

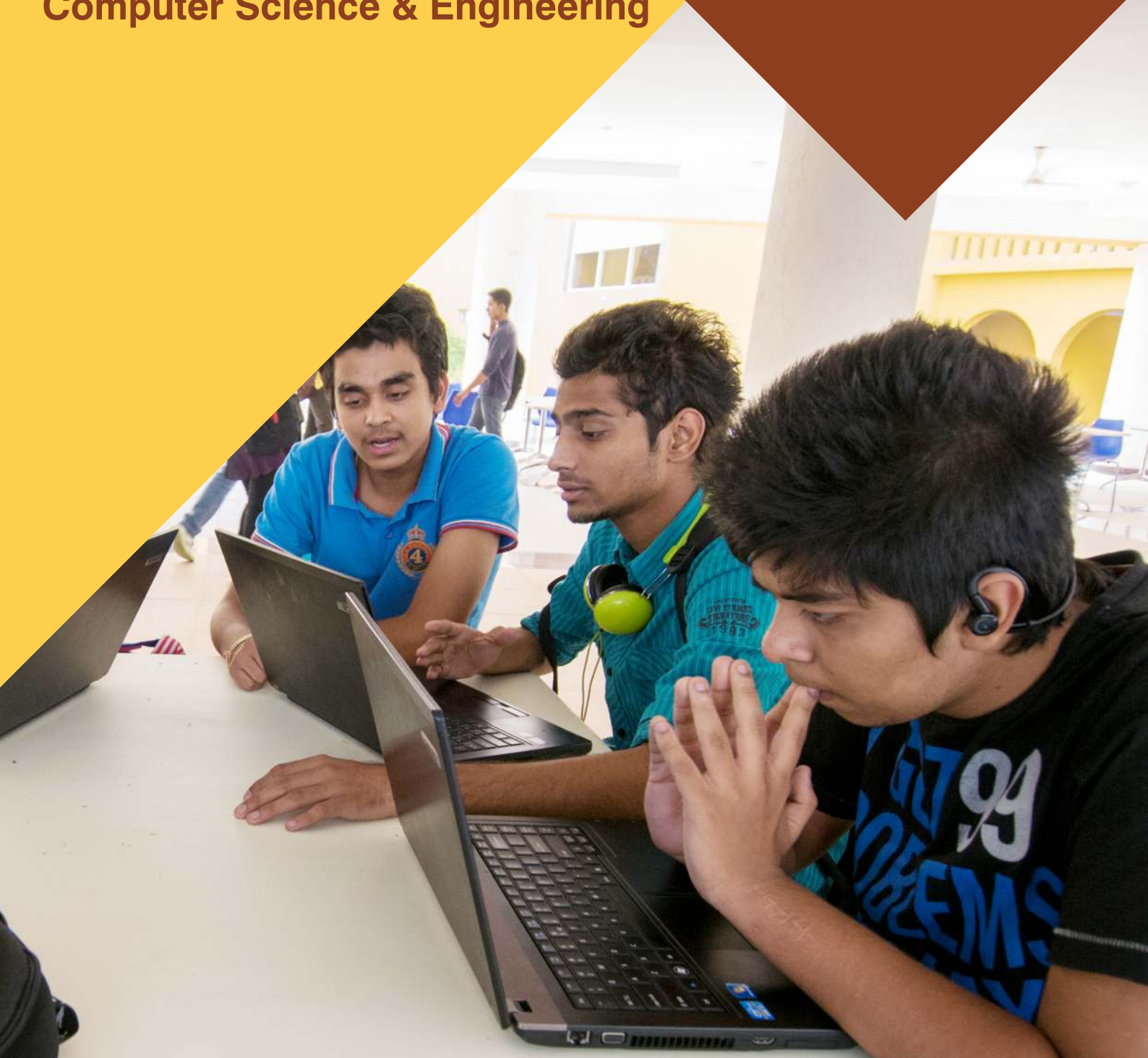


MANIPAL UNIVERSITY  
JAIPUR

# Admission Booklet 2022-23

## B.Tech

### Computer Science & Engineering



# Admission Booklet

## B.Tech

### Computer Science & Engineering

### 2022-23

#### ABOUT THE PROGRAMME

B.Tech. Computer Science and Engineering at Manipal University Jaipur (MUJ), aims to produce versatile students who not only are employment ready for industries, Government sector, higher education, and research fields but who can also be successful entrepreneurs in the corporate world. With many industrial and international collaborations, CSE Department strives for academic excellence leading to excellent placements every year.

