

## **Career Option for Engineering Graduates in IT and CSE Branches**

Indira Gandhi Delhi Technical University for Women (IGDTUW) offers 4 year full time programs in B.Tech (CSE), B.Tech (ECE), B.Tech (MAE) and B.Tech (IT). Apart from this four PG programs in M.Tech, Mobile Pervasive Computing (MPC) and M.Tech, Information Security Management (ISM), M.Tech (VLSI Design) and M.Tech (Robotics & Automation) are also being offered alongwith Ph.D programs.

India's information technology (IT) sector is expected to grow 11% per annum and triple its current annual revenue to reach US\$350 billion by FY 2025, as per National Association of Software and Services Companies (NASSCOM). While this growth is expected to further boost employment opportunities in the sector in the future, IT graduates today, have many careers to choose from. Apart from the private and public sector opportunities that graduates can explore in India as well as overseas, they also have the option to venture into the business and academic world.

The IT sector offers three major upcoming jobs options in the following areas:

### **CLOUD COMPUTING**

Cloud computing involves storing data on the internet without needing any physical storage drive. Since most organisations are looking to upgrade from their servers to the cloud, jobs in the cloud computing sector are multiplying. Fresh graduates or IT professionals who wish to make a career in this field can work as Cloud Architects, Cloud Engineers, Cloud Consultants, etc.

“Enterprises have to leverage the power of software to reimagine, redefine and rewrite the way their current data, applications and infrastructure are managed. This has brought back the focus on hiring and nurturing talent with core software engineering skills like cloud computing,” says the head, global services, cloud and infrastructure services, Infosys.

**Sectors that hire:** Telecom, social media, e-commerce and banking.

### **BIG DATA ANALYSIS**

Big data analytics is the process of examining large amounts of unstructured data to identify not-so-obvious patterns and correlations, market trends, customer choices and such statistics that can provide insightful analysis to businesses. The students proficient in Big Data

Analysis can be hired as Business Analyst, Risk Analyst and Search Engine Designers.

For this, a candidate must learn various programming languages and should try and implement them in small projects on sentiments analysis, Data mining and Data Warehousing, etc.

**Sectors that hire:** Finance and Insurance, Web Design, Business Intelligence, e-commerce, m-commerce.

## **ETHICAL HACKING**

Ethical hackers are employed to find loopholes in a company's security system and save it from hackers. Ethical hackers perform vulnerability assessments and perform vulnerability and penetration test to identify and report the weak zones of a company's software and the potential hacking risks to keep the system healthy.

“Cyber crime, data breach, email frauds and website defacement are common issues organisations face. Banks, IT companies and government bodies are most likely to fall prey to hackers. Since only a few people are aware of ethical hacking as a career in our country, there are a number of jobs,” says, co-founder and director, SecRoot Security Solutions Pvt. Ltd.

Professionals in this field can work as security researchers, secure code reviewers, information security consultants, information security analysts, cyber security professionals, network security auditors and digital forensics analysts.

**Sectors that hire:** Banking, IT, e-commerce, m-commerce and social media.

In India, the latest areas of research are big data analysis, cloud computing, web security, Computer forensics, data mining, business intelligence, 4G, mobile computing, etc. One needs to have good analytical, logical and programming skills in addition to good communication skills to make a career in this field.

It is important for students to have a strong inclination towards computer architecture and programming languages. Additionally, they should have good domain knowledge. The IT industry has a global presence and thus, offers lucrative choices to professionals across the world. Courses in IT are industry-specific and include a theoretical as well as practical approach.

Hence, it is important for students to explore various domains before deciding on the specialisation that suits them best.

Information Technology (IT) as a discipline has emerged from Computer Science and Engineering (CSE). The field lays emphasis on courses that cater to the needs of the IT Industry. These include web technology, database engineering, software engineering, cloud computing, mobile application development, computer security, human-computer interactions, among others.

Indira Gandhi Delhi Technical University for Women (IGDTUW) offers two full time M.Tech Programs in M.Tech (Mobile and Pervasive Computing) and M.Tech (Information Security Management) and M.Tech (Information Communication Technology) in part time mode.

A postgraduate (PG) degree in IT requires the integrated study of information science and technology with computer science subjects involving both software and hardware fields.

### **Areas of Specialization**

Students can also opt for a 3 year Master of Computer Application (MCA) program other than M.Tech (Mobile and Pervasive Computing) and M.Tech (Information Security Management).

All the aforementioned degrees provide an overview of advanced courses in networks, operating systems, software engineering, databases, object oriented programming, information and communication technology, big data analysis, web technology, cloud computing, mobile application development, Mobile Database, Mobile Operating System.

Among the many sought after areas of specializations that students consider are artificial intelligence, software testing and project management, data mining/business intelligence, Mobile Computing, Cyber Security, Mobile programming and Architecture, Internet of things (IoT) and Wireless Sensor Networks.