

PROSPECTUS

For

DIPLOMA IN TOOL & DIE MAKING / MECHATRONICS / AUTOMATION & ROBOTICS COURSE (2026-2027)



MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES
GOVERNMENT OF INDIA

CENTRAL TOOL ROOM & TRAINING CENTRE

(An Indo-Danish Project, A Government of India Society)
Ministry of MSME

B-36, Chandaka Industrial Area, Bhubaneswar - 751 024, Odisha

Contact : 91-674-2654 771/770/700/742/743

E-mail : cttc@cttc.gov.in Website : www.cttc.gov.in



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

IMPORTANT DATES

1. LAST DATE OF SALE OF APPLICATION FORM : 30.05.2026
2. LAST DATE OF RECEIPT OF APPLICATION : 30.05.2026
3. DATE OF ENTRANCE EXAMINATION : 07.06.2026

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RECEIPT

Rs. _____ received with thanks from Sri _____
in shape of Cash/DD _____ Date _____ towards sale of
Application Form No _____ and one set of sample question paper.

For CTTC - BBSR

CENTRAL TOOL ROOM & TRAINING CENTRE (CTTC), MSME TECHNOLOGY CENTRE, BHUBANESWAR

1. INTRODUCTION

Central Tool Room & Training Centre (CTTC) Bhubaneswar has been set up by Govt. of India in collaboration with Govt. of Denmark and Govt. of Orissa as a Govt. of India society under Ministry of MSME. The Training activities in the Centre are continuing since October 1991 and the Centre is conducting Diploma Training Courses in Tool & Die Making and Mechatronics which are of 3 years. Recent we added another 3 years Diploma training course in Automation & Robotics in addition to various short term training courses in Tool Engineering and CAD/CAM, Industrial Automation & Industrial Robotics etc.

All 3 Diploma courses have been recognized by All India Council for Technical Education (AICTE), Govt. of India.

2. Facilities available in the Technology Centre.

The Training and Production Wings of the Tool Room are equipped with comprehensive range of State-of-the-art latest imported and indigenous machines including CAD/CAM and specialised CNC Machines like CNC Lathe, CNC 3-D Coordinate Measuring Machine, CNC Milling, CNC EDM-Spark Erosion, CNC Wirecut, Jig Grinding, Vacuum Heat Treatment facilities etc. The Tool Room is also equipped with Modern class rooms and teaching aids & DSP, Hydraulics, Robotics, Industrial Automations, VLSI, Embedded System Labs.

3. How to apply for Diploma in Tool & Die Making / Diploma in Mechatronics / Automation & Robotics

For offline Application :

The application in the proforma prescribed should be filled in by the candidate's own handwriting and addressed to the General Manager, Central Tool Room & Training Centre, Plot No. B-36, Chandaka Industrial Area, Bhubaneswar-751024. Application form submitted should have the superscription on the top of the envelop as "Application for Diploma in Tool & Die Making / Mechatronics / Automation & Robotics".

For online Application :

The application in the proforma prescribed should be filled online. After filling up the mandatory details & uploading their photo in the application form, candidates are required to make the payment online, sign the declaration at the end and upload an image file of their left hand thumb impression and submit online. To apply, visit the link www.cttc.gov.in. The exam will be held on 07.06.2026 .

All the candidates applied for 3 years Diploma Course in Tool & Die Making / Mechatronics / Automation & Robotics in the prescribed form will be called for Written Test to be held at Bhubaneswar at their own costs. Application

received late/incomplete shall not be considered & Centre shall not be held responsible for none/late receipt of applications due to postal delay. Application sent by fax/e-mail shall not be entertained.

4. Students awaiting their result of qualifying exam. (10th or equivalent) can also apply and sit for entrance test. However, they have to produce result at the time of admission.

