

# Department of Computer Application

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**Shri Ram College, Muzaffarnagar**

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**Course Outcomes, Programme Outcomes, Program  
Specific Outcomes  
of  
M.Sc- Computer Science**



Department Of Computer Application	After successful of two years Post Graduate program in M.Sc.-CS student attains
PROGRAM OUTCOMES	<p><b>PO 1 Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems..</p> <p><b>PO 2 Problem analysis:</b> Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.</p> <p><b>PO 3 Design/development of solutions:</b> Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.</p> <p><b>PO 4 Conduct investigations of complex problems:</b> Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.</p> <p><b>PO 5 Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.</p> <p><b>PO 6 The engineer and society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.</p> <p><b>PO 7 Environment and sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.</p> <p><b>PO 8 Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</p> <p><b>PO 9 Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</p> <p><b>PO 10 Communication:</b> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.</p> <p><b>PO 11 Project management and finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</p> <p><b>PO 12 Life-long learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.</p>



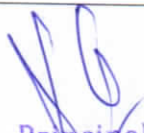
<b>PROGRAM SPECIFICS OUTCOME</b>	<p><b>PSO1-</b> Mastery of Computer Science in the following core knowledge areas-</p> <ul style="list-style-type: none"><li>• Data Structures and Programming Languages</li><li>• Databases, Fuzzy and Artificial intelligence.</li><li>• Computer Hardware and Architecture</li></ul> <p><b>PSO2-</b> Problem-solving skills and the knowledge of computer science to solve real world problems.</p> <p><b>PSO3-</b>Inculcated various software development practices.</p> <p><b>PSO4-</b>Skills in latest technologies in the field of computer science and applications.</p>
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Course Outcomes of M.Sc. Computer Science Semester-I	
Course	Outcomes
MCS101 Foundation Course in Computers I	<p>CO1- Understand Number System &amp; their Conversions.</p> <p>CO2- To learn concepts of computer organization.</p> <p>CO3-To familiarize with assembly language programming.</p>
MCS 102 Programming in C & Data Structure	<p>CO-1Analyse a given problem and develop an algorithm to solve the problem.</p> <p>CO2-Design, develop and test programs written in C.</p> <p>CO3-Understands the basic data structure such as array, stack, linked list and queue.</p> <p>CO4- Implements algorithm for solving problem like sorting searching , insertion and deletion of data</p>
MCS103 Discrete Mathematical Structures	<p>CO1- Perform operation on various discrete structures such as sets, function and relation.</p> <p>CO2- Ability to solve problem using counting technique, recursion and generation function.</p> <p>CO3-Use of graph and trees as tools to visualize and simplified problem.</p>
MCS104 Computer Oriented Statistical Techniques	<p>CO1- To Learn techniques to calculate the measures of central tendency and different measures of dispersion.</p> <p>CO2- To gain insight into consequences of plan by probability techniques and processing samples using sampling techniques.</p> <p>CO3-To measure experimental result based on hypothesis using chi square techniques.</p> <p>CO4- To learn techniques to correlate the relationship between various variables</p>
MCS105 Computer Lab I	<p>CO1- Read, understand and trace the execution of programs written in C language.</p> <p>CO2- Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.</p> <p>CO3- Write programs that perform operations using linked list, stack, and binary search tree, searching and sorting.</p> <p>CO4-To write diversified solutions using C language.</p>

  
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<b>Course Outcomes of M.Sc. Computer Science Semester-II</b>	
<b>Course</b>	<b>Outcomes</b>
<b>MCS201</b> Foundation Course in Computers II	<p><b>CO1</b>-Understanding the design of operating system.</p> <p><b>CO2</b>- To study the process management and scheduling.</p> <p><b>CO3</b>-To understand various issues in Inter Process Communication (IPC) and the role of OS in IPC.</p> <p><b>CO4</b>-To understand the concepts and implementation Memory management policies and virtual memory.</p> <p><b>CO5</b>- To understand the working of an OS as a resource manager, file system manager, process manager, memory manager and I/O manager and methods used to implement the different parts of OS.</p>
<b>MCS202</b> Design & Analysis of Algorithms	<p><b>CO 1</b>-Understanding, explain, model and analyse a given problem as an algorithm.</p> <p><b>CO2</b>-Investigate whether the algorithm found is the most efficient.</p> <p><b>CO3</b>-Formulate the time orders analysis for an algorithm.</p> <p><b>CO4</b>-Learning various algorithm design technique such as divide and conquer, dynamic programming, branch and bound, greedy algorithm.</p> <p><b>CO5</b>-Understanding graph algorithms and applying graphs to model engineering problem.</p>
<b>MCS203</b> File Structure & Database Management System	<p><b>CO1</b>-To study the physical and logical database designs, relational, hierarchical, and network models, ER Models.</p> <p><b>CO2</b>-To understand the concept of Relational Database Model like Keys, Integrity Rules, and Normalization.</p> <p><b>CO3</b>-Recall Relational Algebra concepts, and use it to translate queries to Relational Algebra.</p> <p><b>CO4</b>-To develop an understanding of serializability, concurrency control in transaction management along with Database Recovery Management.</p> <p><b>CO5</b>-To understand the application of different concepts in SQL and PL/SQL like, aggregate functions, joins, sub queries, cursors, procedures and functions, packages and triggers etc.</p>

  
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<b>MCS204</b> Computer Oriented Numerical Analysis	<b>CO1-</b> Become familiar with calculation and interpretation of error in numerical methods. <b>CO2-</b> Solve system of linear equations. <b>CO3-</b> Become familiar with interpolation and approximation and function. <b>CO4-</b> Apply Numerical Integration. <b>CO5-</b> Solve Differential Equations.
<b>MCS205</b> Computer Lab II	<b>CO1-</b> Populate and query a database using SQL DML/DDDL commands. <b>CO2-</b> Declare and enforce integrity constraints on a database using RDBMS. <b>CO3-</b> Programming PL/SQL including stored procedures, stored functions, cursors, packages.


<b>Course Outcomes of M.Sc. Computer Science Semester-III</b>	
<b>Course</b>	<b>Outcomes</b>
<b>MCS301</b> Interactive Computer Graphics	<b>CO1-</b> Become familiar with various graphical input and output devices. <b>CO2-</b> Get knowledge of various algorithms used to draw geometrical figure. <b>CO3-</b> Get knowledge of various transformations applied on geometrical figure. <b>CO4-</b> Get familiar with hidden surface and line.
<b>MCS 302</b> Computer Networks & internet	<b>CO1-</b> Understanding of layered communication in network. OSI network model and TCP/IP Model. <b>CO2-</b> Understanding data communication and various transmission media. <b>CO3-</b> Understand different types of switching, error detection and correction. <b>CO4-</b> Understanding of data link control and media access control <b>CO5-</b> Understanding various responsibilities of network layer, Routing protocols. <b>CO6-</b> Understanding responsibilities of transport layer protocol.

