Short Term Courses

COURSES FOR DIPLOMA/DEGREE IN MECHANICAL ENGG. OR EQUIVALENT		
COURSE NAME	DURATION	COURSE FEE
Auto CAD (Mechanical)	1 Month	₹7,000/-
CATIA	1 Month	₹8,000/-
Creo	1 Month	₹8,000/-
UNIGRAPHICS	1 Month	₹8,000/-
SOLIDWORKS	1 Month	₹8,000/-
MASTER CAM	1 Month	₹8,000/-
CNC Milling & Turning	1 Month	₹8,000/-
ANSYS	2 Weeks	₹8,000/-
3D Printing & Additive Manufacturing	2 Weeks	₹8,000/-
COURSES FOR DIPLOMA/DEGREE IN ELECTRICAL/ ELECTRONICS ENGG. OR EQUIVALENT		
COURSE NAME	DURATION	COURSE FEE
PLC	1 Month	₹8,000/-
VLSI	1 Month	₹8,000/-
SCADA	1 Month	₹8,000/-
Advanced Embedded System	1 Month	₹8,000/-
ROBOTICS	1 Month	₹8,000/-
Lab View	1 Month	₹8,000/-
E.CAD	1 Month	₹7,000/-
COURSES FOR DIPLOMA/DEGREE IN CIVIL ENGG.		
COURSE NAME	DURATION	COURSE FEE
Auto CAD (Civil)	1 Month	₹7,000/-
STAAD PRO	1 Month	₹8,000/-
3Ds Max	1 Month	₹8,000/-
REVIT	1 Month	₹8,000/-
COURSES FOR ANY GRADUATE		
COURSE NAME	DURATION	COURSE FEE
MAT LAB	2 Weeks	₹8,000/-
Hardware Networking	1 Month	₹5,500/-
.NET	1 Month	₹5,500/-
Core JAVA	1 Month	₹5,500/-
Advanced JAVA	1 Month	₹5,500/-
C	1 Month	₹3,500/-
C++	1 Month	₹3,500/-
Entrepreneurship Skill Development Program	2 Weeks	₹2,500/-
Internet of Things	2 Weeks	₹8,000/-

ALL THE ABOVE SHORT TERM COURSE START ON 1ST WORKING DAY OF EVERY MONTH

AS 9100,
ISO 9001, 14001, 29990, 50001 &
OHSAS 18001 CERTIFIED

MSME TOOL ROOM, BHUBANESWAR
Micro, Small & Medium Enterprises, A Govt. of India Society
B-36, Chandaka Industrial Area, Near Infocity
Bhubaneswar-751024, Odisha, India
Phone : 0674-3011755, 3011733/734, Fax: 0674-3011706, 2743061
E-mail: cttc@cttc.gov.in, Website: www.cttc.gov.in

Prospectus

POST GRADUATE IN AEROSPACE MANUFACTURING (PGAM)

