

# NIIT

“ I got placed in Sumtotal systems through NIIT placements. I joined NIIT for a diploma course (GNIIT). This course is added benefit to CSE students who aspire to explore about programming languages. The structure of this course helped me to identify my skills and work towards it. I would like to thank Sandhya ma'am, Shyamal ma'am and all the staff members of NIIT for their support.

– G. Grace Kamalini (Company: Sumtotal)

“

Felt overwhelmed to be a part of NIIT. It is the place which helps you step in the corporate world equipped with the best skills and knowledge. The GNIIT Course gives you details of what is happening in the tech world and helps you in sharpening your skills so that you can combat with the world outside easily, which helps in growing your mind set in an optimistic way. NIIT helps you get into the best companies. They helped me into getting into NIELSEN which is the best market research company. Special thanks the placement co-ordinator at NIIT. I got a good package of 3.5 Lakhs at the start of my career, which is very good.

– Mohd Shaaz Qureshi (Company: Nielsen India Pvt. Ltd.)

“ All the faculty are very understanding and helpful. Very good and unforgettable learning experience in NIIT. All the faculty are very knowledgeable. I like the practical classes as it is taught and explained in detail. Thank you so much for your time and efforts.

– Sumit (Company: Acs Infotech Pvt. Ltd.)

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# NIIT

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## BUILD YOUR CAREER, WHILE YOU STUDY FOR I.T.



# gNiiT

Software Engineering

### YOUR DOOR TOWARDS A SUCCESSFUL CAREER IN I.T.

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## INTRODUCTION

For over 36+ years, NIIT has taken pride in creating career opportunities for students from different walks of life. It has trained millions of students in more than 40 countries, and NIIT's expertise in content development, training delivery, and education process management makes it the most preferred training partner. The company ranks among the world's leading training companies owing to its vast, yet comprehensive array of talent development programs. A world-leading, technology-driven, skill development organisation. And the first choice of smart students and professionals. At NIIT, we believe that our actions speak louder than our words.

**Present in 40+ countries**

**35 Million Learners**

Learning solutions for individuals, enterprises, schools and colleges.





## INDIA THE IT HUB

In 2018, the Indian IT industry appears to be on the cusp of profound change. The global information technology industry surpassed \$4.5 trillion in 2017, according to the research consultancy IDC. At 3.9 million, IT is the largest private sector employer in India, with a quarter of the share in total services and merchandise exports. At \$154 billion, it has 3 sub-sectors with revenues of over \$20 billion. The Indian IT sector also boasts of 3.5 million new jobs since 2001, 6 lakh new jobs in the last 3 years and an additional 2.5 - 3 million new jobs by 2025. An entry-level and experienced workforce in IT is already attracting 50-60% more salaries than regular professionals from other industries.

IT is running in the veins of today's India. Even those who don't study about it, are living and breathing in an atmosphere powered by IT. With 30% of the tech talent in Business Process Management and technical career tracks in leading



companies, 50% of these employees are already trained in digital transformation technologies. New job roles are getting created in Cyber Security, Mobile App Development, New User Interfaces, Social Networking Sites, Data Sciences, Platform Engineering, etc. And new skills are being demanded in areas like Big Data Analytics, Cloud & Cyber Security Services, IT, Service Delivery Automation, Robotics, AI/Machine Learning/NLP, etc.

### PRESENT

Global IT/ITES market reached US \$1.2 Trillion in 2017-18

### 2020

Start-ups in technology to reach 50,000 and  
Global Business Process Management spending  
will reach US \$233 billion by 2020