  
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<p><b>MCS303</b> Computer Oriented Optimization Methods</p>	<p><b>CO1-</b> Optimization problems defining, understanding and classification.</p> <p><b>CO2-</b> Formulating Linear Programming problem and similar such problems into appropriate forms and problem solving.</p> <p><b>CO3-</b> Non Linear Programming problems and Game Theory.</p> <p><b>CO4-</b> Understanding Inventory problem solving.</p> <p><b>CO5-</b> Understanding travelling sales person and job scheduling problem.</p>
<p><b>MCS304</b> Object Oriented System</p>	<p><b>CO1-</b>To understand object oriented programming concepts.</p> <p><b>CO2-</b>To understand the difference between object oriented programming and procedural programming.</p> <p><b>CO3-</b>To understand program using C++ features such as Class, Objects, operator overloading, dynamic memory allocation, inheritance and polymorphism.</p> <p><b>CO4-</b>To understand file I/O operations, virtual function.</p> <p><b>CO5-</b> Understanding Object Oriented Modelling and Design Methodologies.</p>
<p><b>MCS305</b> Computer Lab III</p>	<p><b>CO1-</b> Draw Geometric primitives.</p> <p><b>CO2-</b> Execute scan line polygon filling.</p> <p><b>CO3-</b> Implement basic transformations on objects.</p> <p><b>CO4-</b> Implement Clipping algorithm on lines.</p>
<p><b>Course Outcomes of M.Sc. Computer Science Semester-IV</b></p>	
<p><b>MCS401</b> Fuzzy Sets &amp; Applications</p>	<p><b>CO1-</b> Understand basic knowledge of fuzzy sets and fuzzy logic.</p> <p><b>CO2-</b> Apply basic fuzzy inference and approximate reasoning.</p> <p><b>CO3-</b> Apply fuzzy logic and reasoning to handle uncertainty and solve engineering problems.</p> <p><b>CO4-</b>To understand fuzzy application such as fuzzy controller, pattern reorganisation, fuzzy databases and fuzzy decision making.</p> <p><b>CO5-</b> Learning Animation design and multimedia.</p>

  
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<b>MCS402</b> Cryptology & Secure Systems	<b>CO1-</b> To become familiar with cryptography concept. <b>CO2-</b> Describe network security services and mechanisms. <b>CO3-</b> Understanding Symmetrical and Asymmetrical Algorithms. <b>CO4-</b> Familiar with Network security technology.
<b>MCS403</b> Artificial Intelligence & Neural Networks	<b>CO1-</b> Introduction to Artificial intelligence and its applications. <b>CO2-</b> Understand concept of knowledge representation and predicate logic. <b>CO3-</b> Understand state space and its searching strategies. <b>CO4-</b> Introduction to LISP. <b>CO5-</b> Basic concept and model of neural network, Supervised learning and unsupervised learning and back propagation.
<b>MCS404</b> Java Programming	<b>CO1-</b> Introduction to Core Java: JVM, identifiers, Keywords, data types etc. <b>CO2-</b> Understanding of different control flow statements: If-else, Loops Switch-case, Applets and Introduction to the concept of class. <b>CO3-</b> Understanding of deriving properties of one class into other using different types of inheritance. <b>CO4-</b> Understanding of Enumeration, Arrays, Multithreading, Exceptions Handling. <b>CO5-</b> Describes designing of GUI and AWT components
<b>MCS405</b> Computer Lab IV	<b>CO1 -</b> Write, compile, and execute Java programs that may include basic data types and control flow constructs. <b>CO2-</b> Write, compile and execute Java programs using object oriented class structures with parameters, constructors, and utility and calculations methods, including inheritance, test classes and exception handling. <b>CO3-</b> Write, compile, execute Java programs that include GUIs and event driven programming.

  
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# Department of Computer Application

## Shri Ram College

### Methodology to Evaluate Course & Program Outcomes

Direct Assessment (External + Internal)	70%
Indirect Assessment (AT +Assignment+ TA)	30%

<b>Direct Assessment Benchmark</b>		<b>40%</b>			
Level 1	60%	60% Students secure more than 40% marks	Points	1	
Level 2	70%	70% Students secure more than 40% marks	Points	2	
Level 3	80%	80% Students secure more than 40% marks	Points	3	

<b>Indirect Assessment Benchmark</b>		<b>40%</b>			
Level 1	60%	60% Students secure more than 40% marks	Points	1	
Level 2	70%	70% Students secure more than 40% marks	Points	2	
Level 3	80%	80% Students secure more than 40% marks	Points	3	



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(HOD, CA)

### **Program Outcomes (POs) [For Engg. and Technical Courses]**

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

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

**PO 3 Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO 4 Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

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

**PO 6 The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

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

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



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

**PO 10 Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO 11 Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO 12 Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

### **Program Outcomes (POs) [For Traditional Courses]**

**PO1.Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

**PO2.Effective Communication:** Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

**PO3. Social Interaction:** Elicit views of others, mediate disagreements and help reach conclusions in group settings.

**PO4. Effective Citizenship:** Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

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(HOD, CA)



PO5. **Ethics:** Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6. **Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.

PO7. **Self-directed and Life-long Learning:** Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

### CO & PO Mapping

(Three Levels: 3-Strongly Related, 2-Moderately Related, 1-Slightly Related)

Subject Name: Programming in 'C' & Data Structure

Code: MCS-102

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(HOD, UG)

	Attainment	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
COs - 1	3	3	3	3	3	2	2	0	1	3	3	3	3
COs - 2		3	2	2	3	3	2	0	1	2	2	3	3
COs - 3		3	3	3	2	3	1	0	0	2	2	2	3
COs - 4		2	3	2	3	2	2	0	1	2	3	3	3
Average		2.75	2.75	2.5	2.75	2.5	1.75	0	0.75	2.25	2.5	2.75	3
Average Attainment		2.75	2.75	2.5	2.75	2.5	1.75	0	0.75	2.25	2.5	2.75	3



**Assessing Total Attainment for given Subject:**

**Direct Assessment (70%)**

University Exams & Internal Exams (70%): 70% of (1 or 2 or 3) eg. 70% of 3 is 2.1

**Indirect Assessment (30%)**

Attendance + Assignment/Presentation+ TA (30%): 30% of (1 or 2 or 3) eg. 30% of 3 is 0.9

Therefore Total Attainment for Subject Name (Sub code :) is  $(2.1+0.9) = 3.0$

**Assessing PO attainment through CO's:**

Formula for Computation: Total Attainment for Subject X AVG of POi

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3

eg:  $3 \times 1.75 / 3 = 1.75$



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# CO-PO Mapping

Subject Name: Foundation Course in Computers I

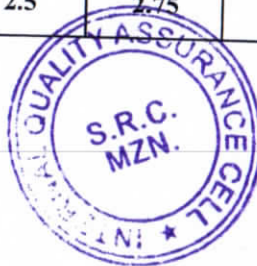
Code: MCS 101

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	3	3	3	2	2	3	0	1	2	3	0	3
COs - 2		3	2	3	2	1	2	0	1	1	3	1	3
COs - 3		2	3	2	2	2	2	0	1	2	3	0	3
Average		2.67	2.67	2.67	2.00	1.67	2.33	0.00	1.00	1.67	3.00	0.33	3.00
Average Attainment		2.67	2.67	2.67	2.00	1.67	2.33	0.00	1.00	1.67	3.00	0.33	3.00