5. Number of Seats

Intake capacity for Diploma in Tool & Die Making / Mechatronics / Automation & Robotics is as follows:

Name of the Course	Intake	Gen	SC	ST
DTDM	120	92	18	10
DIM	120	92	18	10
DIAR	60	46	9	5

Note: 10% of the intake in each discipline will be added extra for EWS category subject to the approval of AICTE.

TRAINING

- 1.0 These rules shall apply to all the trainees admitted to the Training Course for Diploma in Tool & Die Making / Mechatronics / Automation & Robotics at the Centre and shall come into force with immediate effect.

2.0 Definitions: In these rules and regulations

- (i) 'Centre' shall mean Central Tool Room & Training Centre, Bhubaneswar.
- (ii) 'Council' shall mean the Governing Council of the Centre.
- (iii) 'Chairman' shall mean the Chairman of the Governing Council of the Centre.
- (iv) 'General Manager' shall mean the General Manager of the Centre.
- (v) 'Senior Manager (Training)' shall mean the Senior Manager (Training) of the Centre or any other officer looking after the duties of the Senior Manager (Training).
- (vi) 'Course' shall mean Training course of the Centre leading to "DIPLOMA IN TOOL AND DIE MAKING / MECHATRONICS / AUTOMATION & ROBOTICS".

3.0 Duration

The duration of diploma courses shall be 3 years, divided into 6 semesters. The exact date of starting the course shall be decided by the General Manager. No trainee shall normally be allowed to join late. Under exceptional circumstances, however, General Manager may allow trainee (s) to join late, not more than 15 days, but the period of delay shall not be compensated by any extra period of training. However, the trainee (s) shall put in extra efforts to make up for the time loss.

4.0 Eligibility for Admission

Candidates having the following qualification shall be eligible for admission to the course.

- i) Matriculation (10th) or equivalent examination from a recognised Board with Mathematics and Science (Physics or Chemistry or Both) with Minimum 50% marks (40% in case of candidates belonging to Scheduled Caste / Scheduled Tribe) in aggregate.
- ii) The candidate should have attended the age of exactly 15 years but should not be more than exactly 19 years as on 1st July in the year of admission (relaxable to exactly 22 years in case of candidates belong in to SC/ST). Not even a single day more or less will be allowed from the two extremities of the age. Once the date on which age of candidate is counted for determining their eligibility is fixed and notified, it shall not be changed even if the date of starting of the course is advanced or deferred for any reason whatsoever.
- iii) Candidate should not be studying in any other course or undergoing any other training at the time of admission.
- iv) Candidates identified EWS & whose family income has gross Annual Income below Rs. 8 lacs shall be covered under the EWS Reservation subject to production of income certificate from Competent Authority. There is no relaxation in course fees. Candidate has to pay course fees like general candidate (**Format for EWS enclosed**).

5.0 Method of Selection

Selection will be made based on an Entrance Examination. Written Test shall be conducted for 2 hours consisting of two parts i.e. Part-I and Part-II. Part-I will be objective type consisting of 60 Nos. of questions of 10th standard and from 03 subjects (Mathematics - 20, Physics - 20 and Mental Aptitude - 20). Each correct answer shall fetch 1 (one) mark but for every wrong answer ¼ mark shall be deducted. Part-II will be of subjective type/ fill in the blanks with 10 questions each from Mathematics and Physics and each question shall carry 2 marks.

The result of the Written Test shall be declared by 7 P.M. of the next day of the Examination day. A merit list will be prepared based on the marks secured in the written test and final selection will be done on merit. In case there is a tie in marks secured candidates with higher marks in Part-II of the Examination will be preferred. The result shall be displayed on the notice board of the Exam Centre & at CTTC, Bhubaneswar and also shall be published in the website www.cttc.gov.in.

Counseling for the selected candidates will be conducted at CTTC, Bhubaneswar. The seat will be allotted as per the choice of the candidate for Diploma in Tool & Die Making / Mechatronics / Automation & Robotics while counselling on merit basis. Seat allotted for Tool & Die Making or Mechatronics

or Automation & Robotics course at the time of counselling shall be final and no further request for change shall be entertained.