### 2025

The Indian software product industry to reach  
US \$100 billion by 2025

## OPPORTUNITIES KNOCKING AT THE DOOR

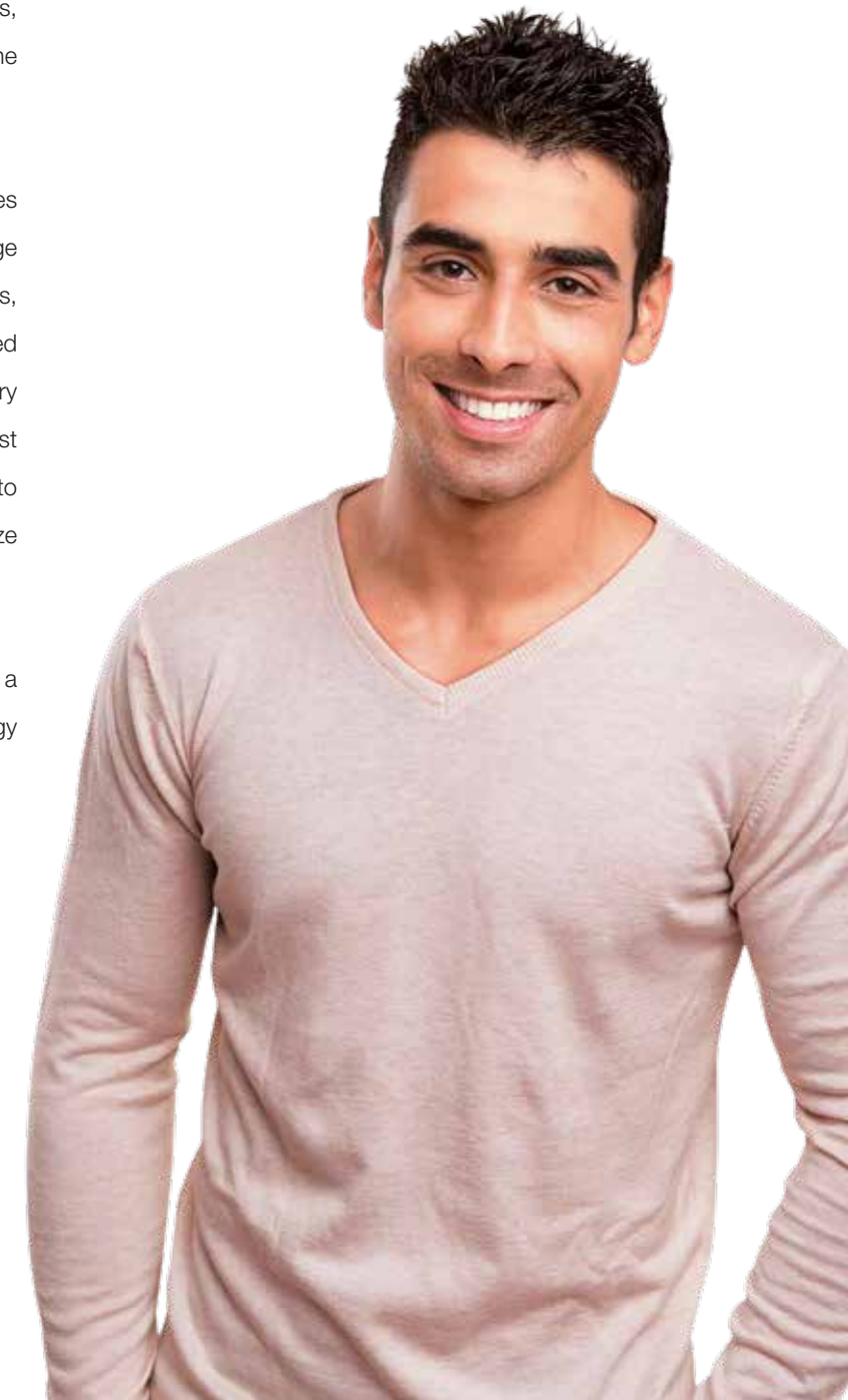
More than 1 lakh new jobs are created annually by the tech start-up sector, with 60 thousand direct jobs in the e-commerce sector. In Digital India, there is 2X multiplier impact on job creation. Up-to-date tech skills are imperative across all job roles, with all future jobs across sectors ready to demand advanced tech skills.

## GNIIT

Designed to be pursued along with graduation, GNIIT prepares college students for a successful entry into the professional world by making them job-ready, the day they graduate. This program can be pursued as a Dual-Qualification program along with a graduation degree. In addition, GNIIT offers a perfect blend of skills training that includes core domain skills, professional grooming and new age skills, complimenting the academic program the student is pursuing.