Subject Name: Programming in C & Data Structure

Code: MCS 102

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	3	3	3	3	2	2	0	1	3	3	3	3
COs - 2		3	2	2	3	3	2	0	1	2	2	3	3
COs - 3		3	3	3	2	3	1	0	0	2	2	2	3
COs - 4		2	3	2	3	2	2	0	1	2	3	3	3
Average		2.75	2.75	2.5	2.75	2.5	1.75	0	0.75	2.25	2.5	2.75	3
Average Attainment		2.75	2.75	2.5	2.75	2.5	1.75	0	0.75	2.25	2.5	2.75	3



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Subject Name: Discrete Mathematical Structures

Code: MCS 103

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	3	2	3	3	2	0	0	1	1	3	2	3
COs - 2		3	3	2	3	3	1	0	0	0	3	3	3
COs - 3		3	2	3	3	2	0	0	0	0	3	3	3
Average		3.00	2.33	2.67	3.00	2.33	0.33	0.00	0.33	0.33	3.00	2.67	3.00
Average Attainment		3.00	2.33	2.67	3.00	2.33	0.33	0.00	0.33	0.33	3.00	2.67	3.00

Subject Name: Computer Oriented Statistical Techniques

Code: MCS 104

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	2	3	2	2	3	1	0	0	2	2	2	3
COs - 2		2	2	3	3	3	2	0	0	2	3	2	3
COs - 3		2	3	3	2	3	1	0	0	3	2	3	3
COs - 4		2	2	3	3	2	2	0	0	2	3	3	3
Average		2	2.5	2.75	2.5	2.75	1.5	0	0	2.25	2.5	2.5	3
Average Attainment		2	2.5	2.75	2.5	2.75	1.5	0	0	2.25	2.5	2.5	3



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Subject Name: Foundation Course in Computers - II

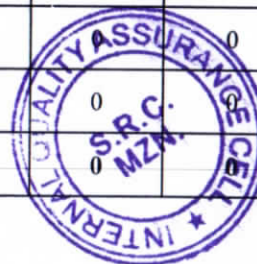
Code: MCS 201

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	2	2	2	3	3	2	0	0	2	2	3	3
COs - 2		2	3	3	2	2	2	0	0	3	1	2	3
COs - 3		3	2	2	2	3	1	0	0	2	2	3	2
COs - 4		2	3	1	3	3	2	0	0	3	3	2	3
COs - 5		3	3	2	3	3	3	0	0	3	3	3	3
Average		2.4	2.6	2	2.6	2.8	2	0	0	2.6	2.2	2.6	2.8
Average Attainment		2.4	2.6	2	2.6	2.8	2	0	0	2.6	2.2	2.6	2.8

Subject Name: Design and Analysis of Algorithms

Code: MCS 202

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	3	3	3	3	2	1	0	0	3	2	2	3
COs - 2		2	2	2	3	2	2	0	0	2	2	2	3
COs - 3		3	3	2	3	2	2	0	0	2	3	3	2
COs - 4		2	2	2	2	2	2	0	0	2	2	2	3
COs - 5		3	3	3	3	3	2	0	0	2	3	3	3
Average		2.6	2.6	2.4	2.8	2.2	1.8	0	0	2.2	2.4	2.4	2.8
Average Attainment		2.6	2.6	2.4	2.8	2.2	1.8	0	0	2.2	2.4	2.4	2.8



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Subject Name: File Structure and Database Management System

Code: MCS 203

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	2	2	3	2	3	2	0	0	3	2	2	3
COs - 2		3	2	2	2	3	2	0	0	2	3	3	3
COs - 3		2	2	3	1	2	2	0	0	3	3	2	3
COs - 4		3	3	2	3	3	3	0	0	2	3	2	2
COs - 5		3	2	2	2	2	1	0	0	2	2	3	3
Average		2.60	2.20	2.40	2.00	2.60	2.00	0.00	0.00	2.40	2.60	2.40	2.80
Average Attainment		2.60	2.20	2.40	2.00	2.60	2.00	0.00	0.00	2.40	2.60	2.40	2.80

Subject Name: Computer Oriented Numerical Analysis

Code: MCS 204

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	2	3	2	3	3	2	0	0	1	3	3	2
COs - 2		3	2	3	3	2	2	0	0	1	2	2	3
COs - 3		2	3	2	2	2	1	0	0	1	2	1	2
COs - 4		2	2	2	2	2	2	0	0	2	2	3	3
COs - 5		3	2	2	2	1	1	0	2	2	2	2	2
Average		2.4	2.4	2.2	2.4	2	1.6	0	1.4	2.2	2.2	2.4	
Average Attainment		2.4	2.4	2.2	2.4	2	1.6	0	1.4	2.2	2.2	2.4	



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 HOD, IIT

Subject Name: Interactive Computer Graphics

Code: MCS 301

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	2	3	3	2	2	2	0	0	2	3	3	3
COs - 2		2	2	3	2	2	2	0	0	2	2	2	3
COs - 3		3	2	3	3	1	2	0	0	2	2	1	3
COs - 4		3	2	2	3	2	2	0	0	1	3	2	3
Average		2.5	2.25	2.75	2.5	1.75	2	0	0	1.75	2.5	2	3
Average Attainment		2.5	2.25	2.75	2.5	1.75	2	0	0	1.75	2.5	2	3

Subject Name: Computer Network and Internet

Code: MCS 302

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	3	2	3	3	2	2	0	0	2	3	2	3
COs - 2		3	3	2	2	1	1	0	0	3	2	3	3
COs - 3		2	3	3	2	2	3	0	0	2	2	3	2
COs - 4		2	3	2	3	2	2	0	0	2	3	2	3
COs - 5		3	3	3	2	2	3	0	0	1	2	2	3
COs - 6		2	2	2	1	1	2	0	0	2	2	1	3
Average		2.50	2.67	2.50	2.17	1.67	2.17	0.00	0.00	2.00	2.33	2.17	2.83
Average Attainment		2.50	2.67	2.50	2.17	1.67	2.17	0.00	0.00	2.00	2.33	2.17	2.83



