Department of Computer Science

Attainment of Outcomes
Computation of CO Attainment

Course: Problem Solving Techniques using C **Credits: 2**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	Understand the introduction and overview of programming	Factual	Understand and remember	12	PSO1
CO2	Understand and Apply the Input output function	Conceptual and procedural	Understand and Apply	12	PSO1, PSO3
CO3	Understand and apply Array and String	Conceptual and procedural	Understand, apply and analyse	12	PO1, PSO1 PSO3
CO4	Understand and Apply the Structure, Union and Pointer	Procedural and Conceptual	Understand and Analyse	12	PO1, PSO1, PSO3
CO5	Describe and apply the concept of File and Macro	Conceptual	Understand and apply	12	PO1, PSO1, PSO3

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (10)	T2 (10)
CO1	2	4	2
CO2	2	4	2
CO3	2	2	3
CO4	2	0	2
CO5	2	0	1

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (10)	T2 Cl. Ave (10)	CIE Class Average (%)
CO1	1.76/2	3.52/4	1.76/2	88
CO2	1.68/2	3.36/4	1.68/2	84
CO3	1.7/2	1.7/2	2.55/3	85
CO4	1.72/2	0	1.72/2	86
CO5	1.64/2	0	1.64/1	82

Attainment of COs from SEE

CO	Class Average in SEE
CO1	56
CO2	56
CO3	56
CO4	56
CO5	56

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 *CIE Cl. Ave +0.7 * SEE Cl. Ave
CO1	88	56	65.6
CO2	84	56	64.4
CO3	85	56	64.7
CO4	86	56	65
CO5	82	56	63.8

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	70
CO2	65
CO3	64
CO4	64
CO5	62

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap **CA-COA**
CO1	65.6	70	4.4
CO2	64.4	65	0.6
CO3	64.7	64	-0.7
CO4	65	64	-1
CO5	63.8	62	-1.8

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	70	4.4	More assignments to be given Presentation Previous year question papers to be solved	
CO2	65	0.6	More assignments to be given Presentation Previous year question papers to be solved	
CO3	64	-0.7		65
CO4	64	-1		65
CO5	62	-1.8		64

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO1	12
CO2	PSO1, PSO3	12
CO3	PO1, PSO1, PSO3	12
CO4	PO1, PSO1, PSO3	12
CO5	PO1, PSO1, PSO3	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
36 OF 60 (60%) Sessions are devoted to PO1	Mapping Strength is 2
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3
48 OF 60 (100%) Sessions are devoted to PSO3	Mapping Strength is 2

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
C	2	--	--	--	--	--	--	--	--	--	--	--	3	--	2	--	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO1	65.6
CO2	PSO1, PSO3	64.4
CO3	PO1, PSO1, PSO3	64.7
CO4	PO1, PSO1, PSO3	65
CO5	PO1, PSO1, PSO3	63.8

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PO1	(2/3) X (64.7+65+63.8)/3= 43
PSO1	(3/3) X (65.6+64.4+64.7+65+63.8)/5=64.7
PSO3	(2/3) X (64.4+64.7+65+63.8)/4=42.9

Attainment of POs and PSOs

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
CA	3	-	--	--	-	--	--	-	-	--	--	--	3	-	--	3	--
Attainment	.43	-	--	--	-	--	--	-	-	--	--	--	.64	-	--	.42	--

2010-19
Dr. Mara

Attainment of Outcomes
Computation of CO Attainment

Course: Digital Electronics **Credits: 3**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Understand** the basic concepts of electronics and features of current	Conceptual	Understand and Remember	12	PSO3, PSO4, PO1
CO2	**Clarify** the concepts of conductors, semiconductors and insulators	Factual	Understand and Remember	12	PSO3, PSO4,PO1
CO3	**Understand** the concept of number systems, KMAP and Boolean expressions	Conceptual and Factual	Understand and Remember	12	PSO3, PSO4, PO1
CO4	**Understand** the logic of gates and different types of gates and combinational circuits	Factual and Conceptual	Understand and Remember	12	PSO3, PSO4, PO1
CO5	**Understand** the concept of flip flops, registers and types of registers	Conceptual	Understand and Remember	12	PO1, PSO3, PSO4

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (10)	T2 (10)
CO1	2	4	2
CO2	2	3	1
CO3	2	3	1
CO4	2	0	3
CO5	2	0	3

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (10)	T2 Cl. Ave (10)	CIE Class Average (%)
CO1	1.6	3.28	1.6	82
CO2	1.64	2.4	0.82	80
CO3	1.7	2.55	0.85	85
CO4	1.68	0	2.52	84
CO5	1.6	0	2.4	80

Attainment of COs from SEE

CO	Class Average in SEE
CO1	70
CO2	70
CO3	70
CO4	70
CO5	70

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 CIE Cl. Ave +0.7 SEE Cl. Ave
CO1	82	70	73.6
CO2	80	70	73
CO3	85	70	74.5
CO4	84	70	74.2
CO5	80	70	73

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	70
CO2	75
CO3	80
CO4	85
CO5	75

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	73.6	70	-3.6
CO2	73	75	2
CO3	74.5	80	5.5
CO4	74.2	85	10.8
CO5	73	75	2

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	70	-3.6		73.6
CO2	75	2	Clarity about the concept to be given through more live examples	
CO3	80	5.5	More assignments to be given and video presentation to be shown	
CO4	85	10.8	Revision on the topic to done in the coming semesters	
CO5	75	2	Previous year question papers to be solved	

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO3,PSO4,PO1	12
CO2	PSO1, PSO4,PO1	12
CO3	PSO1,PSO4,PO1	12
CO4	PSO1,PSO4,PO1	12
CO5	PSO1,PSO4,PO1	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
Sessions are devoted to PSO3	Mapping Strength is 3
Sessions are devoted to PO1	Mapping Strength is 3
Sessions are devoted to PSO4	Mapping Strength is 3

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
DE	--	--	--	3	--	-	--	--	--	--	--	--	3	--		3	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO3, PSO4,PO1	59.06
CO2	PSO3,PSO4, PO1	73.66
CO3	PSO3,PSO4, PO1	29.44
CO4	PSO3,PSO4,PO1	44.34
CO5	PSO3,PSO4,PO1	14.6

2016-19

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Department of Computer Science

SUBJECT: Discrete Mathematics

Credits: 3 Credits

Course Outcomes Alignment with Instructional and Assessment

CO	Course Outcome	Cognitive Level	Knowledge Category	No. of Hrs.	POs/PSOs
CO1	**Describes** Set, Relation, function and mathematical logic	Understand, Evaluate	Procedural, Conceptual	12	PO1,PSO2
CO2	**Explains** the fundamental concepts of matrix and various operation and application of matrix	Understand, Evaluate	Procedural, Conceptual	12	PO1,PSO2
CO3	**Explains** concept of logarithm, permutation and combination	Understand, Evaluate,	Procedural, Conceptual	12	PO1,PSO2
CO4	**Describes** the concept of group and its various operation	Understand, Evaluate	Conceptual, Procedural	12	PO1,PSO2
CO5	**Explains** basic concept of analytical Geometry in two Dimensions	Evaluate Understand	Conceptual, Procedural	12	PO1,PSO2

Attainment of Outcomes

Computation of CO Attainment of Discrete Mathematics

CO	A1 Assignment/Presentation (10)	CIA I (20)	Preparatory Examination (20)
CO1	2	10	5
CO2	2	8	5
CO3	2	2	5
CO4	2	0	5
CO5	2	0	5

Attainment of COs from CIE

Class average in CIE

CO	Assignment/Presentation Class Average (10)	CIA I Class Average (20)	Preparatory Examination Class Average (20)	CIE Class Average (%)
CO1	1.76/2	8.8/10	4.4/5	75
CO2	1.7/2	6.8/8	4.25/5	70
CO3	1.7/2	1.7/2	4.25/5	65
CO4	1.76/2	0	4.4/5	70
CO5	1.7/2	0	4.25/5	75

Attainment of COs from SEE

CO	Class Average in Semester End Exam
CO1	53
CO2	53
CO3	53
CO4	53
CO5	53

Computation of CO Direct Attainment in the course

Attainment of CO in a course Cxxx = Wt. of CIE x Attainment of CO as percentage in CIE + Wt. of SEE x Class Average Marks Percentage in SEE

CO	CIE Class Average	SEE Class Average	Direct CO Attainment 0.3 *CIE Class Average +0.7* SEE Class Average
CO1	75	53	59.6
CO2	70	53	58.1
CO3	65	53	56.6
CO4	70	53	58.1
CO5	75	53	59.6

CO	Target (Class Average)
CO1	60
CO2	58
CO3	60
CO4	62
CO5	59

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	59.6	60	-0.4
CO2	58.1	58	0.1
CO3	56.6	60	-3.4
CO4	58.1	62	-3.9
CO5	59.6	59	0.6

COs	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	60	-0.4		**62**
CO2	58	0.1	**More Assignment and BU Question paper solution**	60
CO3	60	-3.4		62
CO4	62	-3.9		61
CO5	59	0.6	**More Assignment and BU Question paper solution**	60

CO-PO/PSO Mappings

	POs	Class Sessions
CO1	PO1,PSO2	12
CO2	PO1,PSO2	12
CO3	PO1,PSO2	12
CO4	PO1,PSO2	12
CO5	PO1,PSO2	12
		60

Course – PO/PSO Mapping Strength

60 OF 60 (100%) Sessions are devoted to PO1	Mapping Strength is 3
60 OF 60 (100%) Sessions are devoted to PSO2	Mapping Strength is 3

