Sri Balaji Society's

Sri Balaji University, Pune

UNIVERSITY FOR OPPORTUNITIES

Founder President & Chancellor - Late Dr. (Col.) Prof. A. Balasubramanian

• Discipline • Dedication • Determination

School of Computer Studies

Master of Computer Applications (MCA)

A.

Program Structure

SRI BALAJI UNIVERSITY, PUNE

Master of Computer Applications

PROGRAMME STRUCTURE 2025-27

(Offered by- School of Computer Studies)

1.	**Program Outcomes**	• **PO1: Professional Competence:** Proficiently design, develop, and oversee the management of software systems, ensuring their effectiveness and efficiency in meeting objectives. • **PO2: Computing Challenges Analysis:** Methodically analyze and implement solutions to computing challenges, employing systematic approaches to address complex problems effectively. • **PO3: Solution Proficiency Demonstration:** Demonstrate adeptness in formulating and executing solutions, showcasing competence in addressing challenges effectively and bringing projects to fruition. • **PO4: Continuous Learning Engagement:** Continuously engage in learning and evaluating technology advancements, ensuring professional development and staying abreast of industry trends for ongoing relevance and growth. • **PO5: Emerging Technology Application:** Leverage emerging technologies to advance career prospects, harnessing innovative solutions to stay competitive and adaptable in evolving industries. • **PO6: Diverse Team Collaboration:** Effectively engage in collaborative endeavors within diverse teams, fostering open communication and mutual understanding to achieve common goals efficiently.

		• **PO7: Ethical Standards Adherence:** Promote responsible technology usage and uphold ethical standards, ensuring adherence to principles of integrity and societal well-being in technological endeavors.
	Program Specific Outcomes	**Specialization 1- (Data Science)** • **PSO 1:** **Real-World Data Solutions:** Apply data science methodologies to tackle real-world challenges, deriving actionable insights and solutions from complex datasets to address practical problems • **PSO 2:** **Advanced-Data Analysis Leverage-** Advanced analytical tools and methodologies to extract valuable insights from data, enabling informed decision-making and strategic planning • **PSO 3:** **Insightful Data Communication -** Communicate data analysis findings effectively, conveying insights to stakeholders in a clear and actionable manner to drive informed decision-making **Specialization 2- (Software Development)** • **PSO 1:** **Software Development Proficiency -** Proficiently to develop robust and scalable software systems • **PSO 2:** **Software Development Improvement -** Continuously enhance software development practices through iterative refinement and adoption of emerging methodologies and technologies. • **PSO 3:** **Project Team Collaboration -** Facilitate effective collaboration within software projects, fostering synergy among diverse team members to achieve project objectives efficiently **Specialization 3 - (Artificial Intelligence)** • **PSO 1:** Apply fundamental principles of Artificial Intelligence and Machine Learning to design and develop intelligent software applications that solve real-world problems using Python, TensorFlow, and other AI frameworks.

		• **PSO 2:** Develop, train, evaluate, and deploy AI models for Natural Language Processing (NLP) Big Data Analytics, and Predictive Analytics, ensuring optimal performance and hands on with various tools such as Hadoop, Spark Basics, Sci-kit Learn etc. **PSO 3:** Demonstrate AI enabled software development, applications of Generative AI and Deep Learning while acquiring industry-relevant certifications, internships, and research opportunities to excel in AI-driven careers.
2.	**DURATION (IN MONTHS)**	24
3.	**INTAKE**	120
7.	**MEDIUM OF INSTRUCTION**	English
8.	**PROGRAMME PATTERN**	Semester
9.	**COURSE & SPECIALIZATION**	MCA (with specific Specialization as Data Science / Software Development/ Artificial Intelligence)
11.	**ASSESSMENT**	All courses will have 50% internal component and 50% component as external [University] examination.
12.	**STANDARD OF PASSING**	The total weightage (100%) for each subject is equally divided (50/50) between Internals and End Term Examinations. Students are expected to obtain a minimum of 40% of marks in the internals and the End Term Examinations individually to be considered as pass in the particular subject. Sri Balaji University, Pune follows grading system for awarding grade and grade points to students. It follows 10 point grade scale, SCPA and CGPA are calculated as the weighted average of grade point multiplied by the credits for the courses. The system of evaluation will be as follows: For each course, the score of internal assessment and the End term examinations will be added together and then converted into a grade and grade point average. A student shall be said to have earned the credits for the course if he/she earns minimum of 40% marks in internals and End term examinations separately. Grade point less than 4.00 will be treated as grade F (fail). Results will be declared for each semester and the final grade–sheet will give total grades and grade point
13.	**AWARD OF DEGREE**	Master of Computer Applications will be awarded at the end of semester IV examination by taking into consideration the performance of all semester

		examinations after obtaining minimum 4 CGPA out of 10 CGPA..
14.	**CLASSIFICATION OF CREDITS**	

