

CRITERION 6

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6. FACILITIES AND TECHNICAL SUPPORT (80)

6.1 Adequate and well equipped laboratories, and technical manpower (30)

The department of Computer Science and Engineering has well established Laboratories catering to the needs of the students. The laboratories are spacious, innovatively designed and contain the latest computers. The Department possesses sufficient computer to students. These cater to undergraduate students of the department of Computer Science and Engineering.

- The laboratories are equipped with sufficient hardware and required software to run programme specific curriculum and off-programme curriculum as well as research.
- Each lab operates on a specific schedule as mentioned in the time table of the specific semester. On a general note, each laboratory course consists of two sessions (each forming three periods) every week.
- Each lab can accommodate a batch of 34 students.
- Laboratory sessions are conducted to ensure the attainment of laboratory outcomes which in turn contribute to the Programme Outcomes.
- Computer labs with sufficient number of computers with high speed internet connectivity of 1000 Mbps are available for students use.
- Usage of Open source software is promoted. All Microsoft products with MSDNAA, which is the Microsoft Academic Alliance program and consists of a bundle of Microsoft Software are available for academic purposes.
- Development environments like MS Visual Studio.NET, MS Office developer, etc. are actively used for development purposes by the department. IBM Rational Rose software development suite is used to familiarize the students with various software developmental models.

Details of system configuration

TECHNICAL STAFF SUPPORT AND LAB MAINTENANCE (2022 - 2023)

S. N O	NAME OF THE LABO RATORY	NO. OF STUD ENTS PER SETUP (BATH SIZE)	NAME OF THE IMPORTANT EQUIPMENT	WEEKLY UTILIZATION STATUS (ALL THE COURSES FOR WHICH THE LAB IS UTILIZED)			TECHNICAL MANPOWER SUPPORT		
				SEM	COURSE	WEEKL Y UTIIZA TION (PERIODS)	NAME OF THE TECHNICAL STAFF	DESIGNATIO N	QUALIFICATIO N
1.	Lab 1 (Exclusive)	35	Intel Core i5 – 12400 Processor Intel B660 Chipset 16GB Memory DDR4 Memory 512 GB M.2 SSD Hard Disk NVMe, USB Keyboard & Mouse 19.5” inch LED Monitor (E20-30) Integrated 10/100/1000 Gigabit Ethernet	ODD	CS1102A - Problem Solving and Python Programming Laboratory	12	Mrs.K.Lavanya	Lab Instructor	BE
				EVE N	CS1204A- Fundamentals of Computing Laboratory	09			
2.	Lab 2 (Exclusive)	34	HP Dx 2480 Desktop Intel Dual Core E2180 Processor @ 2.0 Ghz Intel G33 Express Chipset Motherboard 1 GB DDR2	ODD	CS1102A - Problem Solving and Python Programming Laboratory	12	Mr.S.Dhinesh	Lab Instructor	MCA

			SDRAM 160 GB SATA Hard Disk Drive Integrated 10/100/1000 Gigabit Ethernet Dell Keyboard /Dell USB Scroll Mouse 18.5” Lenovo LED Monitor SCANNER, Printer HP Scanjet G 2410	EVE N	CS1204A- Fundamentals of Computing Laboratory	09			
3.	Lab 3 & 4 (Exclusive)	64	Lenovo Desktop 71e Intel Pentium G630 @2.70Ghz 4 GB DDR4 RAM 500 GB SATA HDD Lenovo Keyboard Lenovo Optical Mouse 19.5” Lenovo LED Monitor	ODD	IT1302A- Object Oriented Programming Laboratory	18	Ms.C.Sugnaya	Lab Instructor	M.C.A
					IT8761- Security Laboratory	03			
					HX8001- Professional Readiness For Innovation, Employability And Entrepreneurshi p	04			
					Placement	04			
				EVE N	CS8811- Project Work	03			