Course-POs/PSO Mapping

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
Discrete Mathematics	3	0	0	0	0	0	0	0	3	0	0	0	0

CO Attainment and POs/PSOs

CO	PO/PSOs	CO Attainment (%ge)
CO1	PO1,PSO2	59.6
CO2	PO1,PSO2	58.1
CO3	PO1,PSO2	56.6
CO4	PO1,PSO2	58.1
CO5	PO1,PSO2	59.6

PO and PSO Attainment

PO/PSO	Attainment (%)
PO1	(3/3) X (59.6+58.1+56.6+58.1+59.6)/5=58.4
PSO2	(3/3) X (59.6+58.1+56.6+58.1+59.6)/5=58.4

Attainment of POs and PSOs

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
DM	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**
Attainment	.58	0	0	0	0	0	0	0	.58	0	0	0	0

2016-19

Attainment of Outcomes
Computation of CO Attainment

Course: Data Structure using C **Credits: 2**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Understand** the introduction and overview of programming	Factual	Understand and remember	12	PSO1
CO2	**Understand and Apply** the array representation	Conceptual and procedural	Understand and Apply	12	PSO1, PSO3
CO3	**Understand and apply** the concept of Linked list	Conceptual and procedural	Understand, apply and analyse	12	PO1, PSO1 PSO3
CO4	**Understand and Describe** the implementation of stack	Procedural and Factual	Understand and Analyse	12	PO1, PSO1, PSO3
CO5	**Describe and apply** the concept of graph and tree	Conceptual	Understand and apply	12	PO1, PSO1, PSO3

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (10)	T2 (10)
CO1	2	4	1
CO2	2	4	1
CO3	2	2	3
CO4	2	0	3
CO5	2	0	2

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (20)	T2 Cl. Ave (20)	CIE Class Average (%)
CO1	1.64/2	3.28/4	0.82/1	82
CO2	1.6/2	3.2/4	0.8/1	80
CO3	1.5/2	1.5/2	2.25/3	75
CO4	1.6/2	0	2.4/3	80
CO5	1.56/2	0	1.56/2	78

Attainment of COs from SEE

CO	Class Average in SEE
CO1	71
CO2	71
CO3	71
CO4	71
CO5	71

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 *CIE Cl. Ave +0.7 * SEE Cl. Ave
CO1	82	71	74.3
CO2	80	71	73.7
CO3	75	71	72.2
CO4	80	71	73.7
CO5	78	71	73.1

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	75
CO2	75
CO3	70
CO4	70
CO5	68

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap **CA-COA**
CO1	74.3	75	0.7
CO2	73.7	75	1.3
CO3	72.2	70	-2.2
CO4	73.7	70	-3.7
CO5	73.1	68	-5.1

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	75	0.7	More assignments to be given Presentation Previous year question papers to be solved	
CO2	75	1.3	More assignments to be given Presentation Previous year question papers to be solved	
CO3	70	-2.2		72
CO4	70	-3.7		72
CO5	68	-5.1		70

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO1	12
CO2	PSO1, PSO3	12
CO3	PO1, PSO1, PSO3	12
CO4	PO1, PSO1, PSO3	12
CO5	PO1, PSO1, PSO3	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
36 OF 60 (60%) Sessions are devoted to PO1	Mapping Strength is 2
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3
48 OF 60 (100%) Sessions are devoted to PSO3	Mapping Strength is 2

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
DS	2	--	--	--	--	--	--	--	--	--	--	--	3	--	2	--	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO1	74.3
CO2	PSO1, PSO3	73.7
CO3	PO1, PSO1, PSO3	72.2
CO4	PO1, PSO1, PSO3	73.7
CO5	PO1, PSO1, PSO3	73.1

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PO1	(2/3) X (72.2+73.7+73.1)/3= 48.57
PSO1	(3/3) X (74.3+73.7+72.2+73.7+73.1)/5=73.4
PSO3	(2/3) X (73.7+72.2+73.7+73.1)/4=48.78

Attainment of POs and PSOs

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
CA	2	-	--	--	-	--	--	-	-	--	--	--	3	-	--	2	--
Attainment	.48	-	--	--	-	--	--	-	-	--	--	--	.73	-	--	.48	--

2016-19

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Department of Sciences

Batch 2016-19

Ms. Somaijoli Mohapatra.

Paper Code: SB7107

Course Title: Database Management System

Credits: 2 Credits

Course Outcomes Alignment with Instructional and Assessment

CO	Course Outcome	Cognitive Level	Knowledge Category	Instructional Method	Assessment Method	No. of Hrs.	POs/PSOs
CO1	**Describes** the basics of database management system.	Understand	Conceptual	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO2	**Explains** the concepts of diagrammatic representation	Apply, Create	Procedural	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO3	**Explains** programming techniques	Evaluate, Apply, Create	Procedural	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO4	**Describes** SQL and PL/SQL.	Analyse	Conceptual, Procedural	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO5	**Explains** transaction processing concepts and interleaving techniques, locks etc.	Analyse	Conceptual, Procedural	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1

Attainment of Outcomes

Computation of CO Attainment of Database Management System

CO	A1Assignment/Presentation(10)	CIA I(10)	Preparatory Examination(10)
CO1	2	4	2
CO2	2	4	2
CO3	2	2	1
CO4	2	0	1
CO5	2	0	4

Attainment of COs from CIE

Class average in CIE

CO	Assignment/Presentation Class Average (10)	CIA I Class Average (10)	Preparatory Examination Class Average (10)	CIE Class Average (%)
CO1	1.56	3.12	1.56	78
CO2	1.56	3.12	1.56	78
CO3	1.52	1.52	0.76	76
CO4	1.56	0	0.78	78
CO5	1.56	0	3.12	78

Attainment of COs from SEE

CO	Class Average in Semester End Exam
CO1	56
CO2	56
CO3	55
CO4	56
CO5	56

Computation of CO Direct Attainment in the course

Attainment of CO in a course Cxxx = Wt. of CIE x Attainment of CO as percentage in CIE + Wt. of SEE x Class Average Marks Percentage in SEE

CO	CIE Class Average	SEE Class Average	Direct CO Attainment 0.3 CIE Class Average +0.7 SEE Class Average
CO1	78	56	62.6
CO2	78	56	62.6
CO3	76	55	61.3
CO4	78	56	62.6
CO5	78	56	62.6

Setting CO Attainment Targets

Targets			
(% of students getting < 50)	(% of students getting >50 and < 65)	(% of students getting >65 and < 80)	(% of students getting > 80)
10	40	30	10

It does not directly indicate the distribution of performance among the students. It has the advantage of finding out the difficulty of specific Cos.

CO	Target (Class Average)
CO1	75
CO2	60
CO3	60
CO4	75
CO5	60

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	62.6	75	12.4
CO2	62.6	60	-2.6
CO3	61.3	60	-1.3
CO4	62.6	75	12.4
CO5	62.6	60	-2.6

COs	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	75	12.4	Include more presentations	
CO2	60	-2.6	--	65
CO3	60	-1.3	--	65
CO4	75	12.4	Include more questionnaire	
CO5	60	-2.6	--	62

CO-PO/PSO Mappings

CO	POs	Class Sessions
CO1	PO1,PSO1	12
CO2	PO1,PSO1	12
CO3	PO1,PSO1	12
CO4	PO1,PSO1	12
CO5	PO1,PSO1	12
		60

Course – PO/PSO Mapping Strength

60 OF 60 (100%) Sessions are devoted to PO1	Mapping Strength is 3
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3

Course-POs/PSO Mapping

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
DBMS	3	0	0	0	0	0	0	3	0	0	0	0	0

CO Attainment and POs/PSOs

CO	PO/PSOs	CO Attainment (%ge)
CO1	PO1,PSO1	**62.6**
CO2	PO1,PSO1	**62.6**
CO3	PO1,PSO1	**61.3**
CO4	PO1,PSO1	**62.6**
CO5	PO1,PSO1	**62.6**

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PO1	(3/3) X (62.6+62.6+61.3+62.3+62.6)/5=62.28
PSO1	(3/3) X (62.6+62.6+61.3+62.3+62.6)/5=62.28

Attainment of POs and PSOs

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
DBMS	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**
Attainment	.62							.62					

2016-19

Attainment of Outcomes
Computation of CO Attainment
Subject: Numerical and statistical Method

Credits: 3

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Understand** Floating-point representations, Roots of equations-locating roots of f(x)=0	Conceptual and Procedural	Understand and Remember	12	PSO2
CO2	**Understand** Interpolation and numerical differentiation-polynomial interpolation	Procedural	Understand and Remember	12	PO1, PSO2
CO3	**Understand** System of linear equations-Gaussian elimination, Ordinary differential equations	Procedural	Understand and Remember	12	PSO2
CO4	**Understand** Basics concepts and definition of statistics, Probability	Procedural	Understand and Remember	12	PO1, PSO2
CO5	**Understand** Random variable and Expectation, Probability Distribution	Procedural	Understand and Remember	12	PSO2

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (20)	T2 (20)
CO1	2	10	5
CO2	2	10	3
CO3	2	0	2
CO4	2	0	5
CO5	2	0	5

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (20)	T2 Cl. Ave (20)	CIE Class Average (%)
CO1	1.5/2	7.5/10	3.75/5	75
CO2	1.52/2	7.6/10	2.28/3	76
CO3	1.54/2	0	1.54/2	77
CO4	1.54/2	0	3.85/5	77
CO5	1.52/2	0	2.28/5	76

