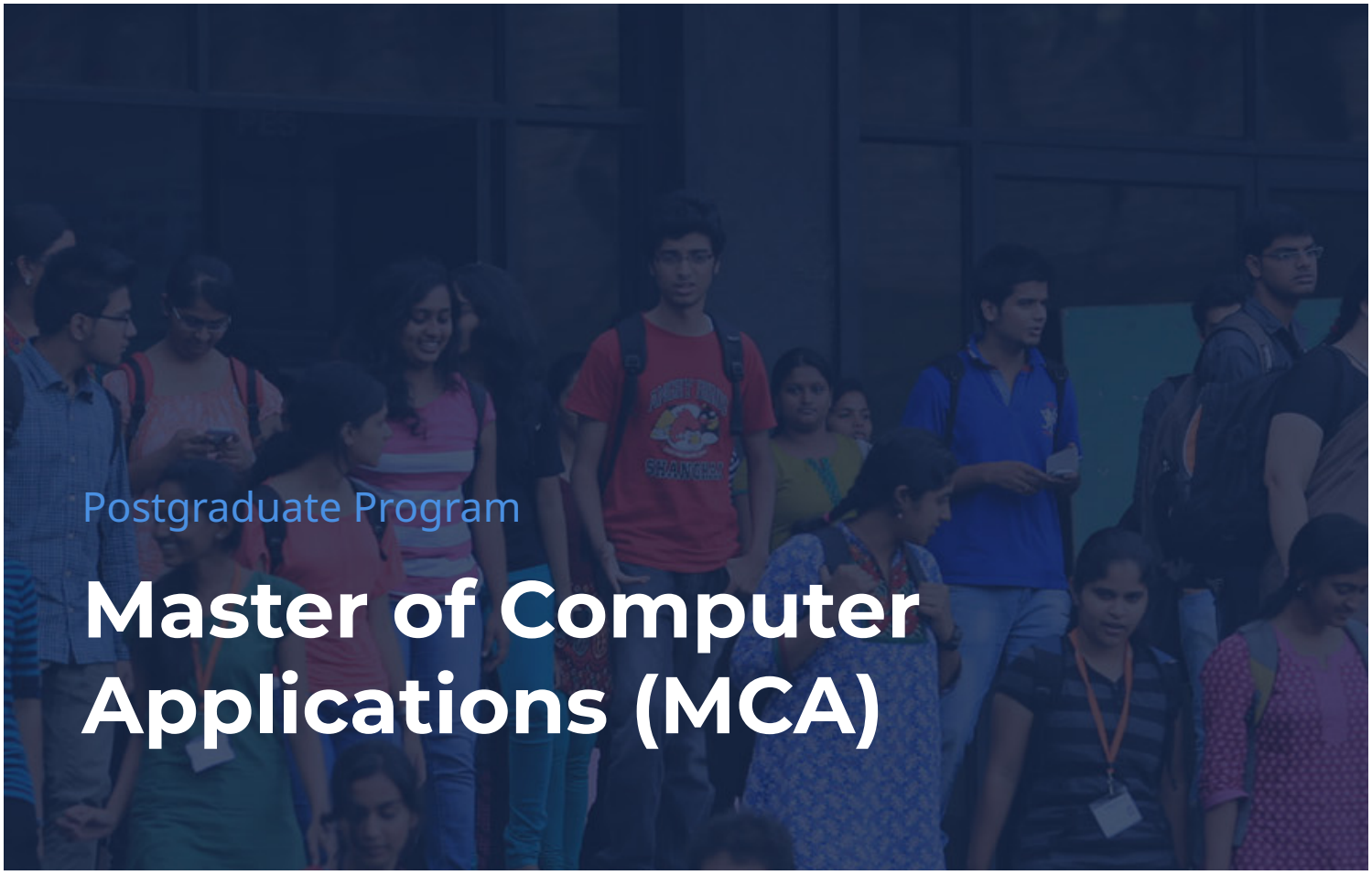
admissions@pes.edu 080-10-297297



Postgraduate Program

Master of Computer Applications (MCA)

The MCA program is intensified to introduce the theoretical concepts of computer science and its practical applications. The MCA graduates will be well competent professional practitioner and can suitably occupy positions such as System Analyst, System Designers, Software Engineers, Application Programmers, Network/Database Administrators etc. They can also pursue further education and research in computer science or related fields. The department also offers PhD programme in Computer Applications.