Reservation shall be made for candidates belonging to Scheduled Castes/ Scheduled Tribes as per rules of the Centre, who will be selected in order of general merit, against reserved seats. If any SC/ST candidate is selected on merit in General Category his name will be published in General Category list.

6.0 Security Deposit

The selected candidates will have to make a Security Deposit of Rs. 5500/- at the time of admission. This deposit shall be refundable on completion of training after deduction of any dues to the Centre or Hostel Committee or both without any interest. In case, a trainee leaves the course in between the above deposit will be forfeited admission fee.

7.0 Course Fees

The trainees admitted to the course shall pay course fees @ Rs. 22,000/- per semester. The fees are required to be paid at the beginning of each semester, every year. The fee may be revised by the competent authority from time to time.

Reservation as per rule 22.5% seats are reserved for SC/ST candidates for whom no course fee will be charged subject to production of two self attested photo copies of Caste Certificate and copy of Aadhar card which are mandatory. 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 re-verified from the issuing Authority.

8.0 Apron & Uniform

The trainees will have to get the uniform dress and apron stitched at their own cost as per the colour and design specified by the Centre.

9.0 Vacations : 20 days per Semester or 40 days per Year.

10.0 Leave

- (i) A trainee who is injured due to an accident during his training at the Centre and is unable to attend to his training on account of that, shall be allowed leave, provided it is certified by such medical authorities as may be specified for this purpose by the General Manager that he is unable to attend training on account of that injury.
- (ii) No other leave as excepting otherwise provide in this rule shall be permissible, even on sickness, to the trainees during the course. Any other period of absence, including late coming or any other commission misconduct or otherwise shall be treated as absence from training for the purpose of compilation of requisite percentage of attendance for eligibility for appearing in Semester Examination/Final Examination.

11.0 Risks and Hazards

The Centre shall take all precautionary measures with regard to safety. However, the Trainees should decide to join the course at their own free will and at their own risk. In case of any injury or any disablement (temporary/permanent) suffered by the trainees during the course due to any accident or otherwise the Centre shall not be liable to pay any compensation whatsoever. The trainees and their guardians (in case of minors) shall indemnify the centre on this account. Without prejudice to the above condition of engagement of trainees at the Centre, the trainees may insure themselves against the risk of accident and/or other industrial hazards for their engagement at the centre as trainees for which insurance premium shall be paid by the trainees themselves. On the specific request of trainees, the Centre can arrange group Insurance subject to the premium for this being paid by the trainees.

12.0 Syllabus and Assessment

The syllabus for the course, theory as well as practical shall be as given in Appendix-I, II & III. The scheme for assessment of the progress of trainees through Semester Examinations leading to the award of Diploma Certified by the Centre shall be as given in Appendix-IV. Certificates on completion of training shall be issued only to those trainees who complete the training course and reach the level of proficiency as stipulated therein.

13.0 Attendance, Time Keeping and Conduct

The rules and regulations governing attendance, uniform and conduct of trainees during the training course shall be as given in Appendix-V & VI.

14.0 Termination of Training

- (i) During the course of training the trainees shall strictly abide by the Rules and Regulations of the course and any other instructions issued by the General Manager, Senior Manager (Training) or any other official authorised to issue such instructions from time to time.
- (ii) Violation of any Rules and Regulations and/or any instructions by any trainee(s) shall amount to misconduct in terms of the aforesaid Agreement and Surety Bond and the training of trainee(s) may be terminated and the Surety Money shall be realised from the Surety and/on trainee(s) in terms of the Surety bond as aforesaid.
- (iii) If any time during the course of training, it is observed that the conduct/ activity of trainee(s) go against the smooth conduct of the training programmes or any other activity or is otherwise detrimental to the interests of the Centre, the training of the trainee(s), may be terminated without notice and without assigning any reason. The decision of the Senior Manager (Training) or any other official looking after his duties in

this regard, shall be final and binding on the trainee, his Surety and Guardians.