Attainment of COs from SEE

CO	Class Average in SEE
CO1	60
CO2	60
CO3	60
CO4	60
CO5	60

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3CIE Cl. Ave + 0.7SEE Cl. Ave
CO1	75	60	64.5
CO2	76	60	64.8
CO3	77	60	65.1
CO4	77	60	65.1
CO5	76	60	64.8

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	65
CO2	65
CO3	65
CO4	65
CO5	65

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	64.5	65	-0.5
CO2	64.8	65	-0.2
CO3	65.1	65	0.1
CO4	65.1	65	0.1
CO5	64.8	65	-0.2

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	65	-0.5		66
CO2	65	-0.2		66
CO3	65	0.1	More Assignment	
CO4	65	0.1	More Assignment	
CO5	65	-0.2		66

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO2	12
CO2	PO1, PSO2	12
CO3	PSO2	12
CO4	PO1, PSO2	12
CO5	PSO2	12

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3
24 OF 60 (40%) Sessions are devoted to PO1	Mapping Strength is 2

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
LGI	2	--	--	--	--	--	--	--	--	--	--	--	--	3	--	--	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO2	64.5
CO2	PO1, PSO2	64.8
CO3	PSO2	65.1
CO4	PO1, PSO2	65.1
CO5	PSO2	64.8

PO and PSO Attainment

PO/PSO	Attainment (%)
PSO2	(3/3) X (64.5+64.8+65.1+65.1+64.8)/5= **64.8%**
PO1	(2/3) X (64.8+65.1)/2=43.3%

Attainment of POs and PSOs

Course	POs												PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
NSM	2	-	--	--	-	--	--	-	-	--	--	--	--	3	--	--	--
Attainment	.43	-	--	--	-	---	--	-	-	--	--	--	--	.64	--	--	--

2019
Dr. Manasa

Attainment of Outcomes
Computation of CO Attainment

Course: Object Oriented Programming Using C++ **Credits: 3**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Understand** the basic concepts of OOP and features of OOP	Conceptual	Understand and Remember	12	PSO1, PO1
CO2	**Clarify** the concepts of objects and classes	Factual	Understand and Remember	12	PSO1, PO1
CO3	**Understand** the concept of Operator overloading and Inheritance	Conceptual and Factual	Understand and Remember	12	PSO1, PO1
CO4	**Understand** the logic of virtual functions and templates	Factual and Conceptual	Understand and Remember	12	PO1, PSO1
CO5	**Understand** the concept of files and streams	Conceptual	Understand and Remember	12	PO1, PSO1

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (10)	T2 (10)
CO1	2	4	3
CO2	2	5	1
CO3	2	1	1
CO4	2	0	3
CO5	2	0	2

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (10)	T2 Cl. Ave (10)	CIE Class Average (%)
CO1	1.6	3.16	2.4	79
CO2	1.58	4	0.79	80
CO3	1.6	0.8	0.8	80
CO4	1.62	0	2.43	81
CO5	1.6	0	1.6	80

Attainment of COs from SEE

CO	Class Average in SEE
CO1	59
CO2	59
CO3	59
CO4	59
CO5	59

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 CIE Cl. Ave +0.7 SEE Cl. Ave
CO1	79	59	65
CO2	80	59	65.3
CO3	80	59	65.3
CO4	81	59	65.6
CO5	80	59	65.3

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	65
CO2	60
CO3	60
CO4	60
CO5	60

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	65	65	0
CO2	65.3	60	-5.3
CO3	65.3	60	-5.3
CO4	65.6	60	-5.3
CO5	65.3	60	-5.3

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	65	0		
CO2	60	-5.3	Clarity about the concept to be given through more live examples	
CO3	60	-5.3	More assignments to be given and video presentation to be shown	
CO4	60	-5.3	Revision on the topic to done in the coming semesters	
CO5	60	-5.3	Previous year question papers to be solved	

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO1,PO1	12
CO2	PSO1, PO1	12
CO3	PSO1,PO1	12
CO4	PSO1,PO1	12
CO5	PSO1,PO1	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
Sessions are devoted to PSO1	Mapping Strength is 3
Sessions are devoted to PO1	Mapping Strength is 3

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
C++	3	--	--	-	--	-	--	--	--	--	--	--	3	--	-	-	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO1, PO1	52.24
CO2	PSO1, PO1	65.3
CO3	PSO1, PO1	39.24
CO4	PSO1,PO1	26.18
CO5	PSO1,PO1	13.06

2016-19

Attainment of Outcomes
Computation of CO Attainment

Course: Financial Accounting and Management **Credits: 2**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Understand** the introduction and overview of accounting	Factual	Understand and remember	12	PSO2
CO2	**Understand and Apply** the financial accounting process	Conceptual and procedural	Understand and Apply	12	PO1 PSO2
CO3	**Understand and apply** the accounting for bill of exchange	Conceptual and procedural	Understand, apply	12	PO1, PSO2
CO4	**Understand and analysing** preparation of final accounting	Procedural	Understand and Analyse	12	PO1, PSO2
CO5	**Describe and apply** the concept of graph and tree	Factual	Understand and apply	12	PO7, PSO3

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (10)	T2 (10)
CO1	2	4	2
CO2	2	4	3
CO3	2	2	1
CO4	2	0	3
CO5	2	0	2

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (20)	T2 Cl. Ave (20)	CIE Class Average (%)
CO1	1.8/2	4.5/5	1.8/2	90
CO2	1.7/2	4.25/5	2.55/3	85
CO3	1.6/2	0	0.8/1	80
CO4	1.6/2	0	2.4/3	80
CO5	1.8/2	0	1.8/2	90

Attainment of COs from SEE

CO	Class Average in SEE
CO1	63
CO2	63
CO3	63
CO4	63
CO5	63

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 *CIE Cl. Ave +0.7 * SEE Cl. Ave
CO1	90	63	71.1
CO2	85	63	69.6
CO3	80	63	68.1
CO4	80	63	68.1
CO5	90	63	71.1

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	75
CO2	75
CO3	65
CO4	70
CO5	75

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap **CA-COA**
CO1	71.1	75	4.6
CO2	69.6	75	5.4
CO3	68.1	65	-3.1
CO4	68.1	70	1.9
CO5	71.1	75	3.9

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	75	4.6	More assignments to be given Presentation Previous year question papers to be solved	
CO2	75	5.4	More assignments to be given Presentation Previous year question papers to be solved	
CO3	65	-3.1		70
CO4	70	1.9	More assignments to be given Presentation Previous year question papers to be solved	
CO5	75	3.9	Presentation Previous year question papers to be solved	

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO2	12
CO2	PO1 PSO2	12
CO3	PO1, PSO2	12
CO4	PO1, PSO2	12
CO5	PO7, PSO3	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
36 OF 60 (60%) Sessions are devoted to PO1	Mapping Strength is 2
12 OF 60 (20%) Sessions are devoted to PO7	Mapping Strength is 1
48 OF 60 (80%) Sessions are devoted to PSO2	Mapping Strength is 2
12 OF 60 (20%) Sessions are devoted to PSO3	Mapping Strength is 1

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
FAM	3	--	--	--	--	--	1	--	--	--	--	--	--	2	1	--	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO2	71.1
CO2	PO1 PSO2	69.6
CO3	PO1, PSO2	68.1
CO4	PO1, PSO2	68.1
CO5	PO7, PSO3	71.1

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PO1	(2/3) X (69.6+68.1+68.1)/3= 45.7
PO7	(1/3) X (71.1)/1=23.7
PSO2	(2/3) X (71.1+69.6+68.1+68.1)/4=46.2
PSO3	(1/3) X (71.1)/1=23.7

Attainment of POs and PSOs

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
CA	2	-	--	--	-	--	1	-	-	--	--	--	--	3	1	--	--
Attainment	.45	-	--	--	-	--	.23	-	-	--	--	--	--	.46	.23	--	--

2016-19

St. Claret College

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Department of Sciences

2016-19

Mr. Somanjoli Mohapatra

Paper Code: SB7111

Course Title: Operating System

Credits: 3 Credits

Course Outcomes Alignment with Instructional and Assessment

CO	Course Outcome	Cognitive Level	Knowledge Category	Instructional Method	Assessment Method	No. of Hrs.	POs/PSOs
CO1	**Describes** the internal architecture Operating System.	Understand	Conceptual	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4
CO2	**Explains** the concepts of Process Synchronization and deadlock.	Understand	Conceptual	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4
CO3	**Explains** memory management system.	Understand	Conceptual	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4
CO4	**Describes** file and disk management.	Understand	Conceptual	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4
CO5	**Explains** protection and security of system.	Understand	Conceptual	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4

Attainment of Outcomes

Computation of CO Attainment of Operating System

CO	A1Assignment/Presentation(10)	CIA I(20)	Preparatory Examination(20)
CO1	2	10	2
CO2	2	10	2
CO3	2	0	6
CO4	2	0	5
CO5	2	0	5

Attainment of COs from CIE Class average in CIE

CO	Assignment/Presentation Class Average (10)	CIA I Class Average (10)	Preparatory Examination Class Average (10)	CIE Class Average (%)
CO1	1.44	7.2	1.44	72
CO2	1.42	7.1	1.42	71
CO3	1.5	0	4.5	75
CO4	1.46	0	3.65	73
CO5	1.44	0	3.6	72

Attainment of COs from SEE

CO	Class Average in Semester End Exam
CO1	90
CO2	89
CO3	90
CO4	95
CO5	90

Computation of CO Direct Attainment in the course

Attainment of CO in a course Cxxx = Wt. of CIE x Attainment of CO as percentage in CIE + Wt. of SEE x Class Average Marks Percentage in SEE

CO	CIE Class Average	SEE Class Average	Direct CO Attainment 0.3 CIE Class Average +0.7 SEE Class Average
CO1	72	90	85
CO2	71	89	84
CO3	75	90	86
CO4	73	95	88
CO5	72	90	85

Setting CO Attainment Targets

Targets			
(% of students getting < 50)	(% of students getting >50 and < 65)	(% of students getting >65 and < 80)	(% of students getting > 80)
10	40	30	10

It does not directly indicate the distribution of performance among the students. It has the advantage of finding out the difficulty of specific Cos.