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CHOD, CA

Subject Name: Computer Oriented Optimization Methods

Code: MCS 303

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	3	2	3	2	2	2	0	0	2	3	2	3
COs - 2		2	3	2	3	2	1	0	0	3	2	3	3
COs - 3		1	2	2	2	2	2	0	0	2	2	3	3
COs - 4		3	2	3	3	2	1	0	0	2	3	2	3
COs - 5		2	3	2	3	1	2	0	0	2	1	2	3
Average		2.2	2.4	2.4	2.6	1.8	1.6	0	0	2.2	2.2	2.4	3
Average Attainment		2.2	2.4	2.4	2.6	1.8	1.6	0	0	2.2	2.2	2.4	3

Subject Name: Object-Oriented System

Code: MCS 304

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	2	3	2	3	3	1	0	0	2	2	2	3
COs - 2		3	2	3	2	2	2	0	0	2	3	3	3
COs - 3		2	2	3	2	3	1	0	0	2	3	2	3
COs - 4		2	2	2	2	3	2	0	0	1	2	2	3
COs - 5		2	1	2	2	2	2	0	0	3	1	3	3
Average		2.2	2	2.4	2.2	2.6	1.6	0	0	2	2.2	2.4	3
Average Attainment		2.2	2	2.4	2.2	2.6	1.6	0	0	2	2.2	2.4	3



*Signature*  
(MCS 304)

Subject Name: Fuzzy Sets & Applications

Code: MCS 401

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	3	3	2	3	2	2	0	0	2	2	2	3
COs - 2		2	2	3	2	3	1	0	0	3	3	3	3
COs - 3		3	3	3	2	3	2	0	0	2	3	2	3
COs - 4		3	3	2	3	3	1	0	0	2	2	1	3
COs - 5		2	3	3	1	2	3	0	0	3	3	2	3
Average		2.6	2.8	2.6	2.2	2.6	1.8	0	0	2.4	2.6	2	3
Average Attainment		2.6	2.8	2.6	2.2	2.6	1.8	0	0	2.4	2.6	2	3

Subject Name: Cryptology and Secure System

Code: MCS 402

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	2	2	2	3	3	2	0	0	3	2	1	3
COs - 2		3	3	3	2	1	3	0	0	2	2	2	3
COs - 3		3	3	2	3	2	2	0	0	2	1	3	3
COs - 4		2	3	2	2	2	2	0	0	3	1	2	3
Average		2.5	2.75	2.25	2.5	2	2.25	0	0	2.5	1.5	2	3
Average Attainment		2.5	2.75	2.25	2.5	2	2.25	0	0	2.5	1.5	2	3



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(UCOD, CA)

Subject Name: Artificial Intelligence and Neural Networks

Code: MCS 403

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	3	2	3	2	2	2	0	0	3	3	2	3
COs - 2		3	2	3	3	2	2	0	0	2	3	3	2
COs - 3		3	2	2	3	2	1	0	0	2	2	2	3
COs - 4		2	2	2	2	3	1	0	0	2	3	3	3
COs - 5		3	3	2	3	3	3	0	0	2	2	2	3
Average		2.8	2.2	2.4	2.6	2.4	1.8	0	0	2.2	2.6	2.4	2.8
Average Attainment		2.8	2.2	2.4	2.6	2.4	1.8	0	0	2.2	2.6	2.4	2.8

Subject Name: Java Programming

Code: MCS 404

	Attainment	POs - 1	POs - 2	POs - 3	POs - 4	POs - 5	POs - 6	POs - 7	POs - 8	POs - 9	POs - 10	POs - 11	POs - 12
COs - 1	3	2	3	2	2	3	2	0	0	3	2	3	3
COs - 2		3	2	3	2	2	2	0	0	2	2	2	2
COs - 3		2	2	3	1	2	1	0	0	2	2	2	3
COs - 4		2	3	2	3	3	2	0	0	3	3	3	3
COs - 5		2	2	3	2	2	2	0	0	2	2	2	3
Average		2.2	2.4	2.6	2	2.4	1.8	0	0	2.4	2.2	2.4	2.8
Average Attainment		2.2	2.4	2.6	2	2.4	1.8	0	0	2.4	2.2	2.4	2.8



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R.H.D.D. CA

SHRI RAM COLLEGE, MUZAFFARNAGAR

Name of Department : Computer Application  
Name of Programme : MSc(CS)

Session: 2018-19

Name of Course/ Subject : Foundation Course in Computer I (MCS-101)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional Test			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	27	48	75	52.5	18	18	8	44	13.2	65.7	77.29
2	R180855251002	RAJAT KUMAR BHATI	24	46	70	49	17	17	7	41	12.3	61.3	72.12
3	R180855251003	ROBIN RAGHUVANSHI	24	44	68	47.6	16	16	7	39	11.7	59.3	69.76

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma fx = f1*x1 + f2*x2 + f3*x3$	$\Sigma f = f1 + f2 + f3$	$m = \Sigma fx / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
3	3	9	0	2	0	0	1	0	9	3	3.00	100.00

3 students or  $3/3 = 100\%$  students secured more than 40% marks in Direct Assessment so weightage is 3.

70% of 3 = 2.1

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

30% of 3 = 0.9

Therefore Total Attainment for Foundation Course in Computer I (MCS-101) is  $(2.1 + 0.9) = 3$



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HOD/CA

SHRI RAM COLLEGE, MUZAFFARNAGAR

Name of Department : Computer Application

Name of Programme : MSc(CS)

Session: 2018-19

Name of Course/ Subject : Programming in "C" & Data Structure I (MCS-102)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	29	49	78	54.6	19	19	9	47	14.1	68.7	80.82
2	R180855251002	RAJAT KUMAR BHATI	25	46	71	49.7	17	17	7	41	12.3	62	72.94
3	R180855251003	ROBIN RAGHUVANSHI	24	43	67	46.9	16	16	7	39	11.7	58.6	68.94

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1& x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2& x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3& x3)	$\Sigma f_x = f1*x1+f2*x2+f3*x3$	$\Sigma f = f1+f2+f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
3	3	9	0	2	0	0	1	0	9	3	3.00	100.00

3 students or  $3/3 = 100\%$  students secured more than 40% marks in Direct Assessment so weightage is 3.

70% of 3 = 2.1

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

30% of 3 = 0.9

Therefore Total Attainment for Programming in "C" & Data Structure (MCS-102) is  $(2.1 + 0.9) = 3$



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(HOOD, CA)

SHRI RAM COLLEGE, MUZAFFARNAGAR

Session: 2018-19

Name of Department : Computer Application

Name of Programme : MSc(CS)

Name of Course/ Subject : Discrete Mathematical Structures (MCS-103)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E = (F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	32	49	81	56.7	19	19	9	47	14.1	70.8	83.29
2	R180855251002	RAJAT KUMAR BHATI	21	48	69	48.3	18	18	8	44	13.2	61.5	72.35
3	R180855251003	ROBIN RAGHUVANSHI	15	44	59	41.3	16	16	7	39	11.7	53	62.35

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1& x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2& x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3& x3)	$\Sigma f_x = f1*x1+f2*x2+f3*x3$	$\Sigma f = f1+f2+f3$	$n = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
3	3	9	0	2	0	0	1	0	9	3	3.00	100.00

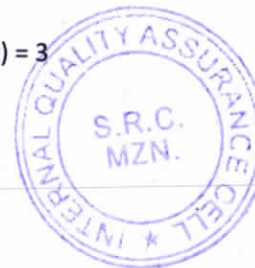
3 students or  $3/3 = 100\%$  students secured more than 40% marks in **Direct Assessment** so weightage is 3.

