

Academic Year 2018-19

**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, maintenance, marketing and project management
PSO3	Students will be able to understand data communication concepts and its applications. Network architecture, transmission of data, OSI models, layers and protocols study equipped students with know-how on troubleshooting in

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Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs			
Subject Code	Subject Name	Semester No		Teacher Name	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CS-101	Principles of Programming Languages	I	Sayyed Kulsum	CO1	1	2	2	2	2	2	2	2
				CO2	2	1	1	1	2	2	2	1
				CO3	2	2	1	2	2	2	2	1
				CO4	2	2	2	2	2	2	2	1
				CO5	2	2	2	1	2	2	2	2
				Average	1.80	1.80	1.60	1.60	2.00	2.00	2.00	1.40
Course Outcomes												
	CO1	This course will prepare you to think about programming languages analytically: - Separate syntax from semantics - Compare programming language designs										
	CO2	Learn new languages more quickly										
	CO3	Use standard vocabulary when discussing languages										
	CO4	Understand basic language implementation techniques										
	CO5	Theory is covered by the textbook readings, lectures, and on the tests										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs			
Subject Code	Subject Name	Semester No		Teacher Name	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CS102	Advanced Networking	I	Trupti Deochake	CO1	1	2	2	2	2	2	2	2
				CO2	1	1	1	2	2	2	2	2
				CO3	2	2	2	2	2	2	2	2
				CO4	2	2	2	2	1	2	2	2
				CO5								
				Average	1.50	1.75	1.75	2.00	1.75	2.00	2.00	2.00
Course Outcomes												
	CO1	Analysis of Network congestion Mechanism										
	CO2	Implementation of multi-threaded Web Server/Web Proxy with Caching/Filtering features, Sliding Window protocol implementation,										
	CO3	Analyze TCP/IP variants, network Algorithm's, Protocols and their functionalities										
	CO4	Analyze the performance of various server implementations										
	CO5											

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs			
Subject Code				PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	
CS-103												

Subject Name	Distributed Database Concepts		CO1	2	2	1	2	1	2	2	2
Semester No	I		CO2	2	2	2	2	2	1	1	2
Teacher Name	Roopali Kulkarni		CO3	2	2	2	2	2	2	2	2
Course Outcomes			CO4								
	CO1	to understand the principles and foundations of distributed databases. This course addresses architecture, design issues, integrity control, query processing and optimization, transactions concurrency control & distributed transaction reliability.	CO5								
	CO2		Average	2.00	2.00	1.67	2.00	1.67	1.67	1.67	2.00
	CO3										
	CO4										
	CO5										

Class	Msc Computer Science-I		Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-104			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Design and Analysis of Algorithms		CO1	2	2	2	2	2	1	2	2
Semester No	I		CO2	2	2	2	2	2	3	2	2
Teacher Name	Rahul Ghodke		CO3	2	2	2	2	2	2	2	2
Course Outcomes			CO4	2	2	2	2	2	2	3	3
	CO1	Basic Algorithm Analysis techniques and understand the use o asymptotic notation	CO5	2	2	2	2	2	2	2	2
	CO2	Understand different design strategies	Average	2.00	2.00	2.00	2.00	2.00	2.00	2.20	2.20
	CO3	Understand the use of data structures in improving algorithm performance									
	CO4	Understand classical problem and solutions									
	CO5	Understand classification o problems									

