

Academic Year 2019-20

**B.P.H.E. Society's
Ahmednagar College, Ahmednagar
Internal Quality Assurance Cell
CO, PO, and PSO Attainment Sheet**

Department Name	Computer Science)
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Program Name	M.Sc. (Computer Science)
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Program Outcomes(PO)

PO1	Enriched learning experience
PO2	Create technology-oriented students with the knowledge and ability to develop creative solutions
PO3	Better understand the effects of future developments of computer systems and technology on people and society
PO4	Develop skills to learn new technology
PO5	Grasping the concepts and issues behind its use and the use of computers.
PO6	
PO7	
PO8	
PO9	
PO10	
PO11	
PO12	

Program Specific Outcome(PSO)

PSO1	To develop standard practices and techniques in software development.
PSO2	Students will be able to learn principles of management which includes organization, planning, product design, development
PSO3	Students will be able to understand data communication concepts and its applications. Network architecture, transmission o

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Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSUT111			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Paradigm of Programming Language		CO1	2	2	2	3	1	1	2	2
Semester No	I		CO2	3	3	2	3	2	2	2	2
Teacher Name	Shital Chaudhari		CO3	2	2	2	2	2	2	1	2
Course Outcomes			CO4	3	2	3	3	2	1	2	2
	CO1	Knowledge of Separate syntax from semantics	CO5	3	2	3	2	3	1	2	2
	CO2	Learn to compare programming language designs	Average	2.60	2.20	2.40	2.60	2.00	1.40	1.80	2.00
	CO3	Understand their strengths and weaknesses									
	CO4	Enhance to learn new languages more quickly									
	CO5	Understand basic language implementation techniques									

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSUT112			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Design and Analysis of Algorithm		CO1	3	3	2	2	3	2	2	2
Semester No	I		CO2	3	2	2	3	2	3	2	2
Teacher Name	Rahul Ghodake		CO3	3	2	3	2	2	1	2	2
Course Outcomes			CO4	3	2	3	2	2	2	1	2
	CO1	To select the appropriate algorithm by doing necessary analysis of algorithms	CO5	3	2	2	2	2	1	2	2
	CO2	To learn basic Algorithm Analysis techniques and understand the use of asymptotic notation	Average	3.00	2.20	2.40	2.20	2.20	1.80	1.80	2.00
	CO3	Understand the use of data structures in improving algorithm performance									
	CO4	To develop ability to understand and design algorithms in context of space and time complexity									
	CO5	Understand classification of problems									

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSUT113			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Database Technologies		CO1	3	2	2	2	1	2	2	1
Semester No	I		CO2	3	2	3	2	2	1	2	2
Teacher Name	Roopali Kulkarni		CO3	3	2	2	1	2	2	1	1
Course Outcomes			CO4								
	CO1	Provide an overview of the concept of NoSQL technology	CO5								
	CO2	Provide an insight to the different types of NoSQL databases	Average	3.00	2.00	2.33	1.67	1.67	1.67	1.67	1.33
	CO3	Make the student capable of making a choice of what database technologies to use, based on their application needs									
	CO4										
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSDT 114C			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Web Services		CO1	3	3	3	3	2	1	2	2
Semester No	I		CO2	3	3	3	2	2	2	1	2
Teacher Name	Trupti Deochake		CO3	3	2	3	3	3	2	2	1
Course Outcomes			CO4	3	2	2	3	2	1	1	2
	CO1	To understand the details of web services technologies like WSDL,UDDI, SOAP	CO5								
	CO2	To learn how to implement and deploy web service client and server	Average	3.00	2.50	2.75	2.75	2.25	1.50	1.50	1.75
	CO3	To explore interoperability between different frameworks									
	CO4	To understand the concept of RESTful system									
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSDP114C			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Web Services Practical		CO1	3	3	3	3	2	3	2	2
Semester No	I		CO2	3	3	3	3	3	3	2	2
Teacher Name	Trupti Deochake		CO3								
Course Outcomes			CO4								
	CO1	To understand how to develop web services using Java/PHP/.Net	CO5								

