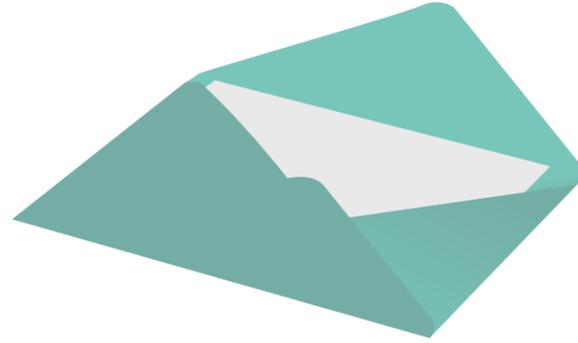


If undelivered, please return to:



1800 425 0405

## A PROGRAM THAT LAYS A GREAT CAREER FOUNDATION FOR ENGINEERS

In today's highly competitive job market, employers expect industry-ready graduates to take on desired roles and start performing from day one. CADD Centre now brings you an industry-ready course.



- Placement Services across India
- Salary minimum of ₹ 2 Lakhs per annum
- Avail skill loan upto 1.5 Lakhs\*



960 hours 6 Months Chennai | Coimbatore Salem | Trichy

Available only at Tamil Nadu



Scan QR Code to Know More



Monthly Newsletter  
**CADDZOOM**  
Your CAD / CAM Highway



Scan and Read it Online

IN THIS ISSUE

PAGE 02



5G in Space

PAGE 03



Quality Assurance Methods

PAGE 04



JST - Job Secured Training Program

Celebrating 30 years of Training Excellence



## Course on HVAC AND JOB Opportunities



HVAC refers to the technology that deals with heating, ventilation and air conditioning for indoors and vehicles. The branch of HVAC system design is a sub-discipline of mechanical engineering which is based on the principles of thermodynamics, heat transfer and fluid mechanics.

### Heating and Air Conditioning Training

A few years ago, most of the heating, ventilating and air conditioning technicians received on-the-job training. However, with the rapid advancement in the technology, the technicians are now offered training through classroom study, internships and apprenticeships.

Candidates who receive these training learn how to install, repair and maintain ventilation, heating, refrigeration and air conditioning systems. While some comprehensive training programs include all of these systems, other may focus only on some specific areas.

### Highlights of the HVAC training

- ❖ It is usually a combination of classwork and hands-on training.
- ❖ Students may explore topics like electrical design, commercial heating, circuitry and air conditioning systems.
- ❖ They may also learn principles of system design and refrigeration.

HVAC can provide some amazing job opportunities for the candidates who wish to

make a career in this field. HVAC is a thriving career and gives a great job satisfaction for people who are interested in this field.

Some of the opportunities in HVAC are:

- HVAC Service Technicians
- HVAC Mechanical Engineers
- Project Managers
- HVAC Service Managers
- Sales and Administrative Coordinators
- HVAC Control Technicians
- Maintenance Supervisors
- Quality Assurance Specialists
- Executive Level Professional Managers

HVAC job opportunities are highly demanding and lucrative as people are making comfort as their priority. Engineering candidates can easily grab these job roles soon after completing a short-term or a long-term course in HVAC. The best part of the HVAC profession is, it adds comfort to people's lives.

Rapid advancement in the technology increased the need for more professionals in this field. The HVAC technicians play a vital role during the installing and servicing the systems. These professionals control the air temperature and its quality in a building.

Aspiring candidates who wish to make a career in the field of HVAC can take a course through certification, diploma, associate's or bachelor's degree programs. Different levels of HVAC courses have similar curriculum with course durations ranging from 6 months to 2 years.

The HVAC course covers topics such that:

- Electrical Heating
- Power and Resistance
- Water Volume
- Pollution
- Green Technology
- Cost Efficiency

# 5G IN SPACE

The fifth generation of mobile communication is on its way to bridge the numerous gaps by its preceding technologies. Most of the network issues arise when people wish to watch 4K videos, video chat or when they want to interact with the different IoT devices.

Similar problems occur in the satellite communication mechanism. As more and more satellites are launched into the space, they face issues in transferring data. The 5G technology can easily resolve such issues.

- 5G uses high frequency for establishing communication between different devices.
- These frequencies are in the range of 30 to 300 GHz.