The Industry-endorsed Curriculum of GNIIT Program enables students to acquire necessary skills and aspire for new age jobs. Furthermore, well-structured communication & soft skills, combined with Professional Practice helps create well-rounded professionals. The curriculum lays emphasis on industry specific competencies that help students stand out in the most competitive environment. The program is also mapped to global technology certifications that helps the student seize global career opportunities.

The GNIIT program focuses on developing the student for a role as a Software Developer in the Java technology framework.



## GNIIT ARCHITECTURE

The GNIIT Programme Architecture has been aligned with the college academic semester system to help college students pursue the course along with graduation. GNIIT has 12-15 week 'Terms' as units (similar to college semesters of 18-20 weeks). The programme will consist of 7 such Terms. Since GNIIT's Terms are aligned to college semesters, students have the flexibility to take a break between Terms to accommodate their college exams. Moreover, the GNIIT programme is

compliant to NASSCOM Qualification Pack-Level 7 and fulfills the NSQF (National Skills Qualifications Framework) regulation that is mapped to software development job roles. This NSQF compliance ensures that any certificate received by the students is recognised by the government and certifies qualification with international comparability that supports international mobility for the students.

## COURSE CONTENTS AND DURATION

	Professional Practice (PP)		
YEAR 3	Term 7	<ul style="list-style-type: none"> <li>Developing and Deploying Cloud Applications Using Google App Engine</li> <li>Capstone Project II + Professional Skills II</li> </ul>	12 weeks
	Term 6	<ul style="list-style-type: none"> <li>Developing Apps for Touch &amp; Mobile Devices</li> <li>Capstone Project I</li> </ul>	12 weeks
YEAR 2	Term 5	<ul style="list-style-type: none"> <li>Data Structures and Algorithms</li> <li>Implementing JSF, Hibernate, and Spring in Java EE Applications</li> <li>Advance Excel tools and techniques for analysing data (E-Learning)</li> </ul>	14 weeks
	Term 4	<ul style="list-style-type: none"> <li>Responsive Web Design Using HTML5 &amp; jQuery</li> <li>Developing Mobile Apps for the Android Platform</li> </ul>	15 weeks
YEAR 1	Term 3	<ul style="list-style-type: none"> <li>HTML5 Programming</li> <li>Developing Web Applications Using Servlets &amp; JSP</li> </ul>	13 weeks
	Term 2	<ul style="list-style-type: none"> <li>RDBMS &amp; T-SQL</li> <li>Professional Skills I</li> <li>Working Smart with MS Office and the Internet (E-Learning)</li> </ul>	12 weeks
	Term 1	<ul style="list-style-type: none"> <li>Logic Building and Effective Problem Solving</li> <li>OOPs with C++</li> <li>Programming in Java</li> </ul>	16 weeks
@ COLLEGE	@ NIIT		

## COURSE DESCRIPTORS

### Term 1: 16 Weeks

#### Logic Building and Effective Problem Solving

Programming is not just about learning different programming languages. The foundation of any type of programming is the ability to apply the appropriate logic and technique to solve a given problem. In any programming language, the basic techniques and logic remain the same. The only thing that varies is the way in which you represent the logic.

This course focuses on strengthening and enhancing your logic building and problem-solving skills using pseudocode and flowcharting techniques.

#### Object-Oriented Programming Using C++ (OOPS using C++)

Object-oriented concepts form the base of all modern programming languages. Understanding the basic concepts of object-orientation helps a developer to use various modern-day programming languages, more effectively.

C++ is an object-oriented programming language that intends to be a simple, modern, and general-purpose programming language for application development.

#### Programming in Java

Java technology is the foundation for virtually every type of networked application. It is the global standard for developing and delivering mobile applications, games, smart cards, and practically any other digital device. It powers state-of-the-art programs, including set-top boxes, printers, webcams, car navigation systems, and parking payment stations. Therefore, IT professionals aspiring to become Java developers need to be equipped with the semantic skills to develop such applications.