					CS1602 - Compiler Design	03			
					CS1403A - Object Oriented Analysis and Design	02			
					Placement	02			
					Java Programming	02			
4	Lab – 5 (Exclusive)	34	Lenovo Think Centre neo 50s Gen 3 12thGen Intel® Core i5-12400 2.50GHz 8 GB DDR4 RAM 500 GB NVM Lenovo Keyboard Lenovo Mouse 19” Lenovo LED Monitor	ODD	CS1303A - Data Structures Laboratory	09	Mr.A.Daniel Prabhu	Lab Instructor	ITI
					CS1503A - Operating System Laboratory	09			
					Redhat Certified System Administrator	02			
					Placement	02			
					Data Science	02			
					Microsoft Azure Fundamentals	02			

					C#	02			
				EVE N	IT1402A - Database Management Systems Laboratory	18			
					CS8811 - Project Work	06			
					CS1403A - Object Oriented Analysis and Design	01			
					Data Science	02			
5.	Lab - 6 (Exclusive)	34	Lenovo Think Centre neo 50s Gen 3 12thGen Intel® Core i5-12400 2.50GHz 8 GB DDR4 RAM 500 GB NVM Lenovo Keyboard Lenovo Mouse 19" Lenovo LED Monitor	ODD	CS1303A - Data Structures Laboratory	09	Mrs.S.Parvathy.	Lab Instructor	B.C.A
					CS1503A - Operating System Laboratory	09			
					Redhat Certified System Administrator	02			
					Placement	02			

					Data Science	02			
					Microsoft Azure Fundamentals	02			
					C#	02			
				EVEN	CS1404A - Design and Analysis of Algorithms Laboratory	18			
					CS8811 Project Work	06			
					CS1403A - Object Oriented Analysis and Design	01			
6.	Lab - 7 (NETWORKING LABORATORY) (Exclusive)	34	Lenovo Desktop E73 Intel Core i3 @3.50Ghz, 8 GB DDR3 RAM, 500 GB SATA HDD, Lenovo Keyboard Lenovo Optical Mouse	ODD	IT8761 - Security Laboratory	06	Mr.A.Ramesh	Lab Instructor	I.T.I
					CS8581A - Network Laboratory	09			

			19.5" Lenovo LED Monitor		ECS1601 - Professional Readiness For Innovation, Employability And Entrepreneurship	04			
					Placement	04			
					Cisco Certified Network Associate	02			
					C#	02			
				EVEN	CS8811 - Project Work	03			
					CS1605 - Internet Programming Laboratory	03			
					ECS1601 - Professional Readiness for Innovation, Employability and Entrepreneurship	06			
					CCNA	02			

					Placement	10			
7.	Lab- 8 (Exclusive)	34	Lenovo Desktop M70eE Intel Dual Core @3.00Ghz 2 GB DDR3 RAM 500 , 320 GB SATA HDD Lenovo Keyboard Lenovo Optical Mouse 19.5” Lenovo LED Monitor Printer Canon LBP 6230 DN	ODD	IT8761 - Security Laboratory	06	Ms.B.Rubiha	Lab Instructor	ITI
					CS8581A - Network Laboratory	09			
					ECS1601 - Professional Readiness For Innovation, Employability And Entrepreneurshi p	04			
					Placement	04			
					CCNA	02			
					C#	02			
				EVE N	CS8811 - Project Work	03			
					CS1605 - Security Laboratory	03			

					ECS1601 - Professional Readiness for Innovation, Employability and Entrepreneurship	06			
					Placement	10			
8.	Lab 9, 10 & 11 (Exclusive)	72	<p>Lenovo Desktop S510 Intel Core I5-6400 6th GEN Processor @2.71Ghz 8 GB DDR4 RAM 1 TB SATA HDD Lenovo Keyboard Lenovo Optical Mouse 19.5" Lenovo LED Monitor</p> <p>Printer CANON LP2900 PROJECTOR PAS SETUP</p>	ODD	CS8711 - Cloud Computing Laboratory	09	Mrs. S. Geetha	Lab Instructor	BCA
					ECS1601 - Professional Readiness For Innovation, Employability And Entrepreneur Ship	04			
					CS2301A - Project Work phase – I	10			
					CS2106A - Data Structure Laboratory	04			
					Placement	04			
					Oracle Java Certification	02			