Class	Msc Computer Science-I		Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-105			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Network Programming		CO1	2	2	1	1	1	2	2	2
Semester No	I		CO2	2	2	2	2	1	2	2	2
Teacher Name	Rexcita Mary		CO3	2	2	2	2	2	2	2	2
Course Outcomes			CO4								
	CO1	understand the key protocols which support the Internet.	CO5								
	CO2	be familiar with several common programming interfaces for network communication.	Average	2.00	2.00	1.67	1.67	1.33	2.00	2.00	2.00
	CO3	demonstrate advanced knowledge of programming for network communications.									
	CO4										
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-201			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Digital Image Processing		CO1	2	2	2	2	2	2	2	2
Semester No	II		CO2	2	2	2	2	2	2	2	2
Teacher Name	Prachi Walunjkar		CO3	1	1	2	2	2	2	2	3
Course Outcomes			CO4	2	2	1	1	2	2	2	2
	CO1	Review the fundamental concepts of a digital image processing	CO5								
	CO2	Analyze images in the frequency domain using various transforms.	Average	1.75	1.75	1.75	1.75	2.00	2.00	2.00	2.25
	CO3	Evaluate the techniques for image enhancement and image restoration.									
	CO4	Categorize various compression techniques.									
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-202			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Advanced Operating Systems		CO1	2	1	2	2	2	2	2	2
Semester No	II		CO2	1	1	1	1	2	2	2	2
Teacher Name	Trupti Deochake		CO3	2	2	2	2	2	2	3	2
Course Outcomes			CO4	2	2	2	2	1	3	3	3
	CO1	This course teaches Advanced Operating Systems Concepts using Unix/Linux and Windows as representative examples	CO5								
	CO2	This course describes the programming interface to the Unix/Linux system - the system call interface.	Average	1.75	1.50	1.75	1.75	1.75	2.25	2.50	2.25
	CO3	This course provides an understanding of the functions of Operating Systems. I									
	CO4	It also provides provide an insight into functional modules of Operating Systems									
	CO5										

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs		
Subject Code	CS-203			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
Subject Name	Data Mining and Data Warehousing		CO1	2	2	2	2	2	2	2	2
Semester No	II		CO2	2	2	1	1	1	2	2	2
Teacher Name	Sarika Kulkarni		CO3	2	2	2	2	2	2	2	2
Course Outcomes			CO4								
	CO1	To extract knowledge from data repository for data analysis	CO5								
	CO2	to understand frequent pattern	Average	2.00	2.00	1.67	1.67	1.67	2.00	2.00	2.00
	CO3	to understand classification and prediction.									

	CO4	
	CO5	

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs			
Subject Code	Subject Name	Semester No		Teacher Name	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CS-204	Project	II	Trupti Deochake	CO1	3	3	2	1	1	2	3	3
				CO2	3	2	2	1	1	1	1	2
				CO3	3	3	2	0	1	2	3	3
				CO4	3	3	3	3	2	2	2	2
				CO5								
				Average	3.00	2.75	2.25	1.25	1.25	1.75	2.25	2.50
Course Outcomes												
	CO1	Time, cost estimation of project										
	CO2	how to develop real project										
	CO3	designing of software										
	CO4	coding and testing of software										
	CO5											

Class		Msc Computer Science-I	Course Outcomes	Program Outcomes					PSOs			
Subject Code	Subject Name	Semester No		Teacher Name	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CS-205	Programming With DOT NET	II	Shital Chaudhari	CO1	3	2	2	3	3	2	2	3
				CO2	3	2	2	2	2	2	2	2
				CO3	3	3	3	2	3	3	2	2
				CO4								
				CO5								
				Average	3.00	2.33	2.33	2.33	2.67	2.33	2.00	2.33
Course Outcomes												
	CO1	Develop working knowledge of C# programming constructs and the .NET										
	CO2	Build and debug well-formed Web Forms with ASP.										
	CO3	Perform form validation with validation controls.										
	CO4											
	CO5											