**70% of 3 = 2.1**

100% of students secured more than 40% marks in Indirect Assesment so weightage is 3

**30% of 3 = 0.9**

Therefore Total Attainment for **Discrete Mathematical Structures (MCS-103)** is  $(2.1 + 0.9) = 3$



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SHRI RAM COLLEGE, MUZAFFARNAGAR

Name of Department : Computer Application

Session: 2018-19

Name of Programme : MSc(CS)

Name of Course/ Subject : Computer Oriented Statistical Techniques (MCS-104)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E = (F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional Test			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	27	49	76	53.2	19	19	9	47	14.1	67.3	79.18
2	R180855251002	RAJAT KUMAR BHATI	17	46	63	44.1	17	17	7	41	12.3	56.4	66.35
3	R180855251003	ROBIN RAGHUVANSHI	9	45	54	37.8	17	17	7	41	12.3	50.1	58.94

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma fx = f1*x1+f2*x2+f3*x3$	$\Sigma f = f1+f2+f3$	$m = \Sigma fx / \Sigma f$	Attainment of Course (%) = $m*100/3$
3	3	9	0	2	0	0	1	0	9	3	3.00	100.00

3 students or  $3/3 = 100\%$  students secured more than 40% marks in **Direct Assessment** so weightage is 3.

**70% of 3 = 2.1**

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

**30% of 3 = 0.9**

Therefore Total Attainment for **Computer Oriented Statistical Techniques (MCS-104)** is  $(2.1 + 0.9) = 3$



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 (100/100)

## Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	25	48	73	51.1	18	18	8	44	13.2	64.3	75.65
2	R180855251002	RAJAT KUMAR BHATI	25	45	70	49	17	17	7	41	12.3	61.3	72.12
3	R180855251003	ROBIN RAGHUVANSHI	23	46	69	48.3	17	17	7	41	12.3	60.6	71.29

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma f_x = f1*x1 + f2*x2 + f3*x3$	$\Sigma f = f1 + f2 + f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
3	3	9	0	2	0	0	1	0	9	3	3.00	100.00

3 students or  $3/3 = 100\%$  students secured more than 40% marks in Direct Assessment so weightage is 3

70% of 3 = 2.1

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

30% of 3 = 0.9

Therefore Total Attainment for Foundation Course in Computer II (MCS-201) is  $(2.1 + 0.9) = 3$



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H.O.D. CA

SHRI RAM COLLEGE, MUZAFFARNAGAR

Name of Department : Computer Application  
Name of Programme : MSc(CS)

Session: 2018-19

Name of Course/ Subject : Design & Analysis of Algorithms (MCS-202)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment t 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	28	49	77	53.9	19	19	9	47	14.1	68	80.00
2	R180855251002	RAJAT KUMAR BHATI	17	44	61	42.7	16	16	7	39	11.7	54.4	64.00
3	R180855251003	ROBIN RAGHUVANSHI	18	44	62	43.4	16	16	7	39	11.7	55.1	64.82

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma f_x = f1*x1 + f2*x2 + f3*x3$	$\Sigma f = f1 + f2 + f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$
3	3	9	0	2	0	0	1	0	9	3	3.00	100.00

3 students or  $3/3 = 100\%$  students secured more than 40% marks in **Direct Assessment** so weightage is 3.

**70% of 3 = 2.1**

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

**30% of 3 = 0.9**

Therefore Total Attainment for **Design & Analysis of Algorithms (MCS-202)** is  $(2.1 + 0.9) = 3$



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(HOD, CA)

SHRI RAM COLLEGE, MUZAFFARNAGAR

Name of Department : Computer Application

Name of Programme : MSc(CS)

Session: 2018-19

Name of Course/ Subject : File Structure & Database Management System (MCS-203)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment t (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment t (E) 50	30 % of E =(F) 15	Total Assessment t (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment t 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	23	48	71	49.7	18	18	8	44	13.2	62.9	74.00
2	R180855251002	RAJAT KUMAR BHATI	29	42	71	49.7	16	16	7	39	11.7	61.4	72.24
3	R180855251003	ROBIN RAGHUVANSHI	21	44	65	45.5	16	16	7	39	11.7	57.2	67.29

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma f_x = f1*x1 + f2*x2 + f3*x3$	$\Sigma f = f1 + f2 + f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
3	3	9	0	2	0	0	1	0	9	3	3.00	100.00

3 students or  $3/3 = 100\%$  students secured more than 40% marks in Direct Assessment so weightage is 3.

70% of 3 = 2.1

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

30% of 3 = 0.9

Therefore Total Attainment for File Structure & Database Management Systems (MCS-203) is  $(2.1 + 0.9) = 3$



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(HOD, CA)

SHRI RAM COLLEGE, MUZAFFARNAGAR

Name of Department : Computer Application

Session: 2018-19

Name of Programme : MSc(CS)

Name of Course/ Subject : Computer Oriented Numerical Analysis (MCS-204)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	30	46	76	53.2	17	17	7	41	12.3	65.5	77.06
2	R180855251002	RAJAT KUMAR BHATI	29	46	75	52.5	17	17	7	41	12.3	64.8	76.24
3	R180855251003	ROBIN RAGHUVANSHI	15	45	60	42	17	17	7	41	12.3	54.3	63.88

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1& x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2& x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3& x3)	$\Sigma fx = f1*x1+f2*x2+f3*x3$	$\Sigma f = f1+f2+f3$	$m = \Sigma fx / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
3	3	9	0	2	0	0	1	0	9	3	3.00	100.00

3 students or  $3/3 = 100\%$  students secured more than 40% marks in Direct Assessment so weightage is 3.

70% of 3 = 2.1

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

30% of 3 = 0.9

Therefore Total Attainment for Computer Oriented Numerical Analysis (MCS-204) is  $(2.1 + 0.9) = 3$



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HOD (CS)

**SHRI RAM COLLEGE, MUZAFFARNAGAR**

Name of Department : Computer Application

Session: 2019-20

Name of Programme : MSc(CS)

Name of Course/ Subject : Interactive Computer Graphics (MCS-301)

**Assessment of Students**

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	24	49	73	51.1	19	19	9	47	14.1	65.2	76.71
2	R180855251002	RAJAT KUMAR BHATI	23	46	69	48.3	17	17	7	41	12.3	60.6	71.29

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma f_x = f1 * x1 + f2 * x2 + f3 * x3$	$\Sigma f = f1 + f2 + f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m * 100 / 3$ %
2	3	6	0	2	0	0	1	0	6	2	3.00	100.00

2 students or  $2/2 = 100\%$  students secured more than 40% marks in **Direct Assessment** so weightage is 3.