The Department Vision is to excel in imparting quality education, create ethically strong, creative, analytical, technically superior, knowledgeable, innovative, and inquisitive minds.

The Department Mission is to become dynamic and vigorous knowledge hub with an exposure to state of art in computer technologies and to empower students in becoming skilled and ethical entrepreneurs while endorsing free and open source software learning and usage and also, to promote and adapt professional development in a perpetual demanding environment and nurture Megaminds for Competent Accomplishments.

The department has made a tremendous impact on the learning experiences of the students in the last two years. Every subject is designed to be application oriented and most

Program Outline

Master of Computer Application (MCA)

Duration: 2 Years (4 Semesters)
Affiliation: PES University
Approval Body: UGC

Social Info

Register for PESSAT

Admission & Eligibility

of the courses are practical based.

KEY DIFFERENTIATORS OF THIS PROGRAM

PESU's BCA program with specializations in System Administration, Application Design, and Software Testing has several key differentiators, including:

- **Specializations:** The MCA program at PESU offers three different specializations: Development Stack, Data Analytics, and Security Essentials. These specializations allow students to focus on a particular area of interest and gain expertise in that area.
- **Electives:** In addition to the core courses and specializations, the MCA program at PESU offers a range of elective courses in emerging areas such as Blockchain Technologies, Digital Forensics, and Zero Code Development. These courses are designed to help students stay up to date with the latest trends and technologies in the field.
- **Digital Content:** Apart from classroom teaching, the students
- **Interdepartmental Courses:** The MCA program at PESU offers interdepartmental courses, which allows students to take courses from other departments and gain a broader understanding of topics beyond computer science.
- **Placement Training:** The MCA program at PESU includes placement training, with mock interviews and other resources to help students prepare for job interviews and launch their careers in the IT industry.
- **Project with Publication:** The MCA program at PESU requires students to complete a project in three phases, culminating in a paper publication. This gives students the opportunity to conduct research in a specific area of interest and gain experience in

get access to the extensive digital course materials for each course with a larger purview to cater the needs of slow learners and advanced learners. The Live videos of the classes are made available along with a crisp AV summary for each class.

- **Practical Learning:** The MCA program at PESU emphasizes practical learning, with opportunities for students to participate in datathons, hackathons, and studythons. These events provide students with hands-on experience and the opportunity to work on real-world problems.

academic writing and publishing.

- Overall, the MCA program at PESU is designed to provide students with a overall complete education in computer science, with a focus on practical learning, emerging technologies, and real-world applications.

PROGRAM DESIGN

Course	Percentage	Credits	Distribution
Preliminary	1.11	1	3% – 6%

Foundation	17.78	16	30% – 40%
Core	42.22	38	30% – 40%
Elective	16.67	15	10% – 20%
Project Work / Self Study	22.22	20	6% – 12%
Total	**100.00**	**90**	**90 (C)**

Help us with your details and we shall connect with you!

Name *

Email *

City *

+91 Mobile Number *

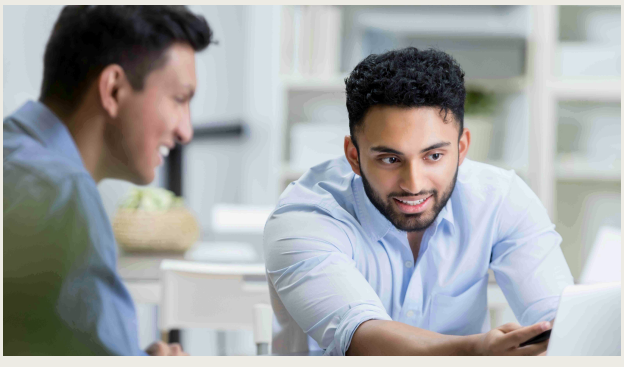
Submit

Press Submit after OTP verification

WHO SHOULD PURSUE THIS PROGRAM?