B.Tech program in Computer Science & Engineering nurtures students to cope with the ever-changing environment in technology and provides a strong foundation in computer science and problem-solving techniques.

#### KEY HIGHLIGHTS OF THE PROGRAMME

- **State-of-the-art Computing Labs:** High computing labs powered by NVIDIA graphics card and PARAM Shavak of CDAC, Pune.
- **Well-Designed Curriculum:** The curriculum has been designed as per the latest industry demands.
- **Choice Based Credit System (CBCS):** Students have the option to choose program electives based on their interests.
- **Academic Flexibility:** Students have the option to choose open electives from other domains (other than computer science) with the aim to enhance their skills and more scope of taking up case studies, projects, assignments, and vocational training including entrepreneurship.
- **Experiential Learning:** Students gain practical knowledge through projects and research.
- **Global Exposure to Students:** MoU signed with leading industries and academia to facilitate students with state of art technologies and to make them industry-ready. Directorate of International Collaborations (DoIC) also facilitates collaborations and partnerships with institutions globally for academic strategies, Student Exchange Programs, Semester Abroad Program (SAP), student mobility (short or long term), and higher education opportunities. These all students related international activities further serve the determination of enhancing academic standards to meet international dimensions.
- **Professional Memberships:** Association for Computing Machinery (ACM), Computer Society of India, IEEE, and IEEE Women in Engineering (WIE).
- **Holistic Development of Students:** Music, Literature, and Dramatics Clubs facilitate students to show their prowess in the cultural arena, under the able guidance of expert faculty. Technical Clubs like the Green Club, Robotics Club, IEEE Students' chapter, IE(I) and ICEIT chapters, etc. allow the students to learn and update themselves with the latest technologies and showcase their abilities in various fields, outside their scope of the study.
- **Placements:** Placements assistance (Mock Drives/Interviews), Internships Assistance, Placement classes by the expert team of Training and Placement.

### **SPECIALIZATIONS OFFERED (IF ANY)**

**Btech - (Hons) Computer Science & Engineering with Specialization in Artificial Intelligence & Machine Learning.**

The four-year degree program in Computer Science & Engineering (Artificial Intelligence & Machine Learning) offers cutting-edge courses in the field of Machine Learning & Artificial Intelligence.

The program curriculum has been designed with a proper blend of theory and practical and keeping in view the future industry demand in the field of AI and Machine Learning. The program focuses on the forefront subjects like Deep Learning, Soft Computing, Text Analytics, Information Retrieval, and the programming skills required to excel in this domain.

Machine Learning has been very ubiquitous nowadays and has played a critical role in improving our daily lives. There exists a vast scope of AI & ML in Speech Recognition, Medical Diagnosis, Sentiment Analysis, Smart City Project, Predictive Analysis, Recommendation systems, etc.

### **CAREER OPPORTUNITIES**

- Data Analyst / Scientist
- Software developer / Manager
- Network Security Manager
- Cyber Security Analyst
- Database Designer & Manager
- Computer Scientist
- AI Engineer
- Data Scientist
- Business Intelligence (BI) Developer

### **THE MUJ EDGE (Why MUJ)**

Best-in-Class Infrastructure with Focus on Health and Hygiene, Excellent Placement & Internship Opportunities, State of the Art Labs, More than 100 National & International; Academic and Industrial Collaborations, Career- Oriented Courses at all levels, Academic Excellence, Flexible Curriculum- Curriculum Revision at Regular Interval Based on the Feedback of its Stake Holder's (Students, Alumni, Parents, Employers & Faculty), Atal Incubation Centre, Overall Student Development via Co-Curricular and Extra-Curricular Activities, Excellent Sports Facilities, Excellent Hostel Facilities.

