engg. & Tech.
 Gunthapally (V), Abdullapurmet (Midl.), R.R. Dist.

Indirect Attainment (20%)

Graduate exit survey

1. Exit feedback forms are used for collecting the feedback from the students at the time of completion of the programme.
2. The feedbacks and the suggestions are analysed and taken into consideration for continuous improvement. Weightage is given as 25% of Indirect Attainment

Student feedback

The feedback is collected from all the students of concerned department for the respective subjects at the start and end of every semester. Weightage is given as 25% of Indirect Attainment.

Indirect Assessment Of PO-1

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Graduate survey	Have you learned the fundamental principles in major areas of mathematics and sciences in your program?	60	54	3
	Have you applied knowledge of mathematics, science and engineering / computing, fundamentals in solving Engineering problems in your program?	60	52	3
Alumni survey	Are you able to develop a broad appreciation for mathematics and science both as a discipline and as a tool for solving real world problems?	22	20	3
		22	19	3

Indirect Assessment methods

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Indirect assessment methods to assess Program outcome 1


PRINCIPAL
Avanathi Institute of Engg. & Tech.
Gunturapally (V), Abdullapurmet (Ndl.), R.R. Dist.

Average Attainment of PO-1

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
PO 1	Direct Assessment (80%)	$2.44 * 0.8 = 1.92$	$1.92 + 0.6 = 2.5$	83.3
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		

% Attainment calculation = max. attainment level reached / max attainment level

Indirect Assessment of PO-2,

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Graduate survey	PO2: : Are you able to apply engineering knowledge to design experiments ,analyze, and interpret data to obtain valid conclusions?courses?	60	54	3

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Indirect assessment methods to assess Program outcome 2


PRINCIPAL
Avanathi Institute of Engg. & Tech.
Guntur Road, (V), Abdullapurmet (Md.), R.R. Dist.

Average Attainment of PO-2

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
PO 2	Direct Assessment (80%)	$2.35 * 0.8 = 1.88$	$1.88 + 0.6 = 2.48$	82.6
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		

Indirect Assessment of PO-3,

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Graduate survey	PO3: How comfortable are you in identifying and designing an appropriate solution for an engineering problem??	60	54	3

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO-3

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
PO 3	Direct Assessment (80%)	$2.45 * 0.8 = 1.96$	$1.96 + 0.6 = 2.56$	85.3
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		


PRINCIPAL
Avanathi Institute of Engg. & Tech.
Guntihapally (V), Abdullapurmet (Midi), R.R. Dist.

Indirect Assessment of PO-4

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Alumni survey	PO4: Are you able to apply engineering knowledge to design experiments ,analyze and interpret data to obtain valid conclusions	22	20	3

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO-4

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
PO 4	Direct Assessment (80%)	$2.08 * 0.8 = 1.96$	$1.66 + 0.6 = 2.26$	75.3
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		

Indirect Assessment of PO-5

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Alumni survey	PO5:How satisfied are you in using new software/environment? ?	22	20	3
Graduate survey	PO5: Given a new tool or environment how comfortable are you to utilize and develop with it?	60	52	3

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO-5

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
PO 5	Direct Assessment (80%)	$2.21 * 0.8 = 1.76$	$1.76 + 0.6 = 2.36$	78.6
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		

Indirect Assessment of PO-6

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO-6

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
PO 6	Direct Assessment (80%)	$1.94 * 0.8 = 1.76$	$1.55 + 0.6 = 2.5$	83
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		


PRINCIPAL
Avanathi Institute of Engg. & Tech.
Guntur (M), Abdullapurmet (Ndl.), R.R. Dist.

Indirect Assessment of PO-7

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Alumni survey	P05:How satisfied are you in using new software/environment?	22	20	3
Graduate survey	P05: Given a new tool or environment how comfortable are you to utilize and develop wi	60	52	3

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO-7

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
PO 5	Direct Assessment (80%)	$1.93 * 0.8 = 1.54$	$1.54 + 0.6 = 2.14$	71.3
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		


 PRINCIPAL
 Avanthi Institute of Engg. & Tech.
 Gunthapally (V), Abdullapurmet (Md.), R.R. Dist.

Indirect Assessment of PO-8

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Alumni survey	PO8: How well you understand the pro responsibility and ethics ?	22	20	3
Graduate survey	PO8:Do you follow any non-technical constraints such as environmental , soc political, ethical, health and safety and sustainability?	60	52	3
	PO8:Have you ever participated in NGO activities or any external social welfare association during the college?it?	60	50	3

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO-8

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
PO 8	Direct Assessment (80%)	$2.2 * 0.8 = 1.76$	$1.76 + 0.6 = 2.36$	78.6
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		


 PRINCIPAL
 Avanathi Institute of Engg. & Tech.
 Gunthapally (V), Abdullapurmet (Nid.), R.R. Dist.

Indirect Assessment of PO-9

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Alumni survey	PO9: Are you able to work effectively in multidisciplinary teams?	22	20	3
Graduate survey	PO9:How frequently are you able to function effectively on tems to accomplish a common goal?	60	52	3

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO-9

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
PO 9	Direct Assessment (80%)	$2.18 * 0.8 = 1.74$	$1.74 + 0.6 = 2.34$	78
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		


 PRINCIPAL
 Avanathi Institute of Engg. & Tech.
 Gunthapally (V), Abdullapurmet (Mdl.), R.R. Dist.