**70% of 3 = 2.1**

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

**30% of 3 = 0.9**

Therefore Total Attainment for **Interactive Computer Graphics (MCS-301)** is  $(2.1 + 0.9) = 3$



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(HOD/CA)

**SHRI RAM COLLEGE, MUZAFFARNAGAR**

Name of Department : Computer Application

Name of Programme : MSc(CS)

Session: 2019-20

Name of Course/ Subject : Computer Networks & Internet (MCS-302)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	28	49	77	53.9	19	19	9	47	14.1	68	80.00
2	R180855251002	RAJAT KUMAR BHATI	26	47	73	51.1	18	18	8	44	13.2	64.3	75.65

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1& x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2& x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3& x3)	$\Sigma fx = f1*x1+f2*x2+f3*x3$	$\Sigma f = f1+f2+f3$	$m = \Sigma fx / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
2	3	6	0	2	0	0	1	0	6	2	3.00	100.00

2 students or  $2/2 = 100\%$  students secured more than 40% marks in **Direct Assessment** so weightage is 3.

**70% of 3 = 2.1**

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

**30% of 3 = 0.9**

Therefore Total Attainment for **Computer Networks & Internet (MCS-302)** is  $(2.1 + 0.9) = 3$



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**(CHODIA)**

SHRI RAM COLLEGE, MUZAFFARNAGAR

Name of Department : Computer Application  
Name of Programme : MSc(CS)

Session: 2019-20

Name of Course/ Subject : Computer Oriented Optimisation Methods (MCS-303)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E = (F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	33	49	82	57.4	19	19	9	47	14.1	71.5	84.12
2	R180855251002	RAJAT KUMAR BHATI	3	47	50	35	18	18	8	44	13.2	48.2	56.71

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1& x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2& x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3& x3)	$\Sigma f_x = f1*x1+f2*x2+f3*x3$	$\Sigma f = f1+f2+f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
1	3	3	1	2	2	0	1	0	5	2	2.50	83.33

2 students or  $2/2 = 100\%$  students secured more than 40% marks in **Direct Assessment** so weightage is 3.

**70% of 3 = 2.1**

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

**30% of 3 = 0.9**

Therefore Total Attainment for **Computer Oriented Optimisation Methods (MCS-303)** is  $(2.1 + 0.9) = 3$



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(HOD/UA)



**SHRI RAM COLLEGE, MUZAFFARNAGAR**

Name of Department : Computer Application

Name of Programme : MSc(CS)

Session: 2019-20

Name of Course/ Subject : Object Oriented Systems (MCS-304)

**Assessment of Students**

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	39	48	87	60.9	18	18	8	44	13.2	74.1	87.18
2	R180855251002	RAJAT KUMAR BHATI	31	46	77	53.9	17	17	7	41	12.3	66.2	77.88

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma f_x = f1*x1 + f2*x2 + f3*x3$	$\Sigma f = f1 + f2 + f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
2	3	6	0	2	0	0	1	0	6	2	3.00	100.00

2 students or  $2/2 = 100\%$  students secured more than 40% marks in **Direct Assessment** so weightage is 3.

**70% of 3 = 2.1**

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

**30% of 3 = 0.9**

Therefore Total Attainment for **Object Oriented Systems (MCS-304)** is  $(2.1 + 0.9) = 3$



*(Signature)*  
HOD (CS)

SHRI RAM COLLEGE, MUZAFFARNAGAR

Name of Department : Computer Application

Name of Programme : MSc(CS)

Session: 2019-20

Name of Course/ Subject : Fuzzy Sets & Applications (MCS-401)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment t (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total Indirect Assessment t (E) 50	30 % of E =(F) 15	Total Assessment t (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment t 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	33	44	77	53.9	16	16	7	39	11.7	65.6	77.18
2	R180855251002	RAJAT KUMAR BHATI	18	40	58	40.6	16	16	7	39	11.7	52.3	61.53

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma f_x = f1*x1 + f2*x2 + f3*x3$	$\Sigma f = f1 + f2 + f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
2	3	6	0	2	0	0	1	0	6	2	3.00	100.00

2 students or  $2/2 = 100\%$  students secured more than 40% marks in **Direct Assessment** so weightage is 3.

**70% of 3 = 2.1**

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

**30% of 3 = 0.9**

Therefore Total Attainment for Fuzzy Sets & Application (MCS-401) is  $(2.1 + 0.9) = 3$



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(MOD-A)

SHRI RAM COLLEGE, MUZAFFARNAGAR

Name of Department : Computer Application

Session: 2019-20

Name of Programme : MSc(CS)

Name of Course/ Subject : Cryptology & Secure Systems (MCS-402)

Assessment of Students

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 $G*100/85$
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	32	46	78	54.6	17	17	7	41	12.3	66.9	78.71
2	R180855251002	RAJAT KUMAR BHATI	20	42	62	43.4	16	16	7	39	11.7	55.1	64.82

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1& x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2& x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3& x3)	$\Sigma f_x = f1*x1+f2*x2+f3*x3$	$\Sigma f = f1+f2+f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
2	3	6	0	2	0	0	1	0	6	2	3.00	100.00

2 students or  $2/2 = 100\%$  students secured more than 40% marks in Direct Assessment so weightage is 3.

70% of 3 = 2.1

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

30% of 3 = 0.9

Therefore Total Attainment for Cryptology & Secure Systems (MCS-402) is  $(2.1 + 0.9) = 3$



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(HOD, CA)

**SHRI RAM COLLEGE, MUZAFFARNAGAR**

Name of Department : Computer Application

Session: 2019-20

Name of Programme : MSc(CS)

Name of Course/ Subject : Artificial Intelligence & Neural Networks (MCS-403)

**Assessment of Students**

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment =(A+B)=C · 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment t (E) 50	30 % of E =(F) 15	Total Assessment t (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment t 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	26	45	71	49.7	17	17	7	41	12.3	62	72.94
2	R180855251002	RAJAT KUMAR BHATI	12	41	53	37.1	16	16	7	39	11.7	48.8	57.41

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma f_x = f1*x1 + f2*x2 + f3*x3$	$\Sigma f = f1 + f2 + f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
1	3	3	1	2	2	0	1	0	5	2	2.50	83.33

2 students or  $2/2 = 100\%$  students secured more than 40% marks in Direct Assessment so weightage is 3.