AS 9100,
ISO 9001, 14001, 29990, 50001 &
OHSAS 18001 CERTIFIED

CENTRAL TOOL ROOM & TRAINING CENTRE
Bhubaneswar, Odisha

NSQF Complied Long Term Courses

COURSE NAME		DURATION	COURSE FEE
COURSES FOR 10TH PASS OUT			
Diploma in Tool & Die Making	DTDM	4 Year	₹19,000/- (per Semester)
Diploma in Mechantronics	DIM	3 Year	₹19,000/- (per Semester)
ITI Machinist	ITIM	2 Year	₹28,000/- (per Year)
ITI Fitter	ITIF	2 Year	₹28,000/- (per Year)
ITI Electrician	ITIE	2 Year	₹28,000/- (per Year)
Condensed Course in Tool & Die Making	CTDM	1 Year	₹66,000/-
Certificate Course in CNC Turning & Milling	CCTM	1 Year	₹32,000/-
COURSES FOR UNDER MATRIC			
Certificate Course in Machine Operation	CCMO	1 Year	₹18,000/-
COURSES FOR ITI STUDENTS			
Certificate Course in Advance Machining	CCAM	1 Year	₹32,000/-
Advance Certificate Course in Machine Maintenance	ACCMM	1 Year	₹32,000/-
Advance Certificate Course in CNC Machining	ACCCM	1 Year	₹34,000/-
Advance Certificate Course in Welding Technology	ACCWT	1 Year	₹50,000/-
Certificate Course in Machining	CCM	6 Months	₹22,000/-
Certificate Course in Fitting & Rigging	CCFR	6 Months	₹32,000/-
Suryamitra	-----	1.5 Months	₹10,000/-
COURSES FOR DIPLOMA IN MECHANICAL ENGG. OR EQUIVALENT			
Post Diploma in Tool & Die Manufacturing	PDTDM	1 Year	₹54,000/-
Post Diploma in CAD/CAM	PDCC	1 Year	₹54,000/-
Advance Diploma in CNC Programming Techniques & Practice	ADCNC	6 Months	₹34,000/-
COURSES FOR DEGREE IN MECHANICAL ENGG. OR EQUIVALENT			
Post Graduate Diploma in Tool Design & CAD/ CAM	PGTD	1 Year	₹60,000/-
Post Graduate in Aerospace Manufacturing	PGAM	1 Year	₹60,000/-
Master Certificate course in CAD / CAM	MCC	6 Months	₹36,000/-
COURSES FOR DIPLOMA IN ELECTRICAL/ELECTRONICS ENGG. OR EQUIVALENT			
Advanced Diploma in Machine Maintenance & Automation	ADMMA	6 Months	₹34,000/-
Advanced Embedded Technology	AET	6 Months	₹34,000/-
Certificate Course in Electrical Equipment Repair & Maintenance	CCERM	6 Months	₹34,000/-
Post Diploma in Industrial Automation & Robotics	PDIAR	1 Year	₹60,000/-
COURSES FOR DEGREE IN ELECTRICAL/ELECTRONICS ENGG. OR EQUIVALENT			
Master Certificate Course in Automation & Process Control	MCCAPC	6 Months	₹36,000/-
COURSES FOR DIPLOMA IN MECHANICAL/ ELECTRICAL/ELECTRONICS ENGG. OR EQUIVALENT			
Post Diploma In Mechatronics	PDIM	1 Year	₹54,000/-
COURSES FOR DIPLOMA/DEGREE IN CIVIL ENGG.			
Post Diploma in Structural Design & Analysis	PDSDA	1 Year	₹54,000/-
Advance Diploma in Structural Design & Analysis	ADSDA	6 Months	₹34,000/-
COURSES FOR ANY GRADUATE			
Advance Certificate Course in Inspection & Quality Control	ACCIQ	6 Months	₹22,000/-
Advance Diploma in Computer Hardware & Networking Management	ADCHNM	6 Months	₹34,000/-
Advanced Certificate Course in Software Application	ACCSA	6 Months	₹22,000/-

POST GRADUATE IN AEROSPACE MANUFACTURING (PGAM)

Introduction to CTTC:

MSME Tool Room Bhubaneswar (Central tool Room & Training Centre) established in the year 1991, Today stands as the premier Tool Room & Training Centre in India. Under the Technical Co- operative programme between Government of India and Govt. of Denmark the Centre was established as a Govt. of India Society. The management of affairs of the Centre rests with the Governing Council constituted by Govt. of India. Additional Secretary & Development Commissioner (MSME), Govt. of India, is the President of the Society & Chairman of the Governing Council.

MSME Tool Room –Bhubaneswar is on the way of achieving its set goal with its extension Centre at Rayagada and Kalinga nagar, Odisha. It believes its bench marking its standards not only against the tool room and training centers in India and the world. The zeal and experience and commitment of employees has been pushing the Centre to achieve the greater height of quality industry oriented training programs for different levels and different discipline students and production of highly precision components for tool and die making, automobile and aerospace components.

Objectives of this course

Learners who attain this qualification are competent in Post Graduate in Aerospace Manufacturing and can get a job in a captive or commercial Tool Room or become an entrepreneur.

- Qualifying learners attain skills to work in conventional and CNC machines like Turning, Milling, and grinding and tool assembly. Additionally, the learners attain skill to handle CAD/CAM software.
- Qualified learners are capable of working in Sheet metal industry in their Press Shop, Plastic industries in their Mold shop and general engineering industry in their machine shop.
- Participants will be able to work on different types of tools, can able to do the maintenance and trouble shoot the problems.

Who can avail this opportunity:

Degree in mechanical/production/Automobile engineering or equivalent is eligible for taking admission. The company sponsored candidates will be preferred. Unemployed /fresh diploma holders and those final year students awaiting result can be apply.

NSQF Qualification: Level-8

Duration: 1 year (1560 Hours)

Occupation of Qualification: Entrepreneur/Engineer (Production/Process Planning/Quality Control)/Supervisor.