This course is the first step for developing such applications. It provides an introduction to object-oriented concepts and its implementation in Java technology programs. In addition, it covers syntax and semantics of the Java programming language. Further, it covers the implementation of various concepts, such as exception handling, file manipulation, threads, collections, input/output streams, localisation, and database connectivity.

### Term 2: 12 Weeks

#### RDBMS Essentials & T SQL Programming

The RDBMS Essentials & T-SQL Programming course provides a learner the necessary skills to query and manage databases using SQL Server. The course starts with an introduction to the client-server architecture and an overview of SQL Server. In addition, it familiarises the students with Structured Query Language (SQL) and builds on the complexity of query handling in SQL Server with every progressing session.

#### Professional Skills I

The first step in starting a career is to create a positive impression. Dressing for success is essential to create a first impression, but this needs to be substantiated with an articulate and logical verbal style. In this course, a learner will practice and develop speaking skills to present themselves to others, apply techniques for active listening, maintain a conversation, and learn to express thoughts and ideas in a logical & sequenced manner. In addition, the learner will be able to overcome public speaking challenges, prepare speeches, and give presentations.





## COURSE DESCRIPTORS

### Term 3: 13 Weeks

#### HTML5 Programming

The world is changing rapidly, and the new generation of computing devices offers us an opportunity to conceive products and services that might never have been possible before. Mobile devices are increasingly being used for browsing the Internet. These devices are available in a wide range of screen sizes. Therefore, website designing is also changing with the introduction of new paradigms having an emphasis on responsive design and rich user experience (UX). In such a situation, when a business is opting for a solution through a mobile device, it becomes very important that the solution works flawlessly on all major mobile devices. With HTML5, pages are leaner and more semantic. The fluid grid design and the CSS3 designs can flex and adapt for any screen size. The advent of HTML5 has simplified the way apps and Web pages with rich content can be quickly created and deployed.

#### Developing Web Applications Using Servlets & JSP

Every organisation today needs a global presence in order to expand and make their products and services available. This represents a dire need for the design and development of Web applications. Web applications have revolutionised the way business is conducted, or day-to-day tasks are performed. These applications enable organisations and individuals to share and access information from anywhere, anytime. Therefore, the tools and technologies required to create interactive Web applications with ease are the demand of the software industry. This course aims at imparting expertise in Web application development using Web components of Java EE, such as servlets and JavaServer Pages (JSP). In this course, a learner will learn to create servlets, handle servlet life cycle events, perform inter-servlet communication, and implement advanced servlet techniques, such as threading and filtering. In addition, the learner will learn to build JSP applications, create custom tag libraries, and implement EL and JSTL.

### Term 4: 15 Weeks

#### Responsive Web Design Using HTML5 & JQuery

Nowadays, advancement in technology has undoubtedly changed the way users access online information. People are frequently accessing various websites through multiple devices, such as Personal Computers (PCs), laptops, tablets, and smartphones. To meet the demand for accessing online information using a variety of devices & form factors, Web designers are adapting new designing strategies to develop websites. Instead of designing multiple versions of a website so that it supports every device, they now create a single website that will adjust itself according to the device on which it is accessed. Such websites can be created using the Responsive Web Design (RWD) technique. This technique enables a single website to respond to all devices on which it is viewed. In this course, the students will learn to create responsive websites using HTML5, CSS3, and JQuery.

#### Developing Mobile Apps for the Android Platform

Android, backed by Google Inc., is the most popular open-source mobile device platform, which in turn is powered by the Linux operating system. Android offers a simple yet powerful application development framework (C++/Java and XML) and open access to APIs to build richer mobile applications. Applications can range from enhancing the user experience to productivity and entertainment. Considering the growing popularity and usability of the Android platform, there is a dire need of skilled application developers in the industry. This course is meant for the segment that is keen on gaining skills on application development on the Android platform. The course focuses on application-level APIs and imparts in-depth skills to develop user and data-centric mobile applications and utilities on the Android platform. It also imparts skills in Android application development, including working with graphics, multimedia, connectivity, and location-based services.