	CO2	Provide a platform to connect with differet technologies	Average	3.00	3.00	3.00	3.00	2.50	3.00	2.00	2.00
	CO3										
	CO4										
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSUP115			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	PPL and Database Technologies Practical		CO1	3	3	3	2	3	3	3	2
Semester No	I		CO2	3	3	3	3	2	2	2	3
Teacher Name	Shital Chaudhari and Prachi Walunjkar		CO3								
Course Outcomes			CO4								
	CO1	enhancing skills about developing applications	CO5								
	CO2	Managing and handling big data	Average	3.00	3.00	3.00	2.50	2.50	2.50	2.50	2.50
	CO3										
	CO4										
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSUT121			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Advanced Operating System		CO1	3	3	1	1	3	1	2	1
Semester No	II		CO2	3	1	0	1	2	1	1	2
Teacher Name	Prachi Walunjkar		CO3	3	3	2	1	2	2	1	1
Course Outcomes			CO4	3	2	3	1	2	2	1	1
	CO1	Teaches Advanced Operating Systems Concepts using Unix/Linux. Describes the programming interface to the Unix/Linux system - the system call interface.	CO5								
	CO2	Writing C programs that run under Unix/Linux	Average	3.00	2.25	1.50	1.00	2.25	1.50	1.25	1.25
	CO3	provides an understanding of the functions and functional modules of Operating Systems.									
	CO4	Provides the concepts underlying in the design and implementation of Operating Systems.									
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSUT122			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Mobile Technologie		CO1	3	2	3	2	2	2	2	1
Semester No	II		CO2	3	3	3	3	3	1	2	1
Teacher Name	Nikita Munot		CO3	3	3	2	2	3	1	2	2

Course Outcomes			CO4	3	3	2	3	2	2	1	1
	CO1	To impart basic understanding of the wireless communication systems	CO5								
	CO2	To expose students to various aspects of mobile and ad-hoc networks.	Average	3.00	2.75	2.50	2.50	2.50	1.50	1.75	1.25
	CO3	Understand the issues relating to Wireless applications									
	CO4	Understand the Mobile security									
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSUT123			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Software Project Management		CO1	3	3	1	2	1	2	2	1
Semester No	II		CO2	3	1	2	1	2	1	2	2
Teacher Name	Trupti Deochake		CO3	3	2	2	2	2	1	2	2
Course Outcomes			CO4	2	1	2	1	1	2	2	1
	CO1	Enhanced skills that are required to ensure successful medium and large scale software projects.	CO5								
	CO2	Requirements Elicitation, Project Management, Verification & Validation and Management of Large Software Engineering Projects	Average	2.75	1.75	1.75	1.50	1.50	1.50	2.00	1.50
	CO3	Learn to select and apply project management techniques for process modeling, planning, estimation, process metrics and risk management;									
	CO4	Software verification and validation using inspections, design and execution of system test cases.									
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSDT124A			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Project		CO1	3	3	2	1	1	3	2	2
Semester No	II		CO2	3	2	2	1	1	2	2	2
Teacher Name	Trupti Deochake		CO3	3	3	2	0	1	2	3	3
Course Outcomes			CO4	3	3	3	3	2	2	2	3
	CO1	Time, cost estimation of project	CO5								
	CO2	how to develop real project	Average	3.00	2.75	2.25	1.25	1.25	2.25	2.25	2.50
	CO3	designing of software									
	CO4	coding and testing of software									
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSDP124A			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Project Related Assignments		CO1	3	1	3	2	1	2	3	3
Semester No	II		CO2	3	2	3	2	1	3	2	2
Teacher Name	Trupti Deochake		CO3	3	1	2	1	1	3	2	2
Course Outcomes			CO4								
	CO1	excursion of best logic	CO5								
	CO2	finding the solution of any coding problem	Average	3.00	1.33	2.67	1.67	1.00	2.67	2.33	2.33
	CO3	user friendly designing of code									
	CO4										
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CSUP125			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Practical on Advanced OS & Mobile Technologies		CO1	1	1	1	1	1	2	2	2
Semester No	II		CO2	1	2	1	2	2	3	3	3
Teacher Name	Prachi Walunjkar and Nikita Munot		CO3	1	2	1	1	1	2	2	2
Course Outcomes			CO4	3	3	3	2	3	3	3	3
	CO1	Learn basic skills of operating skills	CO5	3	2	2	2	2	3	3	3
	CO2	Finding and execution of C libraries	Average	1.80	2.00	1.60	1.60	1.80	2.60	2.60	2.60
	CO3	Creating Small operating Software application									
	CO4	Creating small mobile applications									
	CO5	Confugring new apps using Adroid operating System									