Semester	**Program Core**	**Specialization Core**	**Open Elective**	**Total**
I	24	NA	NA	24
II	11	13	NA	24
III	9	15	NA	24
IV	22	NA	2	24
TOTAL	66	28	2	96

B.

MCA Batch 2025-27

Course Structure

MASTER OF COMPUTER APPLICATION (MCA)

Two Year Degree Programme- Batch 2025-27

Semester- I

Sr. No.	Catalog Code	Course Code	Course Title	Specialization	Credits	Internal Marks	External Marks	Total Marks
1	08PGCS141	MCA250101	Java Programming	For all	3	75	75	150
2	08PGCS079	MCA250102	Advanced DBMS (using PostgreSQL)	For all	4	100	100	200
3	08PGCS080	MCA250103	Advanced Operating System Concepts	For all	2	50	50	100
4	08PGCS143	MCA250104	Computer Network Technologies	For all	2	50	50	100
5	08PGCS082	MCA250105	Design & Analysis of Algorithms	For all	4	100	100	200
6	08PGCS083	MCA250106	Computer Laboratory-1 Java Programming	For all	2	50	50	100
7	08PGCS144	MCA250107	Computer Laboratory-2 Shell Scripting & Computer Networks	For all	2	50	50	100
8	08PGCS085	MCA250108	Computer Laboratory-3 PostgreSql	For all	2	50	50	100
9	08PGCS086	MCA250109	Effective Communication Skills	For all	2	50	50	100
10	08PGCS142	MCA250110	Indian Knowledge System	For all	1	25	25	50
				TOTAL	24	600	600	1200

Semester- II

Sr. No.	Catalog Code	Course Code	Course Title	Specialization	Credits	Internal Marks	External Marks	Total Marks
1	08PGCS087	MCA250201	Essentials of Python Programming	For all	2	50	50	100
2	08PGCS088	MCA250202	Computer System Organization & Architecture	For all	2	50	50	100
3	08PGCS145	MCA250203	Applications of Internet of Things	For all	3	75	75	150
4	08PGCS089	MCA250204	Mini Project- I	For all	2	50	50	100
5	08PGCS090	MCA250205	Computer Laboratory- 1 Python Programming	For all	2	50	50	100
6	08PGCS161	MCA250206	Foundation of Data Science	Data Science	3	75	75	150
7	08PGCS162	MCA250207	Business Intelligence using Power BI	Data Science	3	75	75	150
8	08PGCS163	MCA250208	Data Mining and Warehousing	Data Science	3	75	75	150
9	08PGCS094	MCA250209	Computer Laboratory-2 Business Intelligence using Power BI	Data Science	2	50	50	100
10	08PGCS095	MCA250210	Computer Laboratory-3 EDA and Quantitative Techniques using Python	Data Science	2	50	50	100
11	08PGCS146	MCA250211	Web Programming using BOOT Strap	Software Development	3	75	75	150

12	08PGCS147	MCA250212	UI/UX Design Flutter and Dart	Software Development	3	75	75	150
13	08PGCS148	MCA250213	Client side Scripting using Java Script	Software Development	3	75	75	150
14	08PGCS099	MCA250214	Computer Laboratory-2 UI/UX Design Flutter and Dart	Software Development	2	50	50	100
15	08PGCS100	MCA250215	Computer Laboratory-3 Java Script	Software Development	2	50	50	100
16	08PGCS149	MCA250216	Foundation of Artificial Intelligence	Artificial Intelligence	3	75	75	150
17	08PGCS150	MCA250217	Fundamentals of Machine Learning and Natural Language Processing	Artificial Intelligence	3	75	75	150
18	08PGCS151	MCA250218	Big Data Analytics and Management	Artificial Intelligence	3	75	75	150
19	08PGCS133	MCA250219	Computer Laboratory-2 Machine Learning & NLP	Artificial Intelligence	2	50	50	100
20	08PGCS134	MCA250220	Computer Laboratory-3 Big Data tools	Artificial Intelligence	2	50	50	100
				TOTAL	24	600	600	1200