CO	Target (Class Average)
CO1	50
CO2	35
CO3	40
CO4	50
CO5	60

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	85	50	-34.6
CO2	84	35	-48.6
CO3	86	40	-45.5
CO4	88	50	-38.4
CO5	85	60	-24.6

COs	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	50	-34.6		60
CO2	35	-48.6		40
CO3	40	-45.5		45
CO4	50	-38.4		55
CO5	60	-24.6		65

CO-PO/PSO Mappings

	POs	Class Sessions
CO1	PO1,PSO4	13
CO2	PO1,PSO4	13
CO3	PO1,PSO4	13
CO4	PO1,PSO4	13
CO5	PO1,PSO4	13
		65

Course – PO/PSO Mapping Strength

65 OF 65 (100%) Sessions are devoted to PO1	Mapping Strength is 3
65 OF 65 (100%) Sessions are devoted to PSO4	Mapping Strength is 3

Course-POs/PSO Mapping

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
OS	3	0	0	0	0	0	0	0	0	0	3	0	0

CO Attainment and POs/PSOs

CO	PO/PSOs	CO Attainment (%ge)
CO1	PO1,PSO4	85
CO2	PO1,PSO4	84
CO3	PO1,PSO4	86
CO4	PO1,PSO4	88
CO5	PO1,PSO4	85

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PO1	(3/3) X (85+84+86+88+85)/5=85.6
PSO4	(3/3) X (85+84+86+88+85)/5=85.6

Attainment of POs and PSOs

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
OS	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**
Attainment	0.85	**0**	**0**	**0**	**0**	**0**	**0**	0	**0**	**0**	**0.85**	**0**	**0**

2016-19

St. Claret College

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Department of Sciences

Batch - 2018-19

Ms. Somaiyoli Mohapatra.

Paper Code: SB7112

Course Title: Visual Programming

Credits: 2 Credits

Course Outcomes Alignment with Instructional and Assessment

CO	Course Outcome	Cognitive Level	Knowledge Category	Instructional Method	Assessment Method	No. of Hrs.	POs/PSOs
CO1	**Describes** basic programming techniques and elements.	Understand	Conceptual	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO2	**Explains** the programming techniques.	Apply, Create	Procedural	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO3	**Explains** programming techniques	Evaluate, Apply, Create	Procedural	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO4	**Describes** programming using VC++.	Analyse	Conceptual, Procedural	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO5	**Explains** programming techniques using VC++.	Analyse	Conceptual, Procedural	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1

Attainment of Outcomes

Computation of CO Attainment of Visual Programming

CO	A1Assignment/Presentation(10)	CIA I(10)	Preparatory Examination(10)
CO1	2	5	1
CO2	2	5	1
CO3	2	0	1
CO4	2	0	3
CO5	2	0	4

Attainment of COs from CIE

Class average in CIE

CO	Assignment/Presentation Class Average (10)	CIA I Class Average (10)	Preparatory Examination Class Average (10)	CIE Class Average (%)
CO1	1.46	3.65	0.73	73
CO2	1.44	3.6	0.72	72
CO3	1.3	0	0.65	65
CO4	1.38	0	2.07	69
CO5	1.34	0	2.68	67

Attainment of COs from SEE

CO	Class Average in Semester End Exam
CO1	65
CO2	61
CO3	64
CO4	65
CO5	60

Computation of CO Direct Attainment in the course

Attainment of CO in a course Cxxx = Wt. of CIE x Attainment of CO as percentage in CIE + Wt. of SEE x Class Average Marks Percentage in SEE

CO	CIE Class Average	SEE Class Average	Direct CO Attainment 0.3 CIE Class Average +0.7 SEE Class Average
CO1	73	65	67.4
CO2	72	61	64.3
CO3	65	64	64.3
CO4	69	65	66.2
CO5	67	60	62.1

Setting CO Attainment Targets

Targets			
(% of students getting < 50)	(% of students getting >50 and < 65)	(% of students getting >65 and < 80)	(% of students getting > 80)
10	40	30	10

It does not directly indicate the distribution of performance among the students. It has the advantage of finding out the difficulty of specific Cos.

CO	Target (Class Average)
CO1	66
CO2	60
CO3	64
CO4	70
CO5	60

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	67.4	66	-1.4
CO2	64.3	60	-4.3
CO3	64.3	64	-0.3
CO4	66.2	70	3.8
CO5	62.1	60	-2.1

COs	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	66	-1.4		70
CO2	60	-4.3		70
CO3	64	-0.3		70
CO4	70	3.8	Include more presentations	70
CO5	60	-2.1		70

CO-PO/PSO Mappings

CO	POs	Class Sessions
CO1	PO1,PSO1	12
CO2	PO1,PSO1	12
CO3	PO1,PSO1	12
CO4	PO1,PSO1	12
CO5	PO1,PSO1	12
		60

Course – PO/PSO Mapping Strength

60 OF 60 (100%) Sessions are devoted to PO1	Mapping Strength is 3
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3

Course-POs/PSO Mapping

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
VP	3	0	0	0	0	0	0	3	0	0	0	0	0

CO Attainment and POs/PSOs

CO	PO/PSOs	CO Attainment (%ge)
CO1	PO1,PSO1	**67.4**
CO2	PO1,PSO1	**64.3**
CO3	PO1,PSO1	**64.3**
CO4	PO1,PSO1	**66.2**
CO5	PO1,PSO1	**62.1**

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PO1	(3/3) X (67.4+64.3+64.3+66.2+62.1)/5=64.86
PSO1	(3/3) X (67.9+67.9+67.9+68.8+68.2)/5=64.86

Attainment of POs and PSOs

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
VP	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**
Attainment	.64	-	-	-	-	-	-	.64	-	-	-	-	-

Attainment of Outcomes
Computation of CO Attainment
Batch: 2016 – 19
Name of the faculty: Jayalakshmi R/ Semester: IV Semester

Course: UNIX Shell Programming **Credits: 2**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Understands** the features and architecture of UNIX with an introduction to process management	Conceptual	Understand and Remember	12	PSO4
CO2	**Explains** the secondary storage management, special tools and utilities	Factual	Understand and Remember	12	PSO4
CO3	**Understands** the concept of shell programming	Conceptual and Factual	Understand and Remember	12	PO1, PSO1, PSO4
CO4	**Understands** conditional control structures in shell programming	Factual and Conceptual	Understand and Remember	12	PO1, PSO1, PSO4
CO5	**Understands** UNIX system communication and system administration	Conceptual	Understand and Remember	12	PSO4

CO Attainment Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (10)	T2 (10)
CO1	2	5	2
CO2	2	5	2
CO3	2	0	2
CO4	2	0	2
CO5	2	0	2

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 (10)	T1 (10)	T2 (10)	CIE Class Average (%)
CO1	1.52	3.8	1.52	76
CO2	1.482	3.705	1.482	74.1
CO3	1.44	0	1.44	72
CO4	1.46	0	1.46	73
CO5	1.4426	0	1.4426	72.13
			CIE %	73.45

Computation of CO Direct Attainment in the course

CO	CIE (Cl. Ave)	SEE (Cl. Ave)	Direct CO Attainment 0.3xCIE Cl. Ave + 0.7xSEE Cl.Ave)
CO1	76	65.77	68.839
CO2	74.1	65.77	68.269
CO3	72	65.77	67.639
CO4	73	65.77	67.939
CO5	72.13	65.77	67.678

Targets: Targets are set for each CO of a course separately as

CO	Target
CO1	67
CO2	62
CO3	65
CO4	68
CO5	68

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO Attainment Gap
CO1	68.839	67	-1.839
CO2	68.269	62	-6.269
CO3	67.639	65	-2.639
CO4	67.939	68	0.061
CO5	67.678	68	0.322

Closure of the Quality Loop for COs

CO	Target	CO Attainment Gap	Action Proposed to Bridge the Gap	Modification of Target to be Achieved
CO1	67	-1.839		69
CO2	62	-6.269		69
CO3	65	-2.639		69
CO4	68	0.061	More previous year question papers to be solved	
CO5	68	0.322	Remedial coaching should be initiated	

CO - PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO4	12
CO2	PSO4	12
CO3	PO1, PSO1, PSO4	12
CO4	PO1, PSO1, PSO4	12
CO5	PSO4	12
		60

Course - PO/PSO Mapping Strength

Sessions Devoted to Each PO/PSO	Percentage (%)	Mapping Strength
24 OF 60 Sessions are devoted to PSO1	40	2
60 OF 60 Sessions are devoted to PSO4	100	3
24 OF 60 Sessions are devoted to PO1	40	2

Course - POs/PSO Mapping

Course	POs												PSOs				
UNIX	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
Shell Programming	2												2			3	

CO Attainment and POs/PSOs

CO	POs/PSOs	CO Attainment(%)
CO1	PSO4	68.839
CO2	PSO4	68.269
CO3	PO1, PSO1, PSO4	67.639
CO4	PO1, PSO1, PSO4	67.939

CO5	PSO4	67.678

PO and PSO Attainment

Attainment (%)= (Average of attainments of relevant COs) x Scale Factor

Scale Factor= (Actual Mapping Strength / Maximum Possible Mapping Strength)

PO/PSO	Attainment (%)
PSO1	(67.639+67.939)/2 x (2/3) = 45.19%
PSO4	(68.839+68.269+ 67.639+ 67.939+67.678)/5 x (3/3) = 68.07%
PO1	(67.639+67.939)/2 x (2/3) = 45.19%

Attainment of POs and PSOs

Course	POs												PSOs				
UNIX	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
Shell Programming	2												2			3	
Attainment	0.45												0.45			0.68	

HOD Department of Sciences
St Claret College,
Jalahalli, Bengaluru - 560013.