Progression of Occupation from Qualification: After completion of course and after 1 years of field experience the trainee can work in Aerospace Component Manufacturing Field and after that 5 years of experience, the person can work as a Manager.

Fee:

₹ 60,000/-per participant to be paid in the following instalments.

At the time of registration	-	₹ 1,000/-
First Instalment	-	₹ 14,000/-(At the time of admission)
Second Instalment	-	₹ 15,000/- (After completion of two month)
Third Instalment	-	₹ 15,000/-(After completion of six month)
Fourth Instalment	-	₹ 15,000/- (After completion of nine month)
Insurance Fee	-	₹ 300/- (At the time of admission)
NSQF Assessment Fee	-	₹ 800/- (At the time of admission only for general)

22.5%seats are reserved for SC/ST candidates for whom no course fee will be charged subject to production of two photocopies of caste certificate dully attested by Greeted Officer. However, all other fees/deposits is to be paid in case of admission. Caste Certificate in Original from competent authority is to be produced for verification at the time of admission which may be revivified from the issuing authority.

COURSE CONTENT :

Sr. No.	Title and identification code of component	Estimated Time
1	Computer Aided Design (Auto CAD and Solid works and NX CAD)	120
2	Computer Aided manufacturing (HYPERMILL & MASTERCAM)	120
3	Computer Aided Engineering(ANSYS)	80
4	Advance Computer Aided Design (CREO Parametric and CATIA)	160
5	CNC Programming And CNC Machine Practice	120
6	Entrepreneurship	------ 20
7	Production Technology	36
8	Metrology	24
9	Material Technology	34
10	Heat Treatment & Surface Coating	34
11	AQMS & FAI	75
12	Strength Of Material	40
13	Process Planning	35
14	Theory Of Sheet Metal	55
15	Live Project (Aerospace Manufacturing)	160

ELIGIBILITY TO APPEAR IN THE EXAM:

Minimum 80% attendance is compulsory for the students to appear for the assessments.

MARKING SCHEME:

Sr. No.	Method of Assessments	Weightage (Max. Marks)	Evaluator
1	Written Test	20	Trainer + Course coordinator + Examiner nominated by Examination Cell of CTTC, Bhubaneswar
2	Practical Test	40	
3	Viva-voce	20	
4	Class/Workshop/Lab performance	20	
TOTAL		**100**	

PASSING MARKS:

Passing criteria is based on marks obtained in attendance record, term works, assignments, practical performance, viva or oral exam, module test, practical exam and final exam.

Minimum Marks to pass practical exam – 60%

Minimum Marks to pass theory exam – 40%

DETAILED COURSE PLAN FOR 1 YEAR:

SEMESTER-I

Course Name	Contents (chapters/topics)
Production Technology	Workshop safety rules .Use of personal protective equipment (PPE).Cutting tool &materials. Turning, Milling, Grinding m/c parts with operations. DE-burringprocess.Coolants.Accessories and Attachments.
Auto-CAD	Introduction to CAD & AutoCAD. Coordinate systems. Various drawing tools. Operations on the curves. Introduction to drafting in AutoCAD. Advance drafting & detailing in AutoCAD.3D modeling in AutoCad. Preparion of Drawing layout in sheet.
CNC Technology	Introduction to CNC.Various codes used in CNC machine in different controllers. CNC Turning, use of codes in various turning operation with respect to controllers. CNC Milling, use of codes in various turning operation with respect to controllers.
Master Cam	Introduction to master Cam, Sketches on master cam with sketch tools, different operations on sketch. Surface modeling, differ types of modeling & operations. Solid modeling with its tools. Generation of 2D tool path in milling. Generation of 3D tool path in milling(roughing,semifinishing & finishing).NC code generation. Different types of turning operations & NC code Generation.
Engineering Drawing	Introduction to engineering drawing. Practicing of drawing by conventional method Scaling & dimensioning practice. Defining of different symbols. Detail Study of assembly drawing.
Metrology	Introduction to metrology & standardization of measuring instruments. Gauges & tits use. Cmparators & practice with CMM.

Material Technology	Introduction to metals & materials, Different properties of materials, Types of material with respect to presence of Iron, their use in products & their properties.
Heat Treatment, Surface Coating & Cleaning	Introduction to the heat treatment process, its use & importance, its influence towards the properties of material.
Soft Skill	Enhancing basic communication skills, working on verbal & nonverbal communication. Enhancing Presentation skills & body language. Preparation of CV & Cover letter & Various personality development activities.