				EVEN					
					C#	02			
					CS8811 - Project Work	06			
					CS1605 - Internet Programming Laboratory	15			
					CS1606 - Security Laboratory	15			
					ECS1601 - Professional Readiness for Innovation, Employability and Entrepreneurship	03			
9.	Lab 12 (Exclusive)	30	Lenovo neo 50s Gen 3 12th Generation Intel Core i5 12400,2.50Ghz 8GB DDR4 RAM, 500 GB NVM ,Lenovo	ODD	AD1302A-Data Science Laboratory	03	Mr.I.Ziaudeen	Lab Instructor	ITI (Electronics)
					IT1302A - Object Oriented Programming Laboratory	03			

			19" inch LED Monitor, Lenovo Keyboard, Lenovo Mouse		CS1303A - Data Structures Laboratory	03			
					Microsoft Python Certification	02			
					Internet Of Things	04			
					Oracle DBA	02			
			UpSquared Board (Celeron N3350, 2 GB RAM / 32 GB EMMC) Power Supply 5v@6A, US Power Cord, 16 USB Memory stick, Micro USB 3.0 Serial cable, Gross LCD RGB Backlight, Gross Rotary Angle Sensor, Gross Light Sensor V1.2, Gross Button, Gross Temperature/Humidity Sensor, Gross Green LED, WiFi Modules (802.11), Intel Dual Band Wireless- AC 3165, BT 4-2, M-2 2230 with Antenna 2.4 GHZ,	EVEN	AD1403A - Artificial Intelligence Laboratory	03			
					AD1404A - Data Analytics Laboratory	03			
					IT1402A - Database Management Systems Laboratory	03			
					Internet of Things	04			
					Placement	02			

			PCB Pidoll Ant Coax cable to IpEx MHE4, 1.13L.100mm (upsquared), 18.5 Dell LED Monitor, Dlink AC1200 WiFi Router, Dell USB Keyboard,		Microsoft Python Certification	02			
					Redhat Certified System Administrator	02			
					Oracle DBA	02			
					Microsoft Azure Fundamentals	02			

6.2 Additional facilities created for improving the quality of learning experience in laboratories (25)

S. NO.	FACILITY NAME	DETAILS	REASON(S) FOR CREATING FACILITY	UTILIZATION	AREAS IN WHICH STUDENTS ARE EXPECTED TO HAVE ENHANCED LEARNING	RELEVANCE TO POS/PSOS
1.	Artificial laboratory	Lenovo neo 50s Gen 3 12 th Generation Intel Core i5 12400,2.50Ghz 8GB DDR4 RAM, 500 GB NVM, Lenovo 19" inch LED Monitor, Lenovo Keyboard, Lenovo Mouse (MATLAB Campus License)	To acquire knowledge in latest Technology	3 hours per week for a batch of 30 students for second and third years	MATLAB	PO1, PO5, PO12

	Graphics Card	ZOTAC GT730 Graphics Card	Creating Animation Graphics	During Lab hours	<ul style="list-style-type: none"> • IOT • AI • Python Gaming Program 	
	Audio and Visual Class Room	Projector, Speaker and head set covering good range	Visual Teaching	Playing NPTEL videos, Seminar	Make Communication Quicker and Simpler	
2.	Internet	1 Gbps internet upgraded	To provide internet facility for all students	Inside College and hostel Campus	<ul style="list-style-type: none"> • Placement training • Placement Drive • Global Certificate Courses • To Improve Communication Skill • MOOC Courses 	PO1, PO5, PO12
3.	Global Certification Course(Coding Club)	Exam 98-381 Microsoft Python Certification	To acquire Knowledge in Python Programming	Weekly Two hours	Python Programming	PO1, PO5, PO12
4.	Global Certification Course(open Source Club)	Exam 98-349 Windows Operating System Fundamentals	To acquire Knowledge in Windows Operating System	Weekly Two hours	Windows 10 Administration, VMWare Workstation	PO1, PO5, PO12