For more details visit the official webpage: <https://jaipur.manipal.edu/foe/schools-faculty/schools-list/scit/computer-science.html>

### **ELIGIBILITY CRITERIA**

#### **MET 2021 Rank Holders**

The candidate must have passed 10+2 or A Level or IB or American 12th grade or equivalent examination with Physics, Mathematics and English as Compulsory subjects, along with any one of Chemistry or Computer Science or Biotechnology or Biology or Statistics or Engineering Drawing as optional subject for admission to B Tech, with minimum of 50% marks in Physics, Mathematics and the optional subject, put together.

#### Direct admission

For direct admission (in branches where seats are likely to remain vacant) the following candidates will be eligible:

All remaining MET 2021 rank holders, i.e., those who did not/could not come for counselling.

OR

All students who have a JEE rank and have qualified for JEE Advanced in that year

OR

Based on the SAT score

OR

All other Students with Physics, Mathematics and English as compulsory subjects and who have 60% or equivalent (in PMX subjects) in their 12th std. (where X could be Chemistry/Computers Science/ Biotechnology/Biology/Statistics/ Engineering Drawing).

#### B Tech - Lateral Entry

Candidates who have passed 3 year diploma in relevant field of Engineering/BSc (PCM) with a minimum of 50% marks in aggregate can apply for Lateral Entry to B Tech Programmes.

#### FEE DETAILS

Program	Program Fee	
	Indian (Rs)	International (USD)
B Tech	13,84,600	28,300

#### LATERAL ENTRY FEE DETAILS

Program	Program Fee	
	Indian (Rs)	International (USD)
B Tech-Lateral Entry	4,69,300	9,900

#### PLACEMENTS STATISTICS (For 2022 Batch -Till Date)

Highest Package: 43 Lakh

Average Package: 8.6 Lakh

No of Offers Made: 441

No of Recruiters Visited: 65

#### PROMINENT RECRUITERS

Microsoft, Amazon, Philips, Dell, Cisco, Juniper, Zscaler, Accenture, ZS Associates, CommVault, Philips, HP, TCS, HCL, Harness, Nagarro, and many more.

## **NATIONAL AND INTERNATIONAL COLLABORATIONS**

To prepare students profession and industry ready, the department is having collaborations with the following renowned IT industries:

### **Cisco Academy:**

- Cisco Certified Network Associate (CCNA)
- Networking Essentials
- Cybersecurity Essentials

### **EC Council Global Certification:**

- Computer Secured Certified User (CSCU)
- EC Council Security Specialist (ECSS)
- Certified Ethical Hacker (CEH)
- EC Council Certified Security Analyst (ECSA)
- Licensed Penetration Tester (LPT)
- Computer Hacking Forensic Investigator (CHFI)

### **CompTIA Certification:**

- A+ Certification
- Network + Certification
- Security + Certification
- Data + Certification

**VM Ware IT Academy**

**Microsoft Imagine Academy**

**Dell Technologies**

**Secure Meters**

**IBM Academy**

### **MOUs from Academia (Exchange Programme)**

DoIC supports the local student committee of the International Association for the Exchange of Students for Technical Experience (IAESTE). It aims to connect students with the real work environment, industries, research institutes, employers, consulting firms, and laboratories in foreign countries. The Local Committee of IAESTE at MUJ assists students both incoming and outgoing with documentation, local hospitality, and travel. DoIC also facilitates collaborations and partnerships with institutions globally for academic strategies, Student Exchange Programs, Semester Abroad Program (SAP), student mobility (short or long term), and higher education opportunities. These all students related international activities further serve the determination of enhancing academic standards to meet International dimensions. Manipal University Jaipur not only promotes student related international activities but also promotes faculty exchange, collaborative research, credit transfers, curriculum building, and joint conferences/events, etc. The directorate is also participating in International Joint-projects and funding.

- The University of Newcastle, Australia
- Iowa State University of Science & Technology, USA
- Prince Sultan University Riyadh, Saudi Arabia
- The Southern Federal University
- Deakin University Victoria, Australia
- University of Florida, USA



- Florida International University.
- Polytechnic Institute of Leiria, Portugal
- University of Ostrava Czech Republic
- Technical University of Varna, Bulgaria

## RESEARCH AREAS

The areas of research include - High Performance Computing, Machine Learning, Cloud Computing, VANET Security, Sentiment Analysis, Cryptography, Image Processing, Data Mining, Information Retrieval, Information Security, Internet of Things, Malware Detection, Computer Vision, Approximation Algorithms, Artificial Intelligence, Software Engineering, Databases, Big Data Analytics, Real Time Application, Mobile computing, Distributed Computing, Soft Computing, Network & Security, Advanced Computer Arch., Automata Theory, Security in Ipv6 (Mipv6).