## Millimeter Wave Satellite

To make the communication better, researchers from the European Space Agency (ESA) are making efforts to develop satellites that will communicate on millimeter-wave frequencies. These satellites are named as W-Cube. Some of their features are:

- Communication devices installed in these satellites will test and use the 75 GHz frequency band.
- The body of these satellites will be based on Reaktor's Hello World CubeSat platform.
- They will weigh less than 5kg.

Finland based Reaktor Space Lab and the VTT Technical Research Centre will develop these satellites. The signals transferred by them will be observed at the measurement station in Graz, Austria. This technology will provide a unique opportunity to achieve high expertise in the field of telecommunication in the space.

**Image courtesy:** [appalachianhvac.com](http://appalachianhvac.com) || [www.inspecta.com](http://www.inspecta.com) || [aircon.inzbook.com](http://aircon.inzbook.com) || [reaktorspace.com](http://reaktorspace.com) || [www.nbcnews.com](http://www.nbcnews.com) || [www.engineering.com](http://www.engineering.com) || [www.ibtimes.co.in](http://www.ibtimes.co.in) || [www.integrosol.com](http://www.integrosol.com) || [www.gemstechnologies.com](http://www.gemstechnologies.com) || [www.smartcitiesworld.net](http://www.smartcitiesworld.net) || [www.commercialdivingacademy.com](http://www.commercialdivingacademy.com) || [tspndt.com](http://tspndt.com)



## Why are ??? ROBOTS SHAPED LIKE HUMANS

According to the Greek mythology, it is said that we make and imagine our inventions to always look like us. We even imagine an alien or a ghost that look like us. This can be the probable reason why we design robots that look like humans. Technology that is now making the robots intelligent is also teaching them how to be humans. As humans, we try to align our imageries and take inspirations from our environment, which also inspires us to design robots in a humanoid shape.

Many factors may govern our imagination of a human-like robot:

- To impose the same constraints on them, as the world imposes on us.
- The closer the design is to humans, the better it will navigate and manipulate the human world.
- To make them interact with us as we interact with each other.

After being able to design a humanoid, we are still far from the technology that will allow these humanoids to adopt the human abilities completely. If we ever reach such a level of technology, we will give rise to a new species, for whom the human race will simply be like a cannon-fodder in military combat.



## QUALITY ASSURANCE METHODS:

### The NDT benefits, QA and QC

Almost all the systems undergo a testing phase before they reach the end users. One of such testing methods is the Non-Destructive Testing (NDT). It is the process of inspecting, testing and evaluating the components and materials of a product or a system without destroying any of its parts. NDT is very beneficial to the manufacturing, fabrication and the construction industries.

Some of the benefits include:

**Safety:** The NDT determine if a system component is in need of repair. These tests are conducted in ways that maintains the highest level of safety for the tested product as well as the tester.

**Reliability:** A wide variety of available tests help to generate the accurate results. The non-destructive tests conducted on a given piece of equipment or a part of the machinery helps to identify the areas of defects.

**Affordability:** Out of all the maintenance tests done on the components and machinery, NDT's

are always the most affordable option than the destructive test.

Fortunately, there are several methods to carry out non-destructive testing. These methods may need special equipment or high degree of specialization. Some of them are:

**Visual inspection method** that looks for issues in the surface such as looks, slags, craters and cracks.

**Radiographic method** that can detect microscopic internal flaws in the system structure.

**Liquid penetrant method** to detect leakages in the product body.

**Ultrasonic method** to identify both surface and sub-surface flaws.

Quality Assurance (QA) and Quality Control (QC) are two another components when it comes to testing a product or a system. While QA provides the overall guidelines used to ensure there are no defects in the product, QC is a process of reviewing the products to check whether the quality is maintained while it reaches the customer.

The NDT process provides a base to the QA and QC to decide whether a product is fit and meets all the quality and safety standards. Only after this, the product moves towards the later stage of processing.



## Why Should Every Engineer Learn Machining?

Engineers and machinists often work together on a single project across the manufacturing industries. An open communication and awareness about their respective work methods can do wonders. On the other hand, a breakdown in their communication can be disastrous for a project. These two groups are dependent on each other as they work together. Therefore, it can be highly beneficial for the engineers to learn some machining basics:

- Learning about machining helps them to look at the world from both perspectives.
- There will be a better understanding among both groups about the technical details.
- Knowing the design details about the machine will enhance the engineer's imagination towards its operation.
- It will help to adopt better design principles.

From a designer's point of view, it is essential to push their limits beyond imagination. Being an engineer and a machinist will help in knowing what can be done and how will it be done. As a result, it will increase the overall efficiency.