**70% of 3 = 2.1**

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

**30% of 3 = 0.9**

Therefore Total Attainment for Artificial Intelligence & Neural Networks (MCS-403) is  $(2.1 + 0.9) = 3$



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(HOD, CA)

**SHRI RAM COLLEGE, MUZAFFARNAGAR**

Name of Department : Computer Application

Name of Programme : MSc(CS)

Session: 2019-20

Name of Course/ Subject : JAVA Programming (MCS-404)

**Assessment of Students**

S.NO	Roll Number	Student Name	Direct Assessment		Total Direct Assessment (A+B)=C 100	70 % of C =(D) 70	Indirect Assessment			Total of Indirect Assessment (E) 50	30 % of E =(F) 15	Total Assessment (D+F)=G 85	Percentage of Marks out of 85 G*100/85
			External Marks (A)	Internal Marks (B) Class Test/ Unit Test Sessional			Assignment 20	Attendance 20	Behaviour / Attitude 10				
1	R180855251001	ANJALI	33	44	77	53.9	16	16	7	39	11.7	65.6	77.18
2	R180855251002	RAJAT KUMAR BHATI	10	43	53	37.1	16	16	7	39	11.7	48.8	57.41

No of Students getting marks more than 60% (f1)	Weightage (x1)	f1*x1 (Multiply of entries column f1 & x1)	No of Students getting marks more than 40% (f2)	Weightage (x2)	f2*x2 (Multiply of entries column f2 & x2)	No of Students getting marks less than 40% (f3)	Weightage (x3)	f3*x3 (Multiply of entries column f3 & x3)	$\Sigma f_x = f1*x1 + f2*x2 + f3*x3$	$\Sigma f = f1 + f2 + f3$	$m = \Sigma f_x / \Sigma f$	Attainment of Course (%) = $m*100/3$ %
1	3	3	1	2	2	0	1	0	5	2	2.50	83.33

2 students or  $2/2 = 100\%$  students secured more than 40% marks in Direct Assessment so weightage is 3.

70% of 3 = 2.1

100% of students secured more than 40% marks in Indirect Assessment so weightage is 3

30% of 3 = 0.9

Therefore Total Attainment for JAVA Programming (MCS-404) is  $(2.1 + 0.9) = 3$



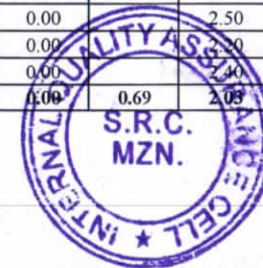
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HOD, CA

**ASSESSMENT FOR PROGRAMME TARGET VALUE**

Course Name	Course Code	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
Foundation Course in Computers I	MCS-101	2.67	2.67	2.67	2.00	1.67	2.33	0.00	1.00	1.67	3.00	0.33	3.00
Programming in C & Data Structure	MCS-102	2.75	2.75	2.50	2.75	2.50	1.75	0.00	0.75	2.25	2.50	2.75	3.00
Discrete Mathematical Structures	MCS-103	3.00	2.33	2.67	3.00	2.33	0.33	0.00	0.33	0.33	3.00	2.67	3.00
Computer Oriented Statistical Techniques	MCS-104	2.00	2.50	2.75	2.50	2.75	1.50	0.00		2.25	2.50	2.50	3.00
Foundation Course in Computers II	MCS-201	2.40	2.60	2.00	2.60	2.80	2.00	0.00		2.60	2.20	2.60	2.80
Design & Analysis of Algorithms	MCS-202	2.60	2.60	2.40	2.80	2.20	1.80	0.00		2.20	2.40	2.40	2.80
File Structure & Database Management System	MCS-203	2.60	2.20	2.40	2.00	2.60	2.00	0.00		2.40	2.60	2.40	2.80
Computer Oriented Numerical Analysis	MCS-204	2.40	2.40	2.20	2.40	2.00	1.60	0.00		1.40	2.20	2.20	2.40
Interactive Computer Graphics	MCS-301	2.50	2.25	2.75	2.50	1.75	2.00	0.00		1.75	2.50	2.00	3.00
Computer Networks & internet	MCS-302	2.50	2.67	2.50	2.17	1.67	2.17	0.00		2.00	2.33	2.17	2.83
Computer Oriented Optimization Methods	MCS-303	2.20	2.40	2.40	2.60	1.80	1.60	0.00		2.20	2.20	2.40	3.00
Object Oriented System	MCS-304	2.20	2.00	2.40	2.20	2.60	1.60	0.00		2.00	2.20	2.40	3.00
Fuzzy Sets & Applications	MCS-401	2.60	2.80	2.60	2.20	2.60	1.80	0.00		2.40	2.60	2.00	3.00
Cryptology & Secure Systems	MCS-402	2.50	2.75	2.25	2.50	2.00	2.25	0.00		2.50	1.50	2.00	3.00
Artificial Intelligence & Neural Networks	MCS-403	2.80	2.20	2.40	2.60	2.40	1.80	0.00		2.20	2.60	2.40	2.80
Java Programming	MCS-404	2.20	2.40	2.60	2.00	2.40	1.80	0.00		2.40	2.20	2.40	2.80
<b>Average Target Values</b>		<b>2.49</b>	<b>2.47</b>	<b>2.47</b>	<b>2.43</b>	<b>2.25</b>	<b>1.77</b>	<b>0.00</b>	<b>0.69</b>	<b>2.03</b>	<b>2.41</b>	<b>2.23</b>	<b>2.89</b>

**ASSESSMENT OF ATTAINMENT FOR PROGRAMME OUTCOME**

Course Name	Course Code	CO Attainment	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
Foundation Course in Computers I	MCS-101	3	2.67	2.67	2.67	2.00	1.67	2.33	0.00	1.00	1.67	3.00	0.33	3.00
Programming in C & Data Structure	MCS-102	3	2.75	2.75	2.50	2.75	2.50	1.75	0.00	0.75	2.25	2.50	2.75	3.00
Discrete Mathematical Structures	MCS-103	3	3.00	2.33	2.67	3.00	2.33	0.33	0.00	0.33	0.33	3.00	2.67	3.00
Computer Oriented Statistical Techniques	MCS-104	3	2.00	2.50	2.75	2.50	2.75	1.50	0.00		2.25	2.50	2.50	3.00
Foundation Course in Computers II	MCS-201	3	2.40	2.60	2.00	2.60	2.80	2.00	0.00		2.60	2.20	2.60	2.80
Design & Analysis of Algorithms	MCS-202	3	2.60	2.60	2.40	2.80	2.20	1.80	0.00		2.20	2.40	2.40	2.80
File Structure & Database Management System	MCS-203	3	2.60	2.20	2.40	2.00	2.60	2.00	0.00		2.40	2.60	2.40	2.80
Computer Oriented Numerical Analysis	MCS-204	3	2.40	2.40	2.20	2.40	2.00	1.60	0.00		1.40	2.20	2.20	2.40
Interactive Computer Graphics	MCS-301	3	2.50	2.25	2.75	2.50	1.75	2.00	0.00		1.75	2.50	2.00	3.00
Computer Networks & internet	MCS-302	3	2.50	2.67	2.50	2.17	1.67	2.17	0.00		2.00	2.33	2.17	2.83
Computer Oriented Optimization Methods	MCS-303	3	2.20	2.40	2.40	2.60	1.80	1.60	0.00		2.20	2.20	2.40	3.00
Object Oriented System	MCS-304	3	2.20	2.00	2.40	2.20	2.60	1.60	0.00		2.00	2.20	2.40	3.00
Fuzzy Sets & Applications	MCS-401	3	2.60	2.80	2.60	2.20	2.60	1.80	0.00		2.40	2.60	2.00	3.00
Cryptology & Secure Systems	MCS-402	3	2.50	2.75	2.25	2.50	2.00	2.25	0.00		2.50	1.50	2.00	3.00
Artificial Intelligence & Neural Networks	MCS-403	3	2.80	2.20	2.40	2.60	2.40	1.80	0.00		2.20	2.60	2.40	2.80
Java Programming	MCS-404	3	2.20	2.40	2.60	2.00	2.40	1.80	0.00		2.40	2.20	2.40	2.80
<b>PO Attainment through Results</b>			<b>2.49</b>	<b>2.47</b>	<b>2.47</b>	<b>2.43</b>	<b>2.25</b>	<b>1.77</b>	<b>0.00</b>	<b>0.69</b>	<b>2.03</b>	<b>2.41</b>	<b>2.23</b>	<b>2.89</b>