## KEY STUDENT ACHIEVEMENTS

Some of the key student achievements are given below.

- Student Start-up / Incubation: 10
- Some of the start-ups are as follows: 2Cord Technology by Shivam Singh, 2023 Batch; Bugbase (Bug Bounty) by Kathan Desai, 2024 Batch; Curis, Health care- check up, medicine reminders by Deepankar Garg, 2018 Batch; Transpo, 2018; Booking of cabs anywhere in Jaipur by Himanshu Bhalani, 2020 Batch, and so on.
- Number of students (2022 Batch) doing higher degree from abroad: 20
- Student received recognition in All India Research Championship & Smart India Hackathons (SIH) – 30
- Foreign Internship Through International Association for the exchange of Students for Technical Experience (IAESTE) – 09
- Rajdev Kapoor and Kshitij Sinha won People's Choice/Most Popular Award Rajdev in Swampacks VIII Hackathon in 2022.
- Varun Bansal, 2022 Batch, got placed in Amazon for the Highest Package of 43 Lakhs/annum.
- Sehejbir Bhasin and Shikhar Kumar, 2024 Batch, won Product Hack Competition conducted by IIT Bombay in 2022.
- Jisha Dewanagn and AaroHi Manchanda, 2024 Batch, got selected for Google Software Internship 2022.
- Manogya Kabra, 2024 Batch, got Innovation and Futuristic Prototype International Challenge award by Institution's Innovation Council, MHRD.
- Chhavi Deshlahra, 2023 Batch, won Techstars presents Google Startup Weekend Award in 2021.
- Samarth Khanna and Kabir Nagpal, 2022 Batch, got 2nd and 3rd position in HackRx 2.0 Hackathon conducted by Bajaj Finserv in 2021.
- Hiya Bhatt, 2024 Batch, got third prize in Code Golf event conducted by Turing Sapiens hackerrank.
- Ayush Singh, 2024 Batch, won Swift Student Challenge of Apple Incl. in 2021.
- Parth Chadha & Anshum Shailey, 2023 Batch, won 2nd Bengaluru Moving hackathon organized by Young Leaders for Active Citizenship (YLAC), in collaboration with WRI India Ross Center, Let me breathe, and the Directorate of Urban Land Transport (DULT), UDD, & Govt. of Karnataka.

## UNIQUE RESEARCH AND LAB FACILITIES

- Computing Research Lab
- Database (Oracle) Lab
- ERP (SAP) Lab
- Cyber Security (EC-Council) Lab
- Cloud Computing (VMware) Lab
- Big Data & Machine Learning Lab
- PARAM Shavak - Supercomputer

developed by Centre for Development of Advanced Computing (CDAC) & NVIDIA. 3 Tera-FLOPS peak computing power and 8 Terabyte of storage, pre-loaded with parallel programming development tools and libraries.

## FEATURED ALUMNI

- Sparsh Kotriwal, 2021 Batch, got placed in Intel Corporation for the role of Software Engineer.
- Jaskaran Singh, 2021 Batch, achieved an AIR-82 in GATE-2022 Exam.
- Kashish Madan, 2021 Batch - Internship for a duration of 7 months at the University of Grenoble Alpes, France as an App Developer. April-October 2020. Also, she received the Student Grace Hopper Scholarship, India 2020.
- Pulkit Gupta, 2020 Batch got full-time placement offer in Paytm for the role of Software Engineer.
- Ayus Sarangi, 2020 Batch, got placed in Walmart Global Tech India for the role of Software Engineer 3.
- Prerit Pathak, 2020 Batch, got placed in Google for the role of Secure Software Engineering Intern. He has also received appreciation letter and cyber security hall of fame from Harvard University.
- Anirudh Bagri, 2020 Batch got placed in Google for the role of SDE.
- Divyaraj Singh Chauhan, 2018 Batch got selected in Facebook as Meta Software Engineer Intern.
- Hrishabh Digaari and team, 2021 Batch Secured 1st position with prize money 1500 USD and Internship offer at John snow labs, USA in "NLP SUMMIT 2020".
- Moksha Kant, 2021 Batch, won Global Coding Championship by Credit Suisse (October 2019) : All India Rank 47. Google Developer Student Clubs Manipal University Jaipur Lead.
- Tushar Sadana, 2019 Batch, won the prestigious UPE ACM STUDENT CHAPTER SCHOLARSHIP AWARD of USD 1,000 which is given to only 4 people every year worldwide!