2016 - 19

Attainment of Outcomes
Computation of CO Attainment
Subject: Operation Research and Quantitative Techniques

Credits: 3

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Explain** Linear Programming Problems	Conceptual and Procedural	Understand and Remember	12	PSO2
CO2	**Understand** Transportation Problem	Conceptual and Procedural	Understand and Remember	12	PO1, PSO2
CO3	**Understand** Probability	Conceptual and Procedural	Understand and Remember	12	PSO2
CO4	**Describe** Network Analysis	Conceptual and Procedural	Understand and Remember	12	PO1, PSO2
CO5	**Understand** Decision Making	Conceptual and Procedural	Understand and Remember	12	PSO2

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (20)	T2 (20)
CO1	2	10	5
CO2	2	10	3
CO3	2	0	2
CO4	2	0	5
CO5	2	0	5

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (20)	T2 Cl. Ave (20)	CIE Class Average (%)
CO1	1.58/2	7.9/10	3.95/5	45
CO2	1.6/2	8/10	2.4/3	50
CO3	1.6/2	0	1.6/2	55
CO4	1.58/2	0	3.95/5	50
CO5	1.6/2	0	4/5	45

Attainment of COs from SEE

CO	Class Average in SEE
CO1	63
CO2	63
CO3	63
CO4	63
CO5	63

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 CIE Cl. Ave +.7 SEE Cl. Ave
CO1	45	63	57.6
CO2	50	63	59.1
CO3	55	63	60.6
CO4	50	63	59.1
CO5	45	63	57.6

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	65
CO2	65
CO3	65
CO4	65
CO5	65

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	57.6	65	-5.4
CO2	59.1	65	-5.9
CO3	60.6	65	-4.4
CO4	59.1	65	--5.9
CO5	57.6	65	-5.4

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Modification of target where achieved
CO1	65	-5.4	70
CO2	65	-5.9	70
CO3	65	-4.4	70
CO4	65	--5.9	70
CO5	65	-5.4	70

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO2	12
CO2	PO1, PSO2	12
CO3	PSO2	12
CO4	PO1, PSO2	12
CO5	PSO2	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3
24 OF 60 (40%) Sessions are devoted to PO1	Mapping Strength is 2

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
OR	2	--	--	--	--	--	--	--	--	--	--	--	--	3	--	--	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO2	57.6
CO2	PO1, PSO2	59.1
CO3	PSO2	60.6
CO4	PO1, PSO2	59.1
CO5	PSO2	57.6

PO and PSO Attainment

PO/PSO	Attainment (%)
PSO2	(3/3) X (57.6+59.1+60.6+59.1+57.6)/5= **58.8%**
PO1	(2/3) X (59.1+59.1)/2=**39.4%**

Attainment of POs and PSOs

Course	POs												PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
OR	2	-	--	--	-	---	--	-	-	--	--	--	---	3	--	--	--
Attainment	0.39	-	--	--	-	--	--	-	-	--	--	--	---	.58	--		--

Attainment of Outcomes
Computation of CO Attainment
Batch: 2016 – 19
Name of the faculty: Jayalakshmi R/ Semester: V Semester

Course: Data Communications and Networks **Credits: 3**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Understands** basic concepts of networking and digital transmission	Conceptual	Understand and Remember	12	PSO4
CO2	**Explains** the properties of media and various transmission systems	Factual	Understand and Remember	12	PSO4
CO3	**Understands** the concept of Peer to Peer protocols and service models	Conceptual and Factual	Understand and Remember	12	PSO4
CO4	**Describes** Local Area Networks and Medium Access Control Protocols	Factual and Conceptual	Understand and Remember	12	PO1, PSO4
CO5	**Understand** LAN standard, wireless LANs, packet network topology with an overview of routing and congestion in packet networks	Conceptual	Understand and Remember	10	PO1, PSO4

CO
Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (20)	T2 (20)
CO1	2	10	5
CO2	2	10	3
CO3	2	0	4
CO4	2	0	4
CO5	2	0	4

Attainment of COs from CIE
Class average in CIE (As Calculated)

CO	A1 (10)	T1 (10)	T2 (10)	CIE Class Average (%)
CO1	1.38	6.9	3.45	69
CO2	1.38	6.9	2.07	69
CO3	1.32	0	2.64	66
CO4	1.3	0	2.6	65
CO5	1.32	0	2.64	66
			CIE %	67

Attainment of COs from SEE

CO	Class Average in SEE (%)
CO1	60.5
CO2	60.5
CO3	60.5
CO4	60.5
CO5	60.5

Computation of CO Direct Attainment in the course

CO	CIE (Cl. Ave)	SEE (Cl. Ave)	Direct CO Attainment 0.3xCIE Cl. Ave + 0.7xSEE Cl.Ave)
CO1	69	60.5	63
CO2	69	60.5	63
CO3	66	60.5	62
CO4	65	60.5	62
CO5	66	60.5	62

Targets: Targets are set for each CO of a course separately as

CO	Target
CO1	68
CO2	65
CO3	65
CO4	63
CO5	62

CO Attainment Gap

CO	CO Attainment	Target (Class Average)		CO Attainment Gap
CO1	63.05	68		4.95
CO2	63.05	65		1.95
CO3	62.15	65		2.85
CO4	61.85	63		1.15
CO5	62.15	62		0.15

Closure of the Quality Loop for COs

CO	Target	CO Attainment Gap	Action Proposed to Bridge the Gap	Modification of Target to be Achieved
CO1	68	4.95	More tests and assignments to be given	
CO2	65	1.95	Peer teaching should be initiated	
CO3	65	2.85	More tests and assignments to be given	
CO4	63	1.15	Remedial coaching should be initiated	
CO5	62	-0.15		65

CO - PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO4	12
CO2	PSO4	12
CO3	PSO4	12
CO4	PO1,PSO4	12
CO5	PO1,PSO4	12
		60

Course - PO/PSO Mapping Strength

Sessions Devoted to Each PO/PSO	Percentage (%)	Mapping Strength
60 OF 60 Sessions are devoted to PSO4	100	3
24 OF 60 Sessions are devoted to PO1	40	2

Course - POs/PSO Mapping

Course	POs												PSOs				
Data	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
Communication and Networks	2															3	

CO Attainment and POs/PSOs

CO	POs/PSOs	CO Attainment(%)
CO1	PSO4	63.05
CO2	PSO4	63.05
CO3	PSO4	62.15
CO4	PO1,PSO4	61.85
CO5	PO1,PSO4	62.15

PO and PSO Attainment

Attainment (%)= (Average of attainments of relevant COs) x Scale Factor

Scale Factor= (Actual Mapping Strength / Maximum Possible Mapping Strength)

PO/PSO	Attainment (%)
PSO4	(63.05+63.05+62.15+61.85+62.15)/5 x (3/3) = 62.45%
PO1	(61.85+62.15)/2 x (2/3) = 41.33%

Attainment of POs and PSOs

Course	POs												PSOs				
Data Communication and Networks	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
	2															3	
Attainment	0.63															0.41	

Rajalakshmi

2016-19

Attainment of Outcomes
Computation of CO Attainment

Subject: Software Engineering

Credits: 3

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Explain** Software Products and Software process, Process models	Conceptual and Procedural	Understand and Remember	12	PSO3
CO2	**Understand** Software Prototyping and Software Design	Factual	Understand and Remember	12	PO1, PSO3
CO3	**Understand** Object Oriented& function-oriented design	Conceptual and Factual	Understand and Remember	12	PSO3
CO4	**Describe** Software Reliability and reusability	Factual and Conceptual	Understand and Remember	12	PO1, PSO3
CO5	**Understand** Software Verification and Validation,	Conceptual and Procedural	Understand and Remember	12	PSO3

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (20)	T2 (20)
CO1	2	10	5
CO2	2	10	3
CO3	2	0	2
CO4	2	0	5
CO5	2	0	5

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (20)	T2 Cl. Ave (20)	CIE Class Average (%)
CO1	1.5/2	7.5/10	1.5/5	75
CO2	1.3/2	6.5/10	1.95/3	65
CO3	1.4/2	0	1.4/2	70
CO4	1.3/2	0	3.25/5	65
CO5	1.44/2	0	3.6/5	72

Attainment of COs from SEE

CO	Class Average in SEE
CO1	65
CO2	65
CO3	65
CO4	65
CO5	65

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 *CIE Cl. Ave +0.7*SEE Cl. Ave
CO1	75	65	68
CO2	65	65	65
CO3	70	65	66.5
CO4	65	65	65
CO5	72	65	67.1

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	70
CO2	65
CO3	65
CO4	70
CO5	65

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	68	70	2
CO2	65	65	0
CO3	66.5	65	-1.5
CO4	65	70	5
CO5	67.1	65	-2.1

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	70	2	More assignment	72
CO2	65	0	More assignment	
CO3	65	-1.5		70
CO4	70	5	More assignment	
CO5	65	-2.1		70