Semester- III

Sr. No.	Catalog Code	Course Code	Course Title	Specialization	Credits	Internal Marks	External Marks	Total Marks
1	08PGCS101	MCA250301	Software Product and Project Management	For all	2	50	50	100
2	08PGCS102	MCA250302	Research Methodology and Ethics	For all	2	50	50	100
3	08PGCS152	MCA250303	Software Testing and Quality Assurance	For all	3	75	75	150
4	08PGCS103	MCA250305	Mini Project-II	For all	2	50	50	100
5	08PGCS153	MCA250306	Introduction to Machine Learning	Data Science	3	75	75	150
6	08PGCS154	MCA250307	Deep Learning and Natural Language Processing	Data Science	3	75	75	150
7	08PGCS155	MCA250308	Generative AI	Data Science	3	75	75	150
8	08PGCS107	MCA250309	Computer Laboratory-1 Machine Learning using Python	Data Science	2	50	50	100
9	08PGCS108	MCA250310	Computer Laboratory-2 Deep Learning and NLP	Data Science	2	50	50	100
10	08PGCS109	MCA250311	Computer Laboratory-3 Generative AI & Computer Vision	Data Science	2	50	50	100
11	08PGCS156	MCA250312	Fundamentals of GiT and Jenkins (JIRA)	Software Development	3	75	75	150
12	08PGCS157	MCA250313	Server Side Scripting	Software Development	3	75	75	150

			using NodeJS					
13	08PGCS158	MCA250314	Advanced Databases-No SQL	Software Development	3	75	75	150
14	08PGCS115	MCA250315	Computer Laboratory-1 Git and JIRA	Software Development	2	50	50	100
15	08PGCS116	MCA250316	Computer Laboratory-2 NodeJS	Software Development	2	50	50	100
16	08PGCS159	MCA250317	Computer Laboratory-3 No SQL	Software Development	2	50	50	100
17	08PGCS135	MCA250218	AI enabled Software Development	Artificial Intelligence	3	75	75	150
18	08PGCS136	MCA250319	Advance AI and Deep Learning	Artificial Intelligence	3	75	75	150
19	08PGCS137	MCA250320	Generative AI & Application using SAS	Artificial Intelligence	3	75	75	150
20	08PGCS138	MCA250321	Computer Laboratory-1 DevOps Automation using AI	Artificial Intelligence	2	50	50	100
21	08PGCS139	MCA250322	Computer Laboratory-2 Deep Learning	Artificial Intelligence	2	50	50	100
22	08PGCS140	MCA250323	Computer Laboratory-3 Generative AI	Artificial Intelligence	2	50	50	100
				TOTAL	24	600	600	1200

Semester- IV

Sr. No.	Catalog Code	Course Code	Course Title	Specialization	Credits	Internal Marks	External Marks	Total Marks
1	08PGCS118	MCA250401	Introduction to Constitution and human Rights	For all	2	50	50	100
2	08PGCS160	MCA250402	Vulnerability Assessment and Penetration Testing	For all	2	50	50	100
3			MOOC Course (Select from Basket)	Open Elective	2	50	50	100
4	08PGCS120	MCA250403	Research Paper Writing & Publication	For all	2	50	50	100
5	08PGCS121	MCA250404	Project/Institutional or Industrial Internship	For all	16	400	400	800
				TOTAL	24	600	600	1200

Basket for MOOC Course

Sr. No.	Catalog Code	Course Code	Course Title
1	08PGCS122	MCA250405	LinkedIn Learning Course-1
2	08PGCS123	MCA250406	LinkedIn Learning Course-2
3	08PGCS124	MCA250407	LinkedIn Learning Course-3
4	08PGCS125	MCA250408	LinkedIn Learning Course-4
5	08PGCS126	MCA250409	LinkedIn Learning Course-5
6	08PGCS127	MCA250410	LinkedIn Learning Course-6
7	08PGCS128	MCA250411	LinkedIn Learning Course-7
8	08PGCS129	MCA250412	LinkedIn Learning Course-8

Master of Computer Applications

Semester	Total Credits	Total Marks
Semester I	24	1200
Semester II	24	1200
Semester III	24	1200
Semester IV	24	1200
TOTAL	**96**	**4800**