80 % of PO Attainment through results (A)	2.00	1.98	1.97	1.94	1.80	1.42	0.00	0.56	1.63	1.93	1.78	2.31
Alumni Survey	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
10 % of Alumni Survey (B)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Employer/ Professional Survey	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
10 % of Employer Survey (C)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
PO Attainment Value A+B+C	2.60	2.58	2.57	2.54	2.40	2.02	0.60	1.16	2.23	2.53	2.38	2.91
Target Value	2.49	2.47	2.47	2.43	2.25	1.77	0.00	0.13	2.03	2.41	2.23	2.89
Gap Value	0.11	0.11	0.10	0.11	0.15	0.25	0.60	1.03	0.20	0.12	0.15	0.02
Programme Attainment Status	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

#### GAP MANAGEMENT STRATEGY FOR PROGRAMME OUTCOMES

PO	GAP VALUE	STRATEGY
PO1	0.04	WILL WORK TO ENHANCE APPLICATION OF ENGINEERING KNOWLEDGE
PO2	0.02	WILL WORK FOR PROBLEM ANALYSIS



*Nidant Kishin*  
 (Nidant Kishin)  
 HOD, CA



# SHRI RAM COLLEGE MUZAFFARNAGAR, (UP)

17/02/2020

Dear Alumnus,

We are pleased to know about your success and would like to hear about the applicability of course and program syllabi (part of curriculum) to the skills required for work of yours. We would also like to know your opinion about your learning during your student life at our campus, please rate the following whether they have been beneficial for your professional life as an employee or as entrepreneur.

Please give your valuable opinion on a three point scale so as to find out the attainment of concerned program outcomes on the following points.

## Alumni's survey form for program outcomes

S.No	Parameter of Program Outcome	Grade as per your observations 1 or 2 or 3	S.No	Parameter of Program Outcome	Grade as per your observations 1 or 2 or 3
PO 1	Engineering knowledge	03	PO 7	Environment and sustainability	03
PO 2	Problem analysis	03	PO 8	Ethics	02
PO 3	Design/development of solutions	03	PO 9	Individual and team work	03
PO 4	Conduct investigations of complex problems	03	PO 10	Communication	03
PO 5	Modern tool usage	03	PO 11	Project management and finance	03
PO 6	The engineer and society	03	PO 12	Life-long learning	03

Name of Alumnus: ..... Anjali - .....

Program/ Course passed from SRC: ..... M.Sc. (CS) .....

Contact No.: ..... 8393925715 .....

Grade weightage :

1- Poor Correlation

2- Average Correlation

3- Strong Correlation







# SHRI RAM COLLEGE MUZAFFARNAGAR, (UP)

Dear Employer,

Shri Ram College is pleased to inform you that few of our students are working with your organization and wants to know the applicability of the syllabi (part of curriculum) to the skills required for the work of your employee.

Please give your valuable opinion on a three point scale so as to find out the attainment of concerned program outcomes on the following points.

## Employer's survey form for program outcomes

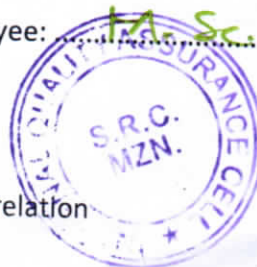
S.No	Parameter of Program Outcome	Grade as per your observations 1 or 2 or 3	S.No	Parameter of Program Outcome	Grade as per your observations 1 or 2 or 3
PO 1	Engineering knowledge	3	PO 7	Environment and sustainability	3
PO 2	Problem analysis	3	PO 8	Ethics	2
PO 3	Design/development of solutions	3	PO 9	Individual and team work	3
PO 4	Conduct investigations of complex problems	3	PO 10	Communication	3
PO 5	Modern tool usage	3	PO 11	Project management and finance	3
PO 6	The engineer and society	3	PO 12	Life-long learning	3

Name of employer: ..... Haleno Softwares .....  
Address: ..... Down IT Park, Sahasradhar Road, UK .....  
Contact No.: ..... 9598550009 .....  
Program/ Course passed from SRC by employee: ..... B.A. Sec. (CS) .....

Grade weightage :  
1- Poor Correlation


2- Average Correlation

3- Strong Correlation



Department Of Computer Application	After successful of two years Post Graduate program in M.Sc.-CS student attains
PROGRAM OUTCOMES	<p><b>PO1-</b> The knowledge of mathematics, science, and computing to the solution of complex scientific problems.</p> <p><b>PO2-</b>Skills and analytical abilities in computer based solutions developed in students.</p> <p><b>PO3-</b> Ability to apply knowledge of Computer Science to the real-world issues.</p> <p><b>PO4-</b>Learn new technology, grasping the concepts and issues behind its use and the use of computers.</p> <p><b>PO5-</b> Communicate scientific information in a clear and concise manner.</p>
PROGRAM SPECIFICS OUTCOME	<p><b>PSO1-</b> Mastery of Computer Science in the following core knowledge areas-</p> <ul style="list-style-type: none"> <li>• Data Structures and Programming Languages</li> <li>• Databases, Fuzzy and Artificial intelligence.</li> <li>• Computer Hardware and Architecture</li> </ul> <p><b>PSO2-</b> Problem-solving skills and the knowledge of computer science to solve real world problems.</p> <p><b>PSO3-</b>Inculcated various software development practices.</p> <p><b>PSO4-</b>Skills in latest technologies in the field of computer science and applications.</p>

  
 Principal  
 Shri Ram College  
 Muzaffarnagar

  
 Co-ordinator  
 IQAC, Shri Ram College,  
 Muzaffarnagar