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Class		Msc Computer Science-II	Course Outcomes	Program Outcomes					PSOs			
Subject Code	Subject Name	Semester No		Teacher Name	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CS-301	Software Metrics & Project Management	III	Trupti Deochake	CO1	1	2	2	2	2	2	2	2
				CO2	1	2	2	1	2	2	2	1
				CO3	1	2	2	2	1	2	1	2
				CO4	2	2	2	2	2	2	2	2
				CO5								
				Average	1.25	2.00	2.00	1.75	1.75	2.00	1.75	1.75
	CO1	Identify the different project contexts and suggest an appropriate management strategy										
	CO2	Practice the role of professional ethics insuccessful software development										
	CO3	Identify and describe the key phases of project management										
	CO4	Determine an appropriate project management approach through an evaluation of the business context and scope of the project.										
	CO5											

Class		Msc Computer Science-II	Course Outcomes	Program Outcomes					PSOs			
Subject Code	Subject Name	Semester No		Teacher Name	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CS-302	Mobile Computing	III	Nikita Munot	CO1	1	2	2	2	2	2	2	2
				CO2	2	2	1	1	1	2	2	2
				CO3	2	2	2	2	1	2	2	2
				CO4	2	2	1	2	1	2	2	2
				CO5								
				Average	1.75	2.00	1.50	1.75	1.25	2.00	2.00	2.00
	CO1	Define mobile technologies in terms of hardware, software, and communications										
	CO2	Utilize mobile computing nomenclature to describe and analyze existng mobile computing frameworks and architectures.										
	CO3	Evaluate the effectiveness of different mobile computing frameworks.										
	CO4	Describe how mobile technology functions to enable other computing technologies.										
	CO5											

Class		Msc Computer Science-II	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-303			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Soft Computing		CO1	2	2	2	2	2	2	2	2
Semester No	III		CO2	1	2	1	1	1	2	2	2
Teacher Name	Sarika Kulkarni		CO3	1	1	2	1	1	2	2	2
Course Outcomes			CO4								
	CO1	Learn about soft computing techniques and their applications	CO5								
	CO2	Analyze various neural network architectures	Average	1.33	1.67	1.67	1.33	1.33	2.00	2.00	2.00
	CO3	Understand perceptrons and counter propagation networks.									
	CO4										
	CO5										

Class		Msc Computer Science-II	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-304			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Project		CO1	3	3	2	1	1	2	2	2
Semester No	III		CO2	3	2	2	1	1	2	2	2
Teacher Name	Trupti Deochake		CO3	3	3	2	0	1	2	2	2
Course Outcomes			CO4	3	3	3	3	2	2	2	2
	CO1	Time, cost estimation of project	CO5								
	CO2	how to develop real project	Average	3.00	2.75	2.25	1.25	1.25	2.00	2.00	2.00
	CO3	designing of software									
	CO4	coding and testing of software									
	CO5										

Class		Msc Computer Science-II	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-306			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Database and System Administrator		CO1	2	2	2	2	2	2	2	2
Semester No	III		CO2	1	1	1	1	1	2	2	2
Teacher Name	Prachi Walunjkar		CO3	2	2	2	2	1	2	2	1
Course Outcomes			CO4								
	CO1	Understand the basic concepts and the applications of database systems.	CO5								
	CO2	Master the basics of SQL and construct queries using SQL.	Average	1.67	1.67	1.67	1.67	1.33	2.00	2.00	1.67
	CO3	Understand the relational database design principles.									
	CO4										
	CO5										

Class		Msc Computer Science-II	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-308			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Business Intelligence		CO1	2	2	2	2	2	2	2	2
Semester No	III		CO2	2	1	2	1	2	2	2	2
Teacher Name	Rexita Mary		CO3	1	2	1	2	1	2	2	2
Course Outcomes			CO4	2	2	2	2	2	2	1	1
	CO1	To become familiar with the ethics and basics of Business Intelligence and Decision Support Systems	CO5								
	CO2	To define mathematical models, data mining and data preparation	Average	1.75	1.75	1.75	1.75	1.75	2.00	1.75	1.75
	CO3	To describe classification problems and clustering methods									
	CO4	To study marketing models, Logistic and production models and Data envelopment analysis									
	CO5										