Master of Computer Applications (MCA) is a postgraduate degree program that is designed for individuals who want to pursue a career in the field of computer applications.

- Students with a Bachelor's degree



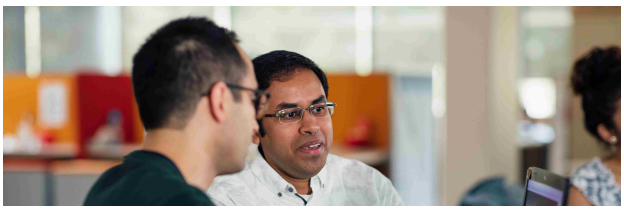
MCA is an excellent course for those who want to deepen their understanding of computer

in computer science or related fields who want to pursue higher studies and advance their career in the field of computer applications.

- IT professionals who want to enhance their knowledge and skills in areas such as software development, database management, and computer networking.
- Individuals who want to pursue a career in the field of software development, web development, mobile app development, data analytics, or cybersecurity.
- Entrepreneurs or business owners who want to start their software development or IT consulting companies and need to gain knowledge and skills to manage these businesses.

applications and develop advanced technical skills for career growth and success in the IT industry.

FOCUS AREAS



CURRICULUM STRUCTURE

+ SEMESTER 1

+ SEMESTER 2

Programming and Software Development: Programming languages such as Java, C++, Python, and web development technologies such as HTML, CSS, JavaScript, and PHP

Database Management: Design, implementation, and management of databases. Students are taught how to use database management systems such as MySQL, Oracle, and SQL Server, and develop skills in data modelling, query optimization, and database security.

Computer Networks and Security: Computer networks, network protocols, and network security. Students are taught how to design and implement computer networks, configure network devices, and secure network infrastructure.

Artificial Intelligence and Data Analytics: Data mining, machine learning, natural language processing, and computer vision. Students are taught how to use programming languages and tools to analyse and visualize large data sets.

Web Development: Front-end and back-end web development technologies, such as Angular, React,

+ SEMESTER 3

+ SEMESTER 4

+ ELECTIVE I

+ ELECTIVE II

+ ELECTIVE III

+ OPEN ELECTIVE

COURSE STRUCTURE (2023 – 2025 BATCH)

Semester	Credits		Description
	Semester	Cumulative	
I	23	23	2T(5C) + 3T(4C) + 1T(1C)
II	26	49	2T(5C) + 2T(4C)+ 1 Elective (4C) +

Node.js, and Express.js. Students are taught how to design and implement web applications, use APIs, and work with databases.

Cloud Computing: Cloud computing concepts, virtualization, cloud storage, and cloud security. Students are taught about cloud service models such as SaaS, PaaS, and IaaS, and cloud deployment models such as public, private, and hybrid clouds. They are also taught how to use cloud platforms such as Amazon Web Services (AWS) and Microsoft Azure.

Mobile App Development: Developing mobile applications for iOS and Android platforms. Students are taught about mobile app development frameworks such as React Native and Flutter, mobile app design principles, and mobile app testing and deployment.

Cybersecurity: Focus on cybersecurity concepts, threats, and defense mechanisms. Students are taught about cyber-attacks, vulnerability assessment, penetration testing, cryptography, and security policies.

Digital Marketing: Focus on e-commerce concepts, online payment

			Project (4C) + 1 Audit
III	28	77	2T(5C) + 1T (4C) + 2 Electives (4C) + Project (6C)
IV	13	90	Open Elective (3C) + Sp. Topic/ Internship (8C) + Project (2C)

There are three streams, students can choose any one stream and take 3 electives in the stream to get specialization certificate

systems, and online marketplaces. Students are taught about e-commerce business models, online marketing, customer relationship management, and e-commerce security.