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO3	12
CO2	PO1, PSO3	12
CO3	PSO3	12
CO4	PO1, PSO3	12
CO5	PSO3	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
60 OF 60 (100%) Sessions are devoted to PSO3	Mapping Strength is 3
24 OF 60 (40%) Sessions are devoted to PO1	Mapping Strength is 2

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
LGI	2	--	--	--	--	--	--	--	--	--	--	--	--	--	3	---	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO3	68
CO2	PO1, PSO3	65
CO3	PSO3	66.5
CO4	PO1, PSO3	65
CO5	PSO3	67.1

PO and PSO Attainment

PO/PSO	Attainment (%)
PSO3	(3/3) X (68+65+66.5+65+67.1)/5= **66.32%**
PO1	(2/3) X (65+65)/2=43.33%

Attainment of POs and PSOs

Course	POs												PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
SE	2	-	--	--	-	---	--	-	-	--	--	--	--	-	--	3	--
Attainment	.43	-	--	---	-	---	--	-	-	--	--	--	--	-	--	.66	--

2016-19

Attainment of Outcomes
Computation of CO Attainment

Course: Computer Architecture **Credits: 3**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	Explain the digital logic circuits	Conceptual and Procedural	Understand and Apply	12	PSO4
CO2	Apply the data representation	Factual	Evaluate and Apply	12	PSO1, PSO4
CO3	Understand the basic computer organisation and design	Conceptual and Factual	Understand and Remember	12	PO1, PSO4
CO4	Describe the central processor organization	Procedural and Factual	Understand and Analyse	12	PO1, PSO4
CO5	Understand the input-output organisation	Conceptual	Understand and Remember	12	PSO1, PSO4

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (20)	T2 (20)
CO1	2	08	5
CO2	2	08	2
CO3	2	4	5
CO4	2	0	4
CO5	2	0	4

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (20)	T2 Cl. Ave (20)	CIE Class Average (%)
CO1	1.6/2	6.4/8	4/5	80
CO2	1.7/2	6.8/8	1.7/2	85
CO3	1.6/2	3.2/4	4/5	80
CO4	1.5/2	0	3/4	75
CO5	1.48/2	0	2.96/4	74

Attainment of COs from SEE

CO	Class Average in SEE
CO1	61
CO2	61
CO3	61
CO4	61
CO5	61

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 *CIE Cl. Ave +0.7 * SEE Cl. Ave
CO1	80	61	66.7
CO2	85	61	68.2
CO3	80	61	66.7
CO4	75	61	65.2
CO5	74	61	64.9

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	70
CO2	70
CO3	65
CO4	68
CO5	64

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap **CA-COA**
CO1	66.7	70	3.3
CO2	68.2	70	1.8
CO3	66.7	65	-1.7
CO4	65.2	68	2.8
CO5	64.9	64	-0.9

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	70	3.3	More assignments to be given Presentation Previous year question papers to be solved	
CO2	70	1.8	More assignments to be given Presentation Previous year question papers to be solved	
CO3	65	-1.7		68
CO4	68	2.8	More assignments to be given Presentation Previous year question papers to be solved	
CO5	64	-0.9		68

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO4	12
CO2	PSO1, PSO4	12
CO3	PO1, PSO4	12
CO4	PO1, PSO4	12
CO5	PSO1, PSO4	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
24 OF 60 (40%) Sessions are devoted to PSO1	Mapping Strength is 2
60 OF 60 (100%) Sessions are devoted to PSO4	Mapping Strength is 3
24 OF 60 (40%) Sessions are devoted to PO1	Mapping Strength is 2

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
CA	2	--	--	--	--	--	--	--	--	--	--	--	2	--	--	3	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO4	66.7
CO2	PSO1, PSO4	68.2
CO3	PO1, PSO4	66.7
CO4	PO1, PSO4	65.2
CO5	PSO1, PSO4	64.9

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PSO1	(2/3) X (68.2+64.9)/2= 44.36
PSO4	(3/3) X (66.7+68.2+66.7+65.2+64.9)/5=66.34
PO1	(2/3) X (66.7+65.2)/2=44.03

Attainment of POs and PSOs

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
CA	2	-	--	--	-	--	--	-	-	--	--	--	2	-	--	3	--
Attainment	.44	-	--	--	-	--	--	-	-	--	--	--	.44	-	--	.66	--

2016-19
Dr. Mohan

Attainment of Outcomes
Computation of CO Attainment

Course: Java Programming **Credits: 3**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Understand** the basic concepts of Internet and history of Java	Conceptual	Understand and Remember	12	PSO1, PO1
CO2	**Clarify** the concepts of arrays, classes, strings and vectors	Factual	Understand and Remember	12	PSO1, PO1
CO3	**Understand** the concept of Interface and Packages	Conceptual and Factual	Understand and Remember	12	PSO1, PO1
CO4	**Understand** the logic of Exceptions and Applet	Factual and Conceptual	Understand and Remember	12	PO1, PSO1
CO5	**Understand** the concept of Graphics programming	Conceptual	Understand and Remember	12	PO1, PSO1

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (10)	T2 (10)
CO1	2	0	2
CO2	2	0	2
CO3	2	0	2
CO4	2	5	2
CO5	2	5	2

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (10)	T2 Cl. Ave (10)	CIE Class Average (%)
CO1	1/2	0	1/2	50
CO2	1/2	0	1/2	50
CO3	1/2	0	1/2	50
CO4	1/2	2/5	1/2	44.44
CO5	1/2	2/5	1/2	44.44

Attainment of COs from SEE

CO	Class Average in SEE
CO1	48.5
CO2	48.5
CO3	48.5
CO4	48.5
CO5	48.5

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 CIE Cl. Ave +0.7 SEE Cl. Ave
CO1	50	48.5	48.25
CO2	50	48.5	48.25
CO3	50	48.5	48.25
CO4	44.44	48.5	45.47
CO5	44.44	48.5	45.47

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	50
CO2	50
CO3	45
CO4	52
CO5	48

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	48.25	50	1.75
CO2	48.25	50	1.75
CO3	48.25	45	-3.25
CO4	45.47	52	6.53
CO5	45.47	48	2.53

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	52	1.75	Clarity about the concept to be given through more live examples	
CO2	48	1.75	More assignments to be given and video presentation to be shown	
CO3	45	-3.25		48.25
CO4	50	6.53	Revision on the topic to done in the coming semesters	
CO5	50	2.53	Previous year question papers to be solved	

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO1,PSO3	12
CO2	PSO1, PSO3	12
CO3	PSO1,PSO3	12
CO4	PO1,PSO1, PSO3	12
CO5	PSO1,PSO3	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3
60 OF 60 (7%) Sessions are devoted to PSO3	Mapping Strength is 3
12 OF 56 (21.4%) Sessions are devoted to PO1	Mapping Strength is 2

Course-POs/PSO Mapping

Course	PSOs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**1**	**2**	**3**	**4**	**5**
JAVA	--	2	--	-	--	-	--	--	--	3	-	3

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO1, PSO3	48.25
CO2	PSO1, PSO3	48.25
CO3	PSO1, PSO3	48.25
CO4	PO1, PSO1, PSO3	45.47
CO5	PO1, PSO1, PSO3	45.47

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PSO1	(3/3) X (48.25+48.25+45.47+48.25+48.25)/5= **47.18%**
PSO3	(3/3) X (48.25+48.25+45.47+48.25+48.25)/5=**47.18%**
PO1	(2/3) X (48.25)=**32.16%**

Attainment of POs and PSOs

Course	PSOs											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**1**	**2**	**3**	**4**	**5**
JAVA	2	-	--	-	-	-	--	3	-	3	--	--
Attainment	.32	-	--	-	-	-	--	.47	-	.47	--	--

2016-19

St. Claret College

NAAC Accredited | Affiliated to Bangalore University

Department of Sciences

2016-19

Ms. Somajoti Mohapatra

Paper Code: SB7119

Course Title: Microprocessor and Assembly Language

Credits: 2 Credits

Course Outcomes Alignment with Instructional and Assessment

CO	Course Outcome	Cognitive Level	Knowledge Category	Instructional Method	Assessment Method	No. of Hrs.	POs/PSOs
CO1	**Describes** the internal architecture of 8085 microprocessor and its operation.	Understand	Conceptual	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO2	**Explains** the concepts of assembly level programs and various programming statements.	Apply, Create	Procedural	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO3	**Explains** programming techniques	Evaluate, Apply, Create	Procedural	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO4	**Describes** the memory interfacing with 8085 microprocessor.	Analyse	Conceptual, Procedural	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1
CO5	**Explains** I/O interfacing of peripherals with 8085 microprocessor.	Analyse	Conceptual, Procedural	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO1

Attainment of Outcomes

Computation of CO Attainment of Microprocessor and Assembly Language

CO	A1Assignment/Presentation(10)	CIA I(10)	Preparatory Examination(10)
CO1	2	3	2
CO2	2	4	1
CO3	2	3	1
CO4	2	0	3
CO5	2	0	3

Attainment of COs from CIE Class average in CIE

CO	Assignment/Presentation Class Average (10)	CIA I Class Average (10)	Preparatory Examination Class Average (10)	CIE Class Average (%)
CO1	1.54	2.31	1.54	77
CO2	1.52	3.04	0.76	76
CO3	1.54	2.31	0.77	77
CO4	1.54	0	2.31	77
CO5	1.6	0	2.4	80

Attainment of COs from SEE

CO	Class Average in Semester End Exam
CO1	60
CO2	69
CO3	60
CO4	50
CO5	50

Computation of CO Direct Attainment in the course

Attainment of CO in a course Cxxx = Wt. of CIE x Attainment of CO as percentage in CIE + Wt. of SEE x Class Average Marks Percentage in SEE

CO	CIE Class Average	SEE Class Average	Direct CO Attainment 0.3 CIE Class Average +0.7 SEE Class Average
CO1	77	60	65.1
CO2	76	69	71.1
CO3	77	60	65.1
CO4	77	50	58.1
CO5	80	50	59

Setting CO Attainment Targets

Targets			
(% of students getting < 50)	(% of students getting >50 and < 65)	(% of students getting >65 and < 80)	(% of students getting > 80)
10	40	30	10

It does not directly indicate the distribution of performance among the students. It has the advantage of finding out the difficulty of specific Cos.