Competent Authority to take action under this Rule shall be Senior Manager (Training) or any other officer looking after his duties. The appellate authority in this case shall be the General Manager.

15.0 Power to amend/Relax the Rules

These Rules including fee structure are subject to change and Amendment/Relaxation in the Rule(s) can be made by the Governing Council or its chairman or any of its delegated authority on any point of time.

16.0 Application of other Rules

Such of the rules and regulations which have not been referred herein or other decision of the Governing Council of the Centre shall apply to trainees of the course except where said provisions have become repugnant due to any provision laid down in these Rules and Regulations.

17.0 Repeal

Any rules and regulations corresponding to these rules and regulations in force immediately before the commencement of these rules & regulations and applicable to trainees to whom these Rules and Regulations apply, hereby repealed, provided that any order made or action taken under the rules and regulations so repealed shall be deemed to have been made or taken under the corresponding provisions of these Rules and Regulations. All admissions made prior to coming into force of these Rules and Regulations shall be deemed to have been made under these Rules and Regulations and all the present. Trainee shall be governed by these Rules and Regulations. However, trainees enrolled under old scheme will be allowed three supplementaries to be conducted after six months along with the trainees under new scheme of Semester system.

APPENDIX - I

DIPLOMA IN TOOL & DIE MAKING (DTDM)

FIRST SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	HST101	Communicative English & Universal Human Values (UHV)	1	36	40	16	60	24	40	100
2	BST101	Engineering Physics	2	72	40	16	60	24	40	100
3	BST102	Engineering Mathematics-I	2	48	40	16	60	24	40	100
4	EST101	Fundamental of Electrical & Electronics Engineering	2	96	40	16	60	24	40	100
5	EST102	Engineering Drawing-I	2	72	40	16	60	24	40	100
6	EST103	Production Technology-I	2	36	40	16	60	24	40	100
B. PRACTICAL										
1	ESP101	Basic Electrical Lab	2	198	40	20	60	30	50	100
2	ESP102	Basic Electronics Lab	2	198	40	20	60	30	50	100
3	BSP101	Engineering Physics Lab	2	198	40	20	60	30	50	100
4	ESP103	Workshop Practice- I	2	198	40	20	60	30	50	100
SECOND SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	EST201	Production Technology-II	2	84	40	16	60	24	40	100
2	BST201	Engineering Mathematics-II	2	72	40	16	60	24	40	100
3	EST202	Engineering Drawing-II	2	96	40	16	60	24	40	100
4	EST203	Material Technology-I	2	36	40	16	60	24	40	100
5	EST204	Engineering Metrology	2	36	40	16	60	24	40	100
6	EST205	Electrical & Electronics-II	2	36	40	16	60	24	40	100
B. PRACTICAL										
1	ESP201	Workshop Practice- II	2	492	40	20	60	30	50	100
2	ESP202	Basic Cad Lab	2	100	40	20	60	30	50	100
3	ESP203	CNC Simulation Lab	2	100	40	20	60	30	50	100
4	HSP201	Communication Lab	2	100	40	20	60	30	50	100