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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 Maary		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 CS-101	1.80	1.80	1.60	1.60	2.00
		2 CS102	1.50	1.75	1.75	2.00	1.75
		3 CS-103	2.00	2.00	1.67	2.00	1.67
		4 CS-104	2.00	2.00	2.00	2.00	2.00
		5 CS-105	2.00	2.00	1.67	1.67	1.33
		6 CS-201	1.75	1.75	1.75	1.75	2.00
		7 CS-202	1.75	1.50	1.75	1.75	1.75
		8 CS-203	2.00	2.00	1.67	1.67	1.67
		9 CS-204	3.00	2.75	2.25	1.25	1.25
		10 CS-205	3.00	2.33	2.33	2.33	2.67
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
0.36	0.36	0.32	0.32	0.4
0.94	1.096667	1.096667	1.253333333	1.096667
0.826667	0.826667	0.688889	0.826666667	0.688889
1.04	1.04	1.04	1.04	1.04
0.4	0.4	0.333333	0.333333333	0.266667
0.536667	0.536667	0.536667	0.536666667	0.613333
0.91	0.78	0.91	0.91	0.91
1.253333	1.253333	1.044444	1.044444444	1.044444
3	2.75	2.25	1.25	1.25
1.56	1.213333	1.213333	1.213333333	1.386667
0.583333	0.933333	0.933333	0.816666667	0.816667
0.723333	0.826667	0.62	0.723333333	0.516667
0.408889	0.511111	0.511111	0.408888889	0.408889
3	2.75	2.25	1.25	1.25
0.688889	0.688889	0.688889	0.688888889	0.551111
0.35	0.35	0.35	0.35	0.35
2.666667	2.333333	2.666667	2.666666667	2.666667

PO1	PO2	PO3	PO4	PO5
20	20	20	20	20
62.66667	62.66667	62.66667	62.66667	62.66667
41.33333	41.33333	41.33333	41.33333	41.33333
52	52	52	52	52
20	20	20	20	20
30.66667	30.66667	30.66667	30.66667	30.66667
52	52	52	52	52
62.66667	62.66667	62.66667	62.66667	62.66667
100	100	100	100	100
52	52	52	52	52
46.66667	46.66667	46.66667	46.66667	46.66667
41.33333	41.33333	41.33333	41.33333	41.33333
30.66667	30.66667	30.66667	30.66667	30.66667
100	100	100	100	100
41.33333	41.33333	41.33333	41.33333	41.33333
20	20	20	20	20
100	100	100	100	100

CO-PSO MAPPING

	Course	PSO1	PSO2	PSO3
1	CS-101	2.00	2.00	1.40
2	CS102	2.00	2.00	2.00
3	CS-103	1.67	1.67	2.00
4	CS-104	2.00	2.20	2.20
5	CS-105	2.00	2.00	2.00
6	CS-201	2.00	2.00	2.25
7	CS-202	2.25	2.50	2.25
8	CS-203	2.00	2.00	2.00
9	CS-204	1.75	2.25	2.50
10	CS-205	2.33	2.00	2.33
1	CS-301	2.00	1.75	1.75
2	CS-302	2.00	2.00	2.00
3	CS-303	2.00	2.00	2.00
4	CS-304	2.00	2.00	2.00
5	CS-306	2.00	2.00	1.67
6	CS-308	2.00	1.75	1.75
7	CS-401	2.33	2.33	2.33

CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
	CS-101	0.4	0.4	0.28
	CS102	1.253333	1.253333	1.253333
	CS-103	0.688889	0.688889	0.826667
	CS-104	1.04	1.144	1.144
	CS-105	0.4	0.4	0.4
	CS-201	0.613333	0.613333	0.69
	CS-202	1.17	1.3	1.17
	CS-203	1.253333	1.253333	1.253333
	CS-204	1.75	2.25	2.5
	CS-205	1.213333	1.04	1.213333
	CS-301	0.933333	0.816667	0.816667
	CS-302	0.826667	0.826667	0.826667
	CS-303	0.613333	0.613333	0.613333
	CS-304	2	2	2
	CS-306	0.826667	0.826667	0.688889
	CS-308	0.4	0.35	0.35
	CS-401	2.333333	2.333333	2.333333

Percentage CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
	CS-101	20	20	20
	CS102	62.66667	62.66667	62.66667
	CS-103	41.33333	41.33333	41.33333
	CS-104	52	52	52
	CS-105	20	20	20
	CS-201	30.66667	30.66667	30.66667
	CS-202	52	52	52
	CS-203	62.66667	62.66667	62.66667
	CS-204	100	100	100
	CS-205	52	52	52
	CS-301	46.66667	46.66667	46.66667
	CS-302	41.33333	41.33333	41.33333
	CS-303	30.66667	30.66667	30.66667
	CS-304	100	100	100
	CS-306	41.33333	41.33333	41.33333
	CS-308	20	20	20
	CS-401	100	100	100

FY

SY