## CURRICULUM (ONLY SCHEME)

Year	THIRD SEMESTER						FOURTH SEMESTER					
	Subject Code	Subject Name	L	T	P	C	Subject Code	Subject Name	L	T	P	C
II	EO2001	Economics	3	0	0	3	BB0025	Value, Ethics and Governance	2	0	0	2
	MA2101	Engineering Mathematics – III	2	1	0	3	MA2201	Engineering Mathematics – IV	2	1	0	3
	CS2101	Data Communications	3	1	0	4	CS2201	Operating Systems	3	1	0	4
	CS2102	Computer System Architecture	3	1	0	4	CS2202	Relational Database Management Systems	3	1	0	4
	CS2103	Data Structures & Algorithms	3	1	0	4	CS2203	Computer Organization	3	1	0	4
	CS2104	Object Oriented Programming	3	1	0	4	*** **	Open Elective – I	3	0	0	3
	CS2130	Data Structures & Algorithms Lab	0	0	2	1	CS2230	Operating Systems Lab	0	0	2	1
	CS2131	Object Oriented Programming Lab	0	0	2	1	CS2231	Relational Database Management Systems Lab	0	0	2	1
							CS2232	Web Technology Lab	0	0	2	1
			17	5	4	24			16	4	6	23
	Total Contact Hours (L + T + P)		25			Total Contact Hours (L + T + P) + OE			23+3= 26			

III	FIFTH SEMESTER						SIXTH SEMESTER					
	CS3101	Artificial Intelligence & Soft Computing	3	1	0	4	BB0026	Organization and Management	3	0	0	3
	CS3102	Design & Analysis of Algorithms	3	1	0	4	CS3201	Software Engineering	3	1	0	4
	CS3103	Automata Theory & Compiler Design	3	1	0	4	CS3202	Information Systems Security	3	1	0	4
	CS3104	Computer Networks	3	1	0	4	CS3203	Data Science and Machine Learning	3	0	0	3
	CS31XX	Program Elective – I	3	0	0	3	CS32XX	Program Elective – II	3	0	0	3
	*** **	Open Elective – II	3	0	0	3	*** **	Open Elective – III	3	0	0	3
	CS3130	Design & Analysis of Algorithms Lab	0	0	2	1	CS3230	Software Engineering Lab	0	0	2	1
	CS3131	Artificial Intelligence & Soft Computing Lab	0	0	2	1	CS3231	Information Systems Security Lab	0	0	2	1
	CS3132	Computer Networks lab	0	0	2	1	CS3270	Minor Project	0	0	6	3
		18	4	6	25			18	2	8	25	
Total Contact Hours (L + T + P) + OE		25+3=28				Total Contact Hours (L + T + P) + OE		25+3=28				
IV	SEVENTH SEMESTER						EIGHTH SEMESTER					
	CS41XX	Program Elective – III	3	0	0	3	CS4270	Major Project				12
	CS41XX	Program Elective – IV	3	0	0	3						
	CS41XX	Program Elective – V	3	0	0	3						
	CS41XX	Program Elective – VI	3	0	0	3						
	CS41XX	Program Elective – VII	3	0	0	3						
	CS4170	Industrial Training	0	0	2	1						
		15	0	2	16						12	
Total Contact Hours (L + T + P)		15+ 2 = 17										

### ADMISSIONS PROCESS

<https://admissions.jaipur.manipal.edu/>

You may also write to: admissions@jaipur.manipal.edu

### HOSTEL DETAILS

Please visit:

<https://jaipur.manipal.edu/muj/life-at-muj/hostel-facility.html>

### FAQs

<https://jaipur.manipal.edu/muj/admission/faqs.html>

### COUNSELLOR CONTACT DETAILS

Please visit our departments' webpage at:

<https://jaipur.manipal.edu/muj/admission/admission-team-contact-details.html>