CO	Target (Class Average)
CO1	70
CO2	70
CO3	75
CO4	60
CO5	75

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	65.1	70	4.9
CO2	71.1	70	-1.1
CO3	65.1	75	9.9
CO4	58.1	60	1.9
CO5	59	75	16

COs	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	70	4.9	Include more presentations	
CO2	70	-1.1	-	75
CO3	75	9.9	Include more presentations	
CO4	60	1.9	Include more presentations	
CO5	75	16	Include more presentations	

CO-PO/PSO Mappings

	POs	Class Sessions
CO1	**PO1,PSO1**	12
CO2	**PO1,PSO1**	12
CO3	**PO1,PSO1**	12
CO4	**PO1,PSO1**	12
CO5	**PO1,PSO1**	12
		60

Course – PO/PSO Mapping Strength

60 OF 60 (100%) Sessions are devoted to PO1	Mapping Strength is 3
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3

Course-POs/PSO Mapping

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
MALP	3	0	0	0	0	0	0	3	0	0	0	0	0

CO Attainment and POs/PSOs

CO	PO/PSOs	CO Attainment (%ge)
CO1	PO1,PSO1	65.1
CO2	PO1,PSO1	71.1
CO3	PO1,PSO1	65.1
CO4	PO1,PSO1	58.1
CO5	PO1,PSO1	59

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PO1	(3/3) X (65.1+71.1+65.1+58.1+59)/5=63.68
PSO1	(3/3) X (73+73.6+74.5+74.2+73)/5=63.68

Attainment of POs and PSOs

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
MALP	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**
Attainment	.63	**0**	**0**	**0**	**0**	**0**	**0**	.63	**0**	**0**	**0**	**0**	**0**

2016-19

Attainment of Outcomes
Computation of CO Attainment

Course: Theory of Computation **Credits: 3**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	Explain the Introduction to finite automata	Conceptual, Factual and Procedural	Understand and Evaluate	12	PO1 PSO1 PSO2 PSO4
CO2	Understand and Apply the Regular expression	Conceptual, Factual and Procedural	Evaluate and Apply	12	PO1 PSO1 PSO2
CO3	Understand and describe the Context free grammar	Conceptual, Factual and Procedural	Understand and Apply	12	PO1 PSO1 PSO2
CO4	Understand and explain the Deterministic Pushdown automata	Conceptual, Factual and Procedural	Understand and Analyse	12	PO1 PSO1 PSO2 PSO4
CO5	Understand the Turing Machine	Conceptual, Factual and Procedural	Evaluate and Analyse	12	PO1 PSO1

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (20)	T2 (20)
CO1	2	10	4
CO2	2	10	4
CO3	2	0	5
CO4	2	0	5
CO5	2	0	2

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (20)	T2 Cl. Ave (20)	CIE Class Average (%)
CO1	1.64/2	8.4/10	3.36/4	84
CO2	1.6/2	8/10	3.2/4	80
CO3	1.6/2	0	4/5	80
CO4	1.62/2	0	4.1/5	82
CO5	1.7/2	0	1.7/2	85

Attainment of COs from SEE

CO	Class Average in SEE
CO1	65
CO2	65
CO3	65
CO4	65
CO5	65

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 *CIE Cl. Ave +0.7 * SEE Cl. Ave
CO1	84	65	70.7
CO2	80	65	69.5
CO3	80	65	69.5
CO4	82	65	70.1
CO5	85	65	71

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	75
CO2	75
CO3	68
CO4	75
CO5	70

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap **CA-COA**
CO1	70.7	75	4.3
CO2	69.5	75	5.5
CO3	69.5	68	-1.5
CO4	70.1	75	4.9
CO5	71	70	-1

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	75	4.3	More assignments to be given Previous year question papers to be solved	
CO2	75	5.5	More assignments to be given Tutorial class Previous year question papers to be solved	
CO3	68	-1.5		70
CO4	75	4.9	More assignments to be given Previous year question papers to be solved	
CO5	70	-1		72

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PO1 PSO1 PSO2 PSO4	12
CO2	PO1 PSO1 PSO2	12
CO3	PO1 PSO1 PSO2	12
CO4	PO1 PSO1 PSO2 PSO4	12
CO5	PO1 PSO1	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
60 OF 60 (100%) Sessions are devoted to PO1	Mapping Strength is 3
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3
48 OF 60 (100%) Sessions are devoted to PSO2	Mapping Strength is 2
24 OF 60 (40%) Sessions are devoted to PSO4	Mapping Strength is 2

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
TOC	3	--	--	--	--	--	--	--	--	--	--	--	3	2	--	2	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PO1 PSO1 PSO2 PSO4	70.7
CO2	PO1 PSO1 PSO2	69.5
CO3	PO1 PSO1 PSO2	69.5
CO4	PO1 PSO1 PSO2 PSO4	70.1
CO5	PO1 PSO1	71

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PO1	(3/3) X (70.7+69.5+69.5+70.1+71)/5= 70.16
PSO1	(3/3) X (70.7+69.5+69.5+70.1+71)/5= 70.16
PSO2	(2/3) X (70.7+69.5+69.5+70.1)/4= 46.63
PSO4	(2/3) X (70.7+70.1)/2= 46.93

Attainment of POs and PSOs

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
CA	3	-	--	--	-	--	--	-	-	--	--	--	3	2	--	3	--
Attainment	.7	-	--	--	-	--	--	-	-	--	--	--	.7	.46	--	.46	--

2016-19

St. Claret College
NAAC Accredited | Affiliated to Bangalore University
Department of Sciences
2016-19
Ms. Somajot. Mohapatra.

Paper Code: SB7121

Course Title: System Programming

Credits: 3 Credits

Course Outcomes Alignment with Instructional and Assessment

CO	Course Outcome	Cognitive Level	Knowledge Category	Instructional Method	Assessment Method	No. of Hrs.	POs/PSOs
CO1	**Describes** the basics of system software.	Understand	Conceptual	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4
CO2	**Explains** the concepts of Assembler.	Understand	Conceptual	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4
CO3	**Explains** the concepts of Macro.	Understand	Conceptual	PPT, Demonstration	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4
CO4	**Explains** the concepts of loader.	Understand	Conceptual	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4
CO5	**Explains** the concepts of Compiler.	Understand	Conceptual	PPT	IA Exams, Semester End Exam(SEE)	12	PO1,PSO4

Attainment of Outcomes

Computation of CO Attainment of Operating System

CO	A1Assignment/Presentation(10)	CIA I(20)	Preparatory Examination(20)
CO1	2	10	1
CO2	2	10	3
CO3	2	0	5
CO4	2	0	5
CO5	2	0	6

Attainment of COs from CIE Class average in CIE

CO	Assignment/Presentation Class Average (10)	CIA I Class Average (10)	Preparatory Examination Class Average (10)	CIE Class Average (%)
CO1	1.44	7.2	0.72	72
CO2	1.6	8	2.4	80
CO3	1.6	0	4	80
CO4	1.5	0	3.75	75
CO5	1.48	0	4.44	74

Attainment of COs from SEE

CO	Class Average in Semester End Exam
CO1	72
CO2	80
CO3	80
CO4	75
CO5	74

Computation of CO Direct Attainment in the course

Attainment of CO in a course Cxxx = Wt. of CIE x Attainment of CO as percentage in CIE + Wt. of SEE x Class Average Marks Percentage in SEE

CO	CIE Class Average	SEE Class Average	Direct CO Attainment 0.3 CIE Class Average +0.7 SEE Class Average
CO1	72	72	65.7
CO2	80	80	71.6
CO3	80	80	71.6
CO4	75	75	70.1
CO5	74	74	66.3

Setting CO Attainment Targets

Targets			
(% of students getting < 50)	(% of students getting >50 and < 65)	(% of students getting >65 and < 80)	(% of students getting > 80)
10	40	30	10

CO	Target (Class Average)
CO1	50
CO2	35
CO3	40
CO4	40
CO5	40

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	65.7	50	-15.7
CO2	71.6	35	-36.6
CO3	71.6	40	-31.6
CO4	70.1	40	-30.1
CO5	66.3	40	-26.3

COs	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	50	-15.7		60
CO2	35	-36.6		40
CO3	40	-31.6		45
CO4	40	-30.1		50
CO5	40	-26.3		55

CO-PO/PSO Mappings

	POs	Class Sessions
CO1	PO1,PSO4	12
CO2	PO1,PSO4	12
CO3	PO1,PSO4	12
CO4	PO1,PSO4	12
CO5	PO1,PSO4	12
		60

Course – PO/PSO Mapping Strength

60 OF 60 (100%) Sessions are devoted to PO1	Mapping Strength is 3
60 OF 60 (100%) Sessions are devoted to PSO4	Mapping Strength is 3

Course-POs/PSO Mapping

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
System Programming	3	0	0	0	0	0	0	0	0	0	3	0	0