SPECIALIZATIONS

Stream	Title of Course	Semester
Development Stack	Smart App Development (IoT)	2
	Android App Development	3
	Cross Platform Application Development	3
Data Analytics	Data Engineering	2
	Natural Language Processing and Computer	3

Stream	Title of Course	Semester
Non-stream Electives	Entrepreneurship Practices	4
	Microservices	4
	Digital Forensics	4
	Blockchain Technologies	4
	UI & UX	4
	Social Network Analysis	4
	Network	4

	Vision	
	Stream Analytics	3
Security Essentials	Network Security	2
	Cyber Security	3
	Ethical Hacking	3
	Management	
	Advanced Inter networking	4
	Art of Testing	4
	Zero Code or No Code Development	4

Note: All students may have specialization in any of the above streams by choosing 3 courses in the same stream

PEDAGOGY METHOD

A combination of traditional classroom lectures, practical lab sessions, and project-based learning is used to provide students with a comprehensive understanding of the field of computer applications.

EXTRA-CURRICULAR/ CO-CURRICULAR ACTIVITIES

- Inter and Intra college Hackathons
- Inter and intra college Ideathons
- Hands-on skill building workshops

The traditional classroom lectures include theoretical topics such as algorithms, programming languages, computer architecture, operating systems, software engineering, and database management. These lectures are supplemented using visual aids, case studies, and group discussions to facilitate a deeper understanding of the topics covered.

In addition to classroom lectures, we also include practical lab sessions wherein students are encouraged to apply the concepts they have learned in class to real-world scenarios. These lab sessions involve working on individual as well as group projects, experimenting with programming languages and software tools, or testing and analysing code.

Project-based learning is also commonly used in our course, where our students work on projects that require them to identify a real-world problem, design and develop a software solution, and then present their findings and recommendations to their peers and to the faculty.

The overall emphasis is on hands-on learning, critical thinking, and problem-solving skills, in addition to

- Research Conferences
- Seminars and Presentations
- Cultural Events and Fests
- Coding Challenge
- Industry Visits and Field Trips and more...

theoretical knowledge.

FUTURE CAREER PROSPECTS AFTER COMPLETING THE PROGRAM

There are diverse career options for Graduates in Computer Applications. Some of them are as listed below...

- **Full Stack Developer:** A lot of students have a great opportunity in shaping their career as Full-Stack Developer. The opportunities are available in both Service and Product based companies. Currently the technology stack used in such profiles are MEAN and MERN Stack.
- **Web Design and Development:** A lot of Web-Development companies hire Computer Applications students for designing Websites for E-commerce, Finance, Hospitality, Transportation, and various other domains.
- **CRM & ERP:** A good number of students are absorbed by companies building CRM and ERP
- **Network Management:** Companies relying on network infrastructure also hire freshers and train them in Infrastructure Management. They are trained on SNMP tools to constantly monitor the critical network components. They also work on automation of various networking operations which otherwise is time consuming.
- **Network Security:** A few organizations provide opportunities for freshers to work on identifying vulnerabilities in their system and identify security measures. A new dimension is now open in Blockchain technology.
- **IoT and Data Science:** Abundant scope is open for Graduate

applications. They train the freshers on SAP technologies, Oracle, or proprietary software.

- **Mobile App and UI / UX:** Graduates are also preferred in developing Mobile Applications, front-end design - User Interface / User Experience, in customizing the first-hand experience of customers/users in handling any user interface. Companies building Android / IOS apps for Games, AR/VR applications etc prefer freshers in this domain as well.

freshers who have hands-on Internet of Things to work on various Industrial projects, Security, Home Automation etc. The huge amount of data collected is also further considered for Data Analytics and Data Science projects. Most of these projects also demand skills of Cloud Computing.