THIRD SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	EST301	Production Technology-III	2	72	40	16	60	24	40	100
2	EST302	Workshop Calculation	2	36	40	16	60	24	40	100
3	PCT301	Engineering Assembly Drawing	4	96	40	16	60	24	40	100
4	EST303	Material Technology-II	2	36	40	16	60	24	40	100
5	PCT302	Press Tool Theory-I	4	72	40	16	60	24	40	100
6	EST304	Heat Engine-I	2	48	40	16	60	24	40	100
B. PRACTICAL										
1	PCP301	Workshop Practice- III	3	296	40	20	60	30	50	100
2	PCP302	CNC Practice Lab- I	3	100	40	20	60	30	50	100
3	PCP303	CAM Lab-I	3	100	40	20	60	30	50	100
4	PRP301	Project Work on Progressive Tool	2	296	40	20	60	30	50	100
FOURTH SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	EST401	Engineering Mechanics	2	48	40	16	60	24	40	100
2	PCT401	Press Tool Theory-II	4	72	40	16	60	24	40	100
3	PCT402	Press Tool Design-I	4	96	40	16	60	24	40	100
4	EST402	Material Technology-III	2	36	40	16	60	24	40	100
5	PCT403	Mould Theory	4	72	40	16	60	24	40	100
6	EST403	Heat Engine-II	2	36	40	16	60	24	40	100
B. PRACTICAL										
1	PCP401	Workshop Practice- IV	3	296	40	20	60	30	50	100
2	PCP402	CAM Practice LAB-II	3	100	40	20	60	30	50	100
3	PCP403	CNC Practice Lab -II	3	100	40	20	60	30	50	100
4	PRP40	Project Work on Knob Mould	2	296	40	20	60	30	50	100

FIFTH SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	PCT501	Mould Theory -II	4	72	40	16	60	24	40	100
2	PCT502	Mould Design -I	4	84	40	16	60	24	40	100
3	PCT503	Press Tool Design - II	4	96	40	16	60	24	40	100
4	EST501	Strength of Material - I	2	36	40	16	60	24	40	100
5	PCT504	Jigs & Fixtures	4	36	40	16	60	24	40	100
6	EST502	Hydraulics & Pneumatics - I	2	36	40	16	60	24	40	100
B. PRACTICAL										
1	PCP501	Precision Manufacturing lab - I	3	296	40	20	60	30	50	100
2	PCP502	Adv. CAD Practice Lab -I	3	100	40	20	60	30	50	100
3	PCP503	CNC & DNC Practice Lab-II	3	100	40	20	60	30	50	100
4	PRP501	Project work on Plastic Mould Manufacturing	2	296	40	20	60	30	50	100
SIXTH SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	EST601	Strength of Material - II	2	48	40	16	60	24	40	100
2	PCT601	Mould Design -II	4	108	40	16	60	24	40	100
3	EST602	Hydraulics & Pneumatics - II	2	60	40	16	60	24	40	100
4	PCT602	CNC Technology	4	48	40	16	60	24	40	100
5	HST601	Industrial Management & Environmental Science (ES)	2	48	40	16	60	24	40	100
6	EST603	Adv. Computer Aided Design	2	48	40	16	60	24	40	100
B. PRACTICAL										
1	PCP601	Precision Manufacturing lab - II	3	296	40	20	60	30	50	100
2	PCP602	Adv. CAD Practice Lab -I	3	100	40	20	60	30	50	100
3	ESP603	Hydraulics & Pneumatic Lab	2	100	40	20	60	30	50	100
4	PRP601	Project Work on Press Tool Manufacturing	2	296	40	20	60	30	50	100

APPENDIX - II

DIPLOMA IN MECHATRONICS (DIM)

FIRST SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	HST101	Communicative English & Universal Human Values (UHV)	1	36	40	16	60	24	40	100
2	BST101	Engineering Physics	1	48	40	16	60	24	40	100
3	BST102	Engineering Mathematics-I	2	72	40	16	60	24	40	100
4	EST101	Fundamental of Electrical & Electronics Engineering	2	72	40	16	60	24	40	100
5	EST102	Engineering Drawing-I	2	96	40	16	60	24	40	100
6	EST103	Production Technology-I	2	36	40	16	60	24	40	100
B. PRACTICAL										
1	ESP101	Basic Electrical Lab	2	198	40	20	60	30	50	100
2	ESP102	Basic Electronics Lab	2	198	40	20	60	30	50	100
3	BSP101	Engineering Physics Lab	2	198	40	20	60	30	50	100
4	ESP103	Engineering Workshop Lab-I	2	198	40	20	60	30	50	100
SECOND SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	BST202	Engineering Mathematics-II	2	84	40	16	60	24	40	100
2	BST203	Engineering Chemistry	1	36	40	16	60	24	40	100
3	BST201	Computer Application	1	48	40	16	60	24	40	100
4	EST202	Machine Drawing	2	84	40	16	60	24	40	100
5	EST201	Electrical & Electronics-II	2	72	40	16	60	24	40	100
6	HST201	Communicative English- II	1	36	40	16	60	24	40	100
B. PRACTICAL										
1	BSP201	Computer Application Lab	2	198	40	20	60	30	50	100
2	HSP201	Communicative English Lab	2	198	40	20	60	30	50	100
3	BSP202	Engineering Chemistry Lab	2	198	40	20	60	30	50	100
4	ESP201	Engineering Workshop Lab-II	2	198	40	20	60	30	50	100