Class		Msc Computer Science-II	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-401			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Industrial Training /Institutional project		CO1	3	2	3	3	3	2	2	2
Semester No	IV		CO2	2	2	2	2	2	2	2	2
Teacher Name	Trupti Deochake, Razak Sayyed		CO3	3	3	3	3	3	3	3	3
Course Outcomes			CO4								
	CO1	Understand the Organizational Structure of a company.	CO5								
	CO2	Develop work habits and attitudes necessary for job success (technical competence, professional attitude, organization skills etc.)	Average	2.67	2.33	2.67	2.67	2.67	2.33	2.33	2.33
	CO3	Develop written communication and technical report writing skills.									
	CO4										
	CO5										

CO-PO Mapping

		Course	PO1	PO2	PO3	PO4	PO5
FY	FY	1 CSUT111	2.60	2.20	2.40	2.60	2.00
		2 CSUT112	3.00	2.20	2.40	2.20	2.20
		3 CSUT113	3.00	2.00	2.33	1.67	1.67
		4 CSDT 114C	3.00	2.50	2.75	2.75	2.25
		5 CSDP114C	3.00	3.00	3.00	3.00	2.50
		6 CSUP115	3.00	3.00	3.00	2.50	2.50
		7 CSUT121	3.00	2.25	1.50	1.00	2.25
		8 CSUT122	3.00	2.75	2.50	2.50	2.50
		9 CSUT123	2.75	1.75	1.75	1.50	1.50
		10 CSDT124A	3.00	2.75	2.25	1.25	1.25
		11 CSDP124A	3.00	1.33	2.67	1.67	1.00
		12 CSUP125	1.80	2.00	1.60	1.60	1.80
SY	SY	1 CS-301	1.25	2.00	2.00	1.75	1.75
		2 CS-302	1.75	2.00	1.50	1.75	1.25
		3 CS-303	1.33	1.67	1.67	1.33	1.33
		4 CS-304	3.00	2.75	2.25	1.25	1.25
		5 CS-306	1.67	1.67	1.67	1.67	1.33
		6 CS-308	1.75	1.75	1.75	1.75	1.75
		7 CS-401	2.67	2.33	2.67	2.67	2.67

CO-PO ATTAINMENT

Percentage CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5
1.352	1.144	1.248	1.352	1.04
1.56	1.144	1.248	1.144	1.144
1.56	1.04	1.213333	0.866666667	0.866667
1.56	1.3	1.43	1.43	1.17
2.04	2.04	2.04	2.04	1.7
1.24	1.24	1.24	1.033333333	1.033333
0.92	0.69	0.46	0.306666667	0.69
0.6	0.55	0.5	0.5	0.5
0.55	0.35	0.35	0.3	0.3
0.6	0.55	0.45	0.25	0.25
0.6	0.266667	0.533333	0.333333333	0.2
0.648	0.72	0.576	0.576	0.648
0.65	1.04	1.04	0.91	0.91
0.91	1.04	0.78	0.91	0.65
0.693333	0.866667	0.866667	0.693333333	0.693333
3	2.75	2.25	1.25	1.25
1.133333	1.133333	1.133333	1.133333333	0.906667
0.91	0.91	0.91	0.91	0.91
2.666667	2.333333	2.666667	2.666666667	2.666667

PO1	PO2	PO3	PO4	PO5
52	52	52	52	52
52	52	52	52	52
52	52	52	52	52
52	52	52	52	52
68	68	68	68	68
41.33333	41.33333	41.33333	41.33333	41.33333
30.66667	30.66667	30.66667	30.66667	30.66667
20	20	20	20	20
20	20	20	20	20
20	20	20	20	20
20	20	20	20	20
36	36	36	36	36
52	52	52	52	52
52	52	52	52	52
52	52	52	52	52
100	100	100	100	100
68	68	68	68	68
52	52	52	52	52
100	100	100	100	100