5.	Global Certification Course(Cloud Clinic Club)	AZ-900 Microsoft Azure Fundamentals	To acquire Knowledge in Cloud	Weekly Two hours	Basic Cloud Administration, Microsoft Azure-login	PO1, PO5, PO12
6.	Global Certification Course(open Source Club)	EX200-Red Hat Certified System Administrator	To acquire Knowledge in Linux Administration	Weekly Two hours	VMWare Workstation, Linux Administration	PO1, PO5, PO12
7.	Global Certification Course(Database Club)	IZO-082 Oracle DBA	To acquire Knowledge in Database	Weekly Two hours	VMware, CentOS 7, Oracle 12c	PO1, PO5, PO12
8.	Global Certification Course(Coding Club)	IZO-808 Oracle Java certification	To acquire Knowledge in Java Programming	Weekly Two hours	Java Programming	PO1, PO5, PO12

6.3 Laboratories: Maintenance and overall ambiance (10)

- The department has over all of 371 computers in 12 labs.
- Student and faculty login registers are maintained by the lab instructor of each bay.
- The equipment is checked regularly at the end of every semester.
- Separate stock registers are maintained in each lab.
- The general software and hardware issues are solved by the lab instructor.
- The arrangements, setting and environment of the laboratory encourage the students to perform their practical work carefully in a congenial environment.

- Blowers are used to blow/remove dust in the computer.
- Internet and its usages are maintained by a team of System Administrators, Instructors.
- They maintain the daily bandwidth, usage, bandwidth allocation, sharing etc.
- Annual Maintenance Contract (AMC) is given for all UPS in Computer Laboratories.
- The complex issues of the system are forwarded to the Server Room.
- The Lab Assistants will replace the non-working systems and equipment by the new machines through a purchase request to the purchase department.

Overall Ambience

- The laboratories are designed with proper ventilations sufficient entry and exit gate.
- Effective lighting system is available at every corner of the laboratories.
- In case of power failure power generator is available.
- Cupboards are provided for students to place their belongings.
- Each lab is equipped with white/black board, projectors, computer, Internet, CCTV camera and such other amenities.
- The laboratories are facilitated with centralized air conditioning systems.
- The computers in all the laboratories are connected with Uninterruptible Power Supply [UPS].
- Separate rooms are allotted for maintaining UPS and batteries

6.4 Project laboratories (5)

DEGREE	SYSTEM CONFIGURATION/ SOFTWARE	NO. OF BATCHES/NO. OF STUDENTS	UTILIZATION IN HOURS
B.E.(CSE) CS8811- Project work	<p>Lenovo Desktop S510 Intel Core I5-6400 6th GEN Processor @2.71Ghz 8 GB DDR4 RAM 1 TB SATA HDD Lenovo Keyboard Lenovo Optical Mouse 19.5” Lenovo LED Monitor</p> <p>SOFTWARES Microsoft Campus, Seqrite Antivirus, Vmware EXSi, Oracle 11g, Adobe CS5 Bundle Pack, Linux, Turbo C++ 5.5, JDK 8, PEARL, Rapid Miner, Lex/Yacc, MYSQL, SQL Server, Management Studio, Apache, WINDOWS SERVER 2008 R2, WINDOWS SERVER 2003, WIN 7 SP1, MSOFFICE, Visual studio, SQL, Visual Paradigm, Dream Weaver cs5, Photoshop cs5, Flash 8, Oracle, Rational Suite, JAVA, C++ Compiler,</p>	60/165	(2 days/week)

	MySQL, DB2, NS2, Glomosim, OPNET, Eclipse IDE and JUnit, ArgoUML, Apache Server, LEX and YACC, GnuPG, KF Sensor, Snort, Net Stumbler, Open Nebula, WEKA, Rapid Miner, DB Miner, MATLAB, SCILAB, AUTOCAD		
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6.5 Safety Measures in Laboratories (10)

NAME OF THE LABORATORY	SAFETY MEASURES
Computer Laboratory-1 to 12	<ul style="list-style-type: none"> • First Aid boxes with sufficient general drugs are available to the students and faculty members, for emergency use. • The codes of conduct that are to be followed by the students inside the laboratory are displayed in the notice boards. • Constant periodic review of the equipment in the laboratory is done by electricians. • Fire extinguishers are kept in the laboratory