

# 7 SKILL SECTORS



MANUFACTURING TECHNOLOGY



CONSTRUCTION TECHNOLOGY



INDUSTRIAL AUTOMATION



AUTOMOTIVE TECHNOLOGY



ENERGY MANAGEMENT



WELDING TECHNOLOGY



INFORMATION TECHNOLOGY

Government of Karnataka considers skill development to be an important aspect of nation building exercise and has established Society for **Karnataka German Multi Skill Development Centre (KGMSDC)** to kick start state-of-the-art **Karnataka German Technical Training Institutes (KGTTIs)** at Bengaluru, Kalaburagi, Belagavi, Mangaluru and Hubballi with the technical support of **Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) - International Services, Germany**. With the existing training centres and the promise of many more to come, KGTTIs are sure to enhance employability and increase the quality of work all across the nation. KGTTIs, with its world-class vocational training infrastructure has set a benchmark in skill development. The focus is to offer skill-specific training that will help students find excellent job opportunities in the global workplace and encourage entrepreneurship amongst the youth.

**KARNATAKA GERMAN MULTI SKILL DEVELOPMENT CENTRE**  
CoE Building, Kaushalya Bhavan Campus, Bannerughatta Road,  
Dairy Circle, Bengaluru - 560 029  
Tel: 080 - 26649797 | [js@kgmsdc.com](mailto:js@kgmsdc.com)

**KGTTI BENGALURU**  
Behind Kennametal, NH 4  
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[director.bengaluru@kgtti.com](mailto:director.bengaluru@kgtti.com)

**KGTTI KALABURAGI**  
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**KGTTI BELAGAVI**  
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**KGTTI MANGALURU**  
2<sup>nd</sup> Floor, Government ITI(W), Airport Road,  
Konchady Post, Mangaluru - 575 008  
Tel: 0824 - 2211477 | [director.mangalore@kgtti.com](mailto:director.mangalore@kgtti.com)

**KGTTI HUBBALLI**  
Government ITI Campus, CoE Building, Vidyanagar,  
Hubballi - 580 021 | Tel: 0836 - 4257003  
[director.hubballi@kgtti.com](mailto:director.hubballi@kgtti.com)

**KGTTI EXTENSION CENTER - GOWRIBIDANUR**  
Warehouse Building, B H Road,  
Gowribidanur - 561208

## PROJECT PROMOTED BY



GOVERNMENT  
OF INDIA



GOVERNMENT  
OF KARNATAKA



TECHNICAL  
PARTNER

[KGMSDC.COM](http://KGMSDC.COM)

[KGTTI.COM](http://KGTTI.COM)

EXCELLENCE THROUGH SKILLS

# MANUFACTURING TECHNOLOGY



**KARNATAKA GERMAN  
TECHNICAL TRAINING  
INSTITUTE**

Promoted by society for Karnataka German Multi Skill Development  
Centre (KGMSDC)  
(A Government of Karnataka undertaking )



Today, computer numerical control (CNC) machines are found almost everywhere, from small job shops in rural communities to large multinational companies in large urban areas. Truly, there is hardly a facet of manufacturing that is not in some way touched by what these innovative machine tools can do. Everyone involved in the manufacturing environment should be well aware of what is possible with these sophisticated machine tools.

A computer numerical control machines requires skilled operator who understand programming parameters, automation-specific safety standards, and a host of other vital pieces of information. Gaining technical skills and training in CNC machine shall help aspirants to become a prospective CNC programmer, operator or machinist.

There are two different specialized professions in CNC: programmer and operator. The CNC programmer is responsible for programming the machine and the computer so that they are usable by the operator. Meanwhile, the operator is responsible to run the machine to produce manufactured products.

INDUSTRY PARTNER:



### CNC

The CNC training focuses on more sophisticated tasks carried out by CNC Machines. The initial stages of the course teaches a technician how to read, comprehend, and create computer numerical control programs. This range of programming instructions typically includes drilling, grooving, facing, threading, and turning. Late stage training will often cover CNC program editing, machine adjustments, and developing new command syntax.

CNC simulators are used for verification of CNC program and tool paths generated. They support Milling, Turning, Mill / Turn applications with full machine simulation and stock removal verification. They can also identify problem areas such as potential collision, gouges or over travel and allow correction prior to NC Code generation.

### CAD / CAM

The true power and versatility of CNC machine programming can only be harnessed with CAD-CAM software training. Throughout the history of the CAD-CAM software industry, companies have boasted huge advancements in technology that save time and provide better designed and better machined parts.

**Computer Aided Design (CAD)** is a three dimensional design tool for developing 2 and 3 dimensional models which can later be translated into a product.

**Computer Aided Manufacturing (CAM)** is specifically designed for computer systems to plan, manage, and control manufacturing operations. It is used on the direct and indirect computer interface with the plant's production resources. It also takes care of numerical control of machine tools. CAM is a training tool for improving productivity. CAD / CAM plays a vital role right from the stage of conceiving of the idea to designing the product with aesthetic appeal to developing the product level drawings and lastly to the validation/analysis stage



## JOB OPPORTUNITIES

As CNC is the basis of manufacturing, there are available jobs in a variety of exciting industries including nuclear, aerospace, machinery, and many more. Since all CNC professions require certifications and trainings, it is imperative for anyone who is interested in seizing the aforesaid opportunities to get an training in CNC.



## COURSES OFFERED

MASTERCAM X6

CNC PROGRAMMING AND OPERATION TURNING

CNC PROGRAMMING AND OPERATION MILLING

CATIA

AUTOCAD

## COURSE FEATURES

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|---|---|
| <ul style="list-style-type: none"> <li>- MasterCam X6</li> <li>- Introduction to MasterCamX6</li> <li>- Creating 2D Geometry</li> <li>- Modifying 2D Geometry</li> <li>- Level Manager</li> <li>- Drafting</li> <li>- Creating Wireframe</li> <li>- Creating Surface Model</li> </ul> | <ul style="list-style-type: none"> <li>- Creating Solid Model</li> <li>- 2D Tool Path - Turning &amp; Milling</li> <li>- 3D Tool Path</li> <li>- Solid verification &amp; back plot</li> <li>- Post Processing</li> <li>- Program Transfer from PC to Machine</li> <li>- Practical Demonstration</li> </ul> |
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- CNC Programming and Operation
- Turning & Milling
- Introduction to CNC Machines
- Advantages & Disadvantages of CNC
- Co-ordinate Systems
- Cutting Parameters
- CNC Tool Selection
- Part programming - Turning & Milling
- Canned Cycles - Turnign & Milling
- Practical Demonstration