- **Software Testing:** Computer Applications students are also in demand for Software testing both for manual and automated divisions. The students are exposed to Testing tools like Java Script, Selenium etc.

PLACEMENT OPPORTUNITIES & CAREER ASSISTANCE

The number of companies that visit our campus to hire Graduates of Computer Applications cross the century mark. A bunch of new companies get enrolled in to list of companies visiting the campus year on year. Some of the prominent companies that hire our students are:

PES UNIVERSITY PROVIDES PLACEMENT ASSISTANCE IN VARIOUS FORMATS/ EVENTS

Placement Orientation: An orientation is organized by the University and at the Department level to make the students aware of the Placement policies. The policies are framed such that every student gets fair opportunity in making their career.

Pre-Placement Training: The University has a unique campus-wide program called Pre-Placement Training, a unit of PESU I/O. A team of final year students conduct a series of tests, both aptitude and technical twice a week.

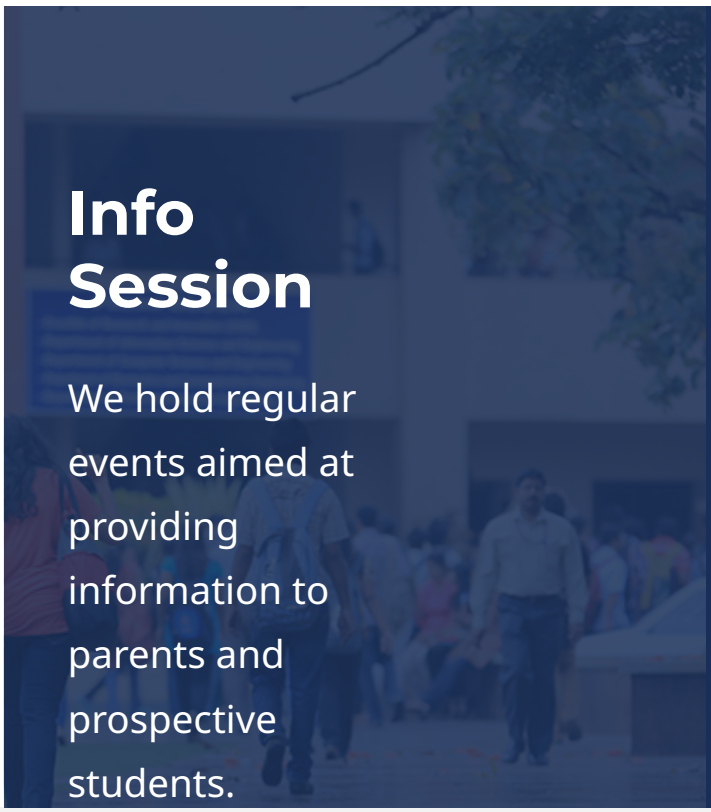
Alumni Interaction: The Department organizes Alumni interactions with the students to assist them in preparing for Placements right from Resume

Industry Interactions: Students are taken to various technology summits to understand the industry potentials and its future trends.

writing to facing interviews.

Invited Guest Lectures: Sessions are conducted by inviting industrial trainers to help the freshers crack the aptitude tests.

Placement Coordinator: There is a dedicated coordinator who deal with the Placement Activities at the departmental level to assist the students in getting more exposure to the industry expectations and real-world applications.



Info Session

We hold regular events aimed at providing information to parents and prospective students.

Interested in becoming an PESU student?

You can apply through PESSAT.

Learn More About PESSAT

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+91 80 26722108

For Admissions
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admissions@pes.edu

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- NATIONAL ACADEMIC DEPOSITORY (NAD)

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- CALENDAR OF EVENTS
- NIRF

IMPORTANT INFO

- UGC PROFORMA
- PESU STATUS NOTIFICATION FROM UGC
- PES UNIVERSITY ACT
- CVL NAD
- IQAC
- INTERNAL COMMITTEE