## COURSE DESCRIPTORS

### Term 5: 14 Weeks

#### Data Structures and Algorithms

Computer science is a field of study that solves a variety of problems by using computers. To solve a given problem by using computers, you need to design an algorithm for the same. Multiple algorithms can be designed to solve a particular problem. An algorithm that provides the maximum efficiency should be used for solving the problem. The efficiency of an algorithm can be improved by using an appropriate data structure. Data structures help in creating programs that are simple, reusable, and easy to maintain.

#### Implementing JSF, Hibernate, and Spring in Java EE Applications

Web applications enable organisations and individuals to share and access information from anywhere, anytime. For an application to be successful, its interface needs to be attractive and easy to use. Java Server Faces (JSF) is a framework that allows Web developers to create attractive and easy-to-use UI. The course enables the learner to create attractive and easy-to-use UI. In addition, it enables the learner to build applications by providing database-independent data persistence and creating loosely-coupled Web components.

### Term 6: 12 Weeks

#### Developing Apps for Touch & Mobile Devices

Mobile design is a field that is changing rapidly and unexpectedly. The popularity of apps for the converged device market (smartphones and wireless handhelds such as tablets) has been growing exponentially in the last few years. However, developing apps for touch and mobile devices have several challenges associated with it. This is because of the differences in the platforms, form factors, and other features of these devices. This course enables a learner to understand various best practices to build rich mobile experiences for touch and mobile devices. Furthermore, they will learn how to develop apps that are written once using common Web technologies such as HTML and JavaScript and then ported to different platforms such as Android, Windows, Windows Phone, and iOS. In this course, they will learn to develop apps that utilize various device features such as sensors, camera, and GPS.

### Capstone Project

Concepts need to be practiced in real life to ensure that learning is effective. Software development has one of the steepest learning curves. Nothing will help you retain the learned concepts more than having practical experience. This course helps learners demonstrate the skills acquired in the program by requiring them to develop applications for the Java platform, whose requirements are given in the form of a case study.

### Term 7: 12 Weeks

#### Developing and Deploying Cloud Applications Using Google App Engine

Advanced technologies have revolutionised the way apps are used to accomplish day-to-day activities. In today's scenario, different types of devices, such as tablets and smartphones, with reasonably good processing power and storage capabilities, are available. Therefore, users want to be able to access their applications from a variety of devices. Google App Engine is a Platform as a Service (PaaS) offering that lets you build and run applications on Google's infrastructure. App Engine applications are easy to build, easy to maintain, and easy to scale as your traffic and data storage needs change. This course enables a learner to design, develop, and deploy cloud applications on the Google App Engine. This course covers utilizing various Google App Engine services and APIs to build robust & scalable Cloud Applications.

#### CAPSTONE PROJECT II + PROFESSIONAL SKILL II Professional Practice\*

Professional Practice during GNIIT course exposes our students to work in a real industry environment. It is an internship that consolidates the student's knowledge into applied skill-sets. Over 1000 reputed organisations are enlisted as NIIT partners in providing professional practice to GNIIT students. Even better, students get to 'earn-while-they-learn' during their stint at the professional practice site.

Typically a student gets a stipend from the organisation that recruits them for a year of professional practice. This helps our students to recover anywhere from 50% to 70% of the program fees even before they complete their studies. Our students get a chance to take charge of their career even before it begins.

## KEY FEATURES OF GNIIT

### Professional Practice

The GNIIT programme guarantees hands-on industry experience with a one year assured Professional Practice at the end of the programme.

#### Advantage of Professional Practice (PP)



**Work in a Mentored Environment**



**Get Trained by the Industry in the Industry**



**Implement learnt concepts practically**



**EARN while you LEARN - Paid Internship during the One Year of PP**



**Recover full/part of the Fee Invested**



## KEY FEATURES OF GNIIT

### Overall Development

The GNIIT course does not only hone the academic skills of our students but also grants them complete industrial grooming that makes them ready to face any challenges at the job front. With our focus on developing communication and professional skills, we aim to build a strong foundation for our students.