CO Attainment and POs/PSOs

CO	PO/PSOs	CO Attainment (%ge)
CO1	PO1,PSO4	-15.7
CO2	PO1,PSO4	-36.6
CO3	PO1,PSO4	-31.6
CO4	PO1,PSO4	-30.1
CO5	PO1,PSO4	-26.3

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PO1	(3/3) X (15.7+36.6+31.6+30.1+26.3)/5=28.06
PSO4	(3/3) X(15.7+36.6+31.6+30.1+26.3)/5=28.06

Attainment of POs and PSOs

Course	POs							PSOs					
	1	2	3	4	5	6	7	1	2	3	4	5	6
SP	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**
Attainment	0.28	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.28**	**0**	**0**

2016 - 19

Attainment of Outcomes
Computation of CO Attainment
Subject: Cryptography and Network Security

Credits: 3

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Explain**Linear Programming Problems	Conceptual and Procedural	Understand and Remember	12	PSO2
CO2	**Understand** Transportation Problem	Conceptual and Procedural	Understand and Remember	12	PO1, PSO2
CO3	**Understand** Assignment Problem	Conceptual and Procedural	Understand and Remember	12	PSO2
CO4	**Describe** Network Analysis	Conceptual and Procedural	Understand and Remember	12	PO1, PSO2
CO5	**Understand** Theory of Games	Conceptual and Procedural	Understand and Remember	12	PSO2

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (20)	T2 (20)
CO1	2	10	5
CO2	2	10	3
CO3	2	0	2
CO4	2	0	5
CO5	2	0	5

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (20)	T2 Cl. Ave (20)	CIE Class Average (%)
CO1	1.58/2	7.9/10	3.95/5	45
CO2	1.6/2	8/10	2.4/3	50
CO3	1.6/2	0	1.6/2	55
CO4	1.58/2	0	3.95/5	50
CO5	1.6/2	0	4/5	45

Attainment of COs from SEE

CO	Class Average in SEE
CO1	63
CO2	63
CO3	63
CO4	63
CO5	63

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 CIE Cl. Ave +.7 SEE Cl. Ave
CO1	45	63	57.6
CO2	50	63	59.1
CO3	55	63	60.6
CO4	50	63	59.1
CO5	45	63	57.6

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	65
CO2	65
CO3	65
CO4	65
CO5	65

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	57.6	65	-5.4
CO2	59.1	65	-5.9
CO3	60.6	65	-4.4
CO4	59.1	65	--5.9
CO5	57.6	65	-5.4

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Modification of target where achieved
CO1	65	-5.4	70
CO2	65	-5.9	70
CO3	65	-4.4	70
CO4	65	--5.9	70
CO5	65	-5.4	70

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO2	12
CO2	PO1, PSO2	12
CO3	PSO2	12
CO4	PO1, PSO2	12
CO5	PSO2	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3
24 OF 60 (40%) Sessions are devoted to PO1	Mapping Strength is 2

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
OR	2	--	--	--	--	--	--	--	--	--	--	--	--	3	--	--	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO2	57.6
CO2	PO1, PSO2	59.1
CO3	PSO2	60.6
CO4	PO1, PSO2	59.1
CO5	PSO2	57.6

PO and PSO Attainment

PO/PSO	Attainment (%)
PSO2	(3/3) X (57.6+59.1+60.6+59.1+57.6)/5= **58.8%**
PO1	(2/3) X (59.1+59.1)/2=**39.4%**

Attainment of POs and PSOs

Course	POs												PSOs				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
OR	2	-	--	--	-	---	--	-	-	--	--	--	---	3	--	--	--
Attainment	0.39	-	--	--	-	--	--	-	-	--	--	--	---	.58	--		--

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Attainment of Outcomes
Computation of CO Attainment

Course: Web Programming **Credits: 3**

CO	Course Outcome	Knowledge category	Cognitive Level	No. of hours	POs/PSOs
CO1	**Understand** the basic concepts of Internet and web browser	Conceptual	Understand and Remember	12	PSO1, PSO3
CO2	**Clarify** the HTML & XHTML	Factual	Understand and Remember	12	PSO1, PSO3
CO3	**Understand** the concept of Java script	Conceptual and Factual	Understand and Remember	12	PSO1, PSO3
CO4	**Understand** the principle of DOM model	Factual and Conceptual	Understand and Remember	12	PO1, PSO1, PSO3
CO5	**Understand** the concept of DDL	Conceptual	Understand and Remember	12	PO1, PSO1, PSO3

CO Attainment
Direct Attainment of COs

Assessment Plan for CIE

CO	A1 (10)	T1 (10)	T2 (10)
CO1	2	5	2
CO2	2	5	2
CO3	2	0	2
CO4	2	0	2
CO5	2	0	2

Attainment of COs from CIE

Class average in CIE (As Calculated)

CO	A1 Cl. Ave (10)	T1 Cl. Ave (10)	T2 Cl. Ave (10)	CIE Class Average (%)
CO1	1/2	2/5	1/2	44.44
CO2	1/2	2/5	1/2	44.44
CO3	1/2	0	1/2	50
CO4	1/2	0	1/2	50
CO5	1/2	0	1/2	50

Attainment of COs from SEE

CO	Class Average in SEE
CO1	46.5
CO2	46.5
CO3	46.5
CO4	46.5
CO5	46.5

Computation of CO Direct Attainment in the course:

CO	CIE Cl. Ave	SEE Cl. Ave	Direct CO Attainment 0.3 CIE Cl. Ave +0.7 SEE Cl. Ave
CO1	44.44	46.5	45.47
CO2	44.44	46.5	45.47
CO3	50	46.5	48.25
CO4	50	46.5	48.25
CO5	50	46.5	48.25

Targets: Targets are set for each CO of a course separately as

CO	Target (Class Average)
CO1	52
CO2	48
CO3	45
CO4	50
CO5	50

CO Attainment Gap

CO	CO Attainment	Target (Class Average)	CO attainment Gap
CO1	45.47	52	6.53
CO2	45.47	48	2.53
CO3	48.25	45	-3.25
CO4	48.25	50	1.75
CO5	48.25	50	1.75

Closure of the Quality Loop for COs:

	Target	CO Attainment gap (%)	Action proposed to bridge the gap	Modification of target where achieved
CO1	52	6.53	Clarity about the concept to be given through more live examples	
CO2	48	2.53	More assignments to be given and video presentation to be shown	
CO3	45	-3.25		48.25
CO4	50	1.75	Revision on the topic to done in the coming semesters	
CO5	50	1.75	Previous year question papers to be solved	

CO-PO/PSO Mappings

CO	POs/PSOs	Class Sessions
CO1	PSO1,PSO3	12
CO2	PSO1, PSO3	12
CO3	PSO1,PSO3	12
CO4	PO1,PSO1, PSO3	12
CO5	PSO1,PSO3	12
		60

Course – PO/PSO Mapping Strength

Percentage of Sessions devoted to each PO/PSO	Mapping Strength
60 OF 60 (100%) Sessions are devoted to PSO1	Mapping Strength is 3
60 OF 60 (100%) Sessions are devoted to PSO3	Mapping Strength is 3
12 OF 56 (21.4%) Sessions are devoted to PO1	Mapping Strength is 2

Course-POs/PSO Mapping

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
CO1	2	--	--	-	--	-	--	--	--	--	--	--	3	--	3	-	--

CO Attainment and POs/PSOs

CO	POs	CO Attainment (%ge)
CO1	PSO1, PSO3	45.47
CO2	PSO1, PSO3	45.47
CO3	PSO1, PSO3	48.25
CO4	PO1, PSO1, PSO3	48.25
CO5	PO1, PSO1, PSO3	48.25

PO and PSO Attainment

Attainment of PO/PSO = (Average of attainments of relevant COs) x Scale Factor

Scale Factor = (Actual Mapping Strength / Maximum Possible Mapping Strength)

= Actual Mapping Strength / 3

PO/PSO	Attainment (%)
PSO1	(3/3) X (45.47+45.47+48.25+48.25+48.25)/5= **47.18%**
PSO3	(3/3) X (45.47+45.47+48.25+48.25+48.25)/5=**47.18%**
PO1	(2/3) X (48.25)=**32.16%**

Attainment of POs and PSOs

Course	POs												PSOs				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**
WP	2	-	--	-	-	-	--	-	-	--	--	--	3	-	3	--	--
Attainment	.32	-	--	-	-	-	--	-	-	--	--	--	.47	-	.47	--	--

Program : Bachelor of Computer Applications

BATCH : 2016 - 19

SUBJECT	POs							PSOs				
	1	2	3	4	5	6	7	1	2	3	4	5
Problem Solving Techniques using C	.43							.64			.42	
Digital Electronics	.44									.44	.44	
Discrete Mathematics	.58								.58			
Data Structures using C	.48							.73			.48	
Database Management System	.62							.62				
Numerical and Statistical methods	.43								.64			
Object Oriented Programming Using C++	.39							.39				
Financial Accounting and Management	.45						.23		.46	.23		
Operating System	.85										.85	
Visual Programming	.64							.64				
UNIX Shell Programming	.45							.45			.68	
Operation Research and Quantitative Techniques	.39								.58			

Data Communications and Networks	**.63**										**.41**	
Software Engineering	**.43**										**.66**	
Computer Architecture	**.44**							**.44**			**.66**	
JAVA Programming	**.32**							**.47**		**.47**		
Microprocessor and Assembly Language	**.63**							**.63**				
Theory of Computation	**.7**							**.7**	**.46**		**.46**	
System Programming	**.28**										**.28**	
Cryptography and Network Security	**.39**								**.58**			
Web Programming	**.32**							**.47**		**.47**		