Indirect Assessment of PO-10

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Alumni survey	PO10: How far you have developed the communicate effectively ,write precise design documentation applying the eng knowledge?	22	20	3

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO- 10

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
P10	Direct Assessment (80%)	$2.25 * 0.8 = 1.8$	$1.8 + 0.6 = 2.4$	80
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		

Indirect Assessment of PO-11

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table

Survey type	Question type	Number of Responses	Satisfaction Number	Attainment Level
Alumni survey	PO11: How well you prepare a specific time line and sequence of activities and use them manage the overall project to ensure its timely completion ?	22	20	3


 PRINCIPAL
 Avanthi Institute of Engg. & Tech.
 Gunthapally (V), Abdullapurmet (Mdl.), R.R. Dist.

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO- 11

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
P11	Direct Assessment (80%)	$2.07 * 0.8 = 1.65$	$1.65 + 0.6 = 2.25$	75
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		

Indirect Assessment of PO-12

Indirect PO assessment is done using assessment tools like graduate survey, alumni survey, projects etc .as described in following table.

Assessment tool	% target level attainment	Attainment Level
Graduate survey	90.47	3
Alumni survey	86.82	3
Project	90.3	3
Average Indirect Attainment		3

Average Attainment of PO- 12

Finally, the average of direct and indirect assessment is calculated which is the attainment level for that PO

PO	Assessment Tool	Attainment Level	Overall Attainment	% Attainment
P12	Direct Assessment (80%)	$2.37 * 0.8 = 1.89$	$1.89 + 0.6 = 2.4$	80
	Indirect Assessment (20%)	$3 * 0.2 = 0.6$		


 PRINCIPAL
 Avanthi Institute of Engg. & Tech.
 Gunthapally (V), Abdullapurmet (Ndl.), R.R. Dist.

Program Specific Outcomes Assessment and Attainment

Direct Assessment of PSO

Program specific outcome 1: To identify, formulate and analyze the problems in Electronics Engineering by using principles of Mathematics and Engineering fundamentals.

PSO1: Design, implement, test and evaluate a computer system, component, or algorithm to meet desired needs and to solve a computational problem

PSO2: Ability to analyze ,design and implement hardware and software components.

Course	PSO1	PSO2
ENGLISH-I	0	2
MATHEMATICS-I	0	2
MATHEMATICAL METHODS	2	2
ENGINEERING PHYSICS	2	2
ENGINEERING CHEMISTRY	0	1
COMPUTER PROGRAMMING	0	2
ENGINEERING DRAWING	2	2
COMPUTER PROGRAMMING LAB	0	2
EP/EC LAB	0	2
ELCS LAB-1	2	2
IT/ENGINEERING WORKSHOP		2
PROBABILITY AND STATISTICS	2	2
MFCS	0	2
DATA STRUCTURES	2	1
DIGITAL LOGIC DESIGN	2	2
EDC	0	2
BEE	0	2
EE LAB	2	
DS LAB	0	2
CO	0	1
DBMS	2	0
JAVA PROGRAMMING	0	2
ES	2	0
FLAT	1	0
DAA	0	2
JAVA LAB	2	
DBMS LAB	0	2

PPL	0	1
HVPE	2	
SE	2	2
CD	1	0
OS	2	0
CN	2	0
OS LAB	2	0
CD LAB	2	0
DS	0	2
IS	2	2
OOAD	0	2
STM	0	2
MEFA	0	2
WT	2	0
CT&WT	0	2
AECS LAB	0	2
LP	2	0
DP	0	2
DWANDDM	2	0
CC	1	0
MC	1	2
AI	0	2
LP LAB	2	0
DW&M LAB	2	0
MS	2	0
SL	2	0
DBS	0	2
MINI PROJEST	2	0
SEMINAR	0	2
PROJECT WORK	3	0
VIVA	0	2
Total Average of Direct Assessment:	2.1	1.9


 PRINCIPAL
 Avanathi Institute of Engg. & Tech.
 Gunthapally (V), Abdullapurmet (Md.), R.R. Dist.

PO Attainment Summary

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO Attainment	2.3	2.3	2.25	2.2	2.2	2	2.4	2	2.1	2.0	1.9	1.9
Direct Attainment (80%)	1.72	1.6	1.48	1.83	1.95	1.9	1.93	1.8	1.8	1	2.0	1.6
In Direct Attainment (20%)	2.5	2.48	2.4	2.26	2.36	2.15	2.14	2.36	2.34	2.4	2.25	2.49
Overall attainment	2.2	2.42	2.12	2.3	2.17	2.0	2.2	2.1	2.28	1.8	2.2	2.1
Overall attainment %	73.3	80.6	70.6	76.6	72.3	66	74.1	70	76	65	73.3	70


 PRINCIPAL
 Avanathi Institute of Engg. & Tech.
 Guntihapally (V), Abdullapurmet (Mid.), R.R. Dist.