### Flexibility

The beauty of this course is that it is aligned to the college semester system and is pursued along with any stream of college education. Our terms are spread out in such a manner that it becomes easy for students to take multiple breaks for their college examinations and manage both their college studies and their GNIIT course parallelly. This course also provides an easy EMI facility which lifts the pressure of one-time fee payment.

### Expert Faculty

We have a pool of recognized and talented practitioners experienced in related fields interacting with our students. Apart from guiding students on concepts and its implementation, these expert trainers teach the usage of emerging technology by posing challenges to students to take up daily and weekly, which help them develop their projects better. Our centers are also equipped with the latest software that keeps our students up-to-date with the industry.

### NASSCOM Certified

The programme encompasses “7” out of “7” National Occupational Standards (NOS) of “SSC/Q0501 - Software Developer” Qualification Pack issued by “IT-ITeS Sector Skill Council NASSCOM”.

The NSQF (National Skills Qualifications Framework) level of the GNIIT programme is 7 and is certified by NASSCOM.





## ADMISSION PROCESS

### Fresh Admissions – Program Eligibility

#### Pre-requisites for Admission to GNIIT

- Class 10th  $\geq 60\%$  and Class 12th  $\geq 55\%$
- Working knowledge of MS-Office is preferred

#### Selection Criteria for GNIIT





- An Online English test will be conducted for every candidate for selection into GNIIT Series of programs
- The questions will be as per the following format:

Category	Type
<b>Listening Comprehension</b> (Questions based on Audio)	Photograph Interpretation Question-Response Short conversations Short Talks
<b>Reading Comprehension</b>	Comprehension Contextual Appropriateness Tenses Subject Verb Agreement Sentence Structures Vocabulary



## ROLES AND PLACEMENT

### A partial list of Companies where GNIIT students are placed:

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<b>TCS</b>	<b>HCL Technologies</b>	<b>Accenture</b>	<b>Infosys</b>
<b>BHEL</b>	<b>Amazon</b>	<b>Wipro</b>	<b>Conduent</b>
<b>CSC</b>	<b>Pinkerton</b>	<b>IOCL</b>	<b>ATS</b>
<b>Concentrix (IBM)</b>	<b>Genpact</b>	<b>Capgemini</b>	

### OUR STUDENTS WORK AS...

- Testing & QA
- Trainee Engineer
- Web Designer
- Database Developer
- IT Tech Support
- Application Developer
- Software Developer
- Research Analyst
- Web Developer
- Data Analyst & MIS
- Front-End Developer

## ROLES IN IT

### Web Developer

As a web developer, we make it easy for businesses to present products and services to a wide audience by creating websites that serve a purpose or cater to a problem. We identify who uses the websites and then design the same to appeal to their sentiments. From constructing the layout to creating a visually interesting home page and user-friendly design, we do all that to add emotional appeal to a technically sound website with interactive capabilities using the Java programming language.

**KEY SKILLS** - JavaScript, HTML5, CSS3, Angular JS, and Test Driven Development

**INDUSTRIES** - IT / ITES, e-commerce, Product-based companies, etc.

### Application Developer

As application developers, we do the testing for you before the apps go in your hands, computers and mobile systems. We apply our knowledge of coding languages to create something new and user-friendly. When it reaches you, it is free from bugs that could have hampered the experience.

**KEY SKILLS** - Java, SQL, JavaScript, Hibernate, etc.

**INDUSTRIES** - IT / ITES, E-commerce, Mobile, etc

## ROLES IN IT

### Front-end Developer

A good front-end developer creates interactions and user experiences with scripts embedded in HTML sites, and we do exactly the same. What you see is not just a website, but an experience rendered by all that work.

**KEY SKILLS** - Java, JavaScript, Angular JS, HTML5 and CSS3, etc.

**INDUSTRIES** - IT / ITES, E-commerce, Mobile, etc.

### Software Developer

As a Software Developer, we analyse users' needs and then design, test, and develop software to meet those needs. Our job is to make sure that nothing comes between the user and the ease with which he is able to operate the software.

**KEY SKILLS** - Java, JavaScript, Angular JS, Node JS, HTML5 and CSS3, etc.

**INDUSTRIES** - IT / ITES, E-commerce, Mobile, etc.