SEMESTER-II

Course Name	Contents (chapters/topics)
HYPER MILL	Introduction to hyper CAD, Work plane & CAD tools features. Solid modelling, surface modeling, Layer setting. Drafting & detailing. Introduction to Hypermill. M/C coordinate system & work piece setting. 2D machining & operations. 3D machining & operations. 3D advanced cycles, 3D equidistant finishing & 3D automatic rest machining. 5X cavity cycle with all operation. 5X surface machining. Selectiion of Post processor & CNC programme generation.
CATIA	Introduction to CATIA interface, Working with sketch tools & various operations on it. Introduction to solid modeling. Working with different features. Introduction to assembly interface. Types of assembly wit kinematics. Working with CATIA sheet metalenvironment. CATIA drafting & Detailing. Finalizinig the drawing, printing & plotting.
AFQMS and FAI	Introduction to Key elements ,Parameters & Documents for FAI.General Condition , scope, Management responsibility, Resource management, product realization, analysis and improvement as per AFQMS.
AS 9100, Quality Control & Inspection HYPER MILL	Discuss the different requirement of QMS as per AS 9001. State the elements included in CM. Discuss the basics of Life cycle, Documentation and Data management concept. Write the element of 5S. Implementation of 5S.
Selection of Cutting Tools	Introduction to cutting tools.Handness of tools. Tool geometry & tool signature. Orthogonal & oblique cutting. Cutting tool material. Criteria for selecting the cutting tool.
Process Plan	Define Process planning. Construct a typical Process chart for machining of a given part. Drawing with process writing. Influence of process planning towards the cost of product.
Theory of Sheet Metal	Tool identification to work with sheet metal. Design parameters of sheet metal. Various sheet metal operations with respect to the thickness of sheet metal

How to apply:

Application form attached with the broacher be filled up & mailed to Sr. Manager (Training) along with a D/D of ₹1000.00 on or before _____ In the event of selection this money will be adjusted in the course fee otherwise refund will be given on or before one week of course starts. Admission notification will be issued immediately after the last date of receipt of application and selected candidates will be required to pay fees within 15 days on or before _____and report for training from _____ .

Hostel Accommodation:

Dormitory accommodations can be arranged in the CTTC guest house which can be booked on advanced request. The accommodation charges will be ₹1500.00 per month per bed.

Uniform:

The candidates will have to get uniforms, dress stitched at their own cost as per the colour & design specified by the center.

Certification:

After successful completion of training main certificate with grade, mark sheet & project certificate will be issued separately to the trainees.

Placement Help:

CTTC placement cell will make efforts to contact & invite companies to conduct campus interviews; however, no guarantee can be given for placement/employment. Interested trainees can be registered by paying ₹3,000/- each towards placement registration at start of the programme and in case of trainee is not successful from getting placement he/she may be refunded ₹2,000/-.

GENERAL RULES & REGULATIONS FOR TRAINEES:

- CTTC reserves the right to reject any application without assigning any reason. Incomplete applications are liable to be rejected.
- Registration Fee is Non Refundable, in case any candidate cancels his admission for any reason.
- Course Fee once paid will not be refunded & Registration/ Course Fee is not transferrable.
- Insurance & other charges as specified for the course to be paid but the trainee in addition to the course fee as applicable.
- All the trainee will be ensure discipline within the campus.
- Trainee shall be required to wear uniform & shoes as prescribed by the institute and possess I-Card compulsory during training.
- Mobile Phones, Pen Drives, CD any other related items are not permitted inside CTTC premises.
- Regular attendance will have to be maintained by the trainee as per course schedule & 80% attendance is compulsory in all subjects individually.
- Trainees will abide by the examination rules and regulations displayed on Notice Board of CTTC and as amended.
- Leave without information/ permission will not be entertained.
- Trainees going on leave or home during vacation should inform course coordinator compulsorily.
- No trainee shall be organize/ conduct any meeting within the campus.
- The Machines/ Equipment/ Furniture must be handled carefully. No act of damage to CTTC properly shall be carried out by the trainee, any loss or damage to property, including water & electricity usage.
- Smoking & chewing tobacco, possessing or drinking alcoholic beverages in any form is strictly prohibited within CTTC premises.
- Ragging is strictly prohibited in the premises.
- Writing any Comment/ Remarks/ Name on doors, walls, toilet, and notice board is strictly prohibited.
- Violation of above & any other Rules, Regulations, Disciplines and Conduct are liable for disciplinary action.