THIRD SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	PCT304	Machine Tool Technology	4	84	40	16	60	24	40	100
2	PCT302	Electrical Engineering Science	4	84	40	16	60	24	40	100
3	PCT301	Analog Electronics	4	36	40	16	60	24	40	100
4	EST303	Engineering Mechanics	2	36	40	16	60	24	40	100
5	EST302	Engineering Metrology	2	48	40	16	60	24	40	100
6	PCT303	Digital Electronics	4	72	40	16	60	24	40	100
B. PRACTICAL										
1	ESP301	Basic CAD (E&M) Lab	2	198	40	20	60	30	50	100
2	PCP303	Mechanics Lab	3	198	40	20	60	30	50	100
3	PCP302	Electrical Lab	3	198	40	20	60	30	50	100
4	PCP301	Electronics Lab	3	198	40	20	60	30	50	100
FOURTH SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	EST401	Mechanical Engineering Science	2	48	40	16	60	24	40	100
2	EST402	Material Technology	2	36	40	16	60	24	40	100
3	BST401	Computer Programming & Networking	1	84	40	16	60	24	40	100
4	PCT401	Measurement & Mechatronics System	4	36	40	16	60	24	40	100
5	BST402	Applied Mechanics	1	84	40	16	60	24	40	100
6	HST401	Industrial Management & Environmental Science	2	72	40	16	60	24	40	100
B. PRACTICAL										
1	PCP401	Analog Electronics Lab	3	198	40	20	60	30	50	100
2	BSP401	Computer Programming Lab	2	198	40	20	60	30	50	100
3	PCP402	CAD/CAM Lab	3	198	40	20	60	30	50	100
4	PCP403	Digital Electronics Lab	3	198	40	20	60	30	50	100

FIFTH SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	PCT502	Micro Processor	4	36	40	16	60	24	40	100
2	PCT505	Industrial Electronics	4	36	40	16	60	24	40	100
3	PCT503	Control System	4	48	40	16	60	24	40	100
4	PCT501	Hydraulics and Pneumatics	4	72	40	16	60	24	40	100
5	PCT506	Logic Control Design	4	72	40	16	60	24	40	100
6	PCT504	Mechatronics System Design	4	84	40	16	60	24	40	100
B. PRACTICAL										
1	PCP501	Microprocessor Lab	3	198	40	20	60	30	50	100
2	PCP504	Logical Design Lab	3	198	40	20	60	30	50	100
3	PCP502	Hydraulics & Pneumatics Lab	3	198	40	20	60	30	50	100
4	PCP503	Industrial Electronics Lab	3	198	40	20	60	30	50	100
SIXTH SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	PCT601	Embedded System	4	48	40	16	60	24	40	100
2	PCT605	CNC Technology	4	36	40	16	60	24	40	100
3	PCT604	Digital Signal Processing	4	36	40	16	60	24	40	100
4	BST601	Computer Programming (Python)	1	84	40	16	60	24	40	100
5	PCT602	Robotics	4	84	40	16	60	24	40	100
6	EST601	Industrial Equipment Maintenance	2	84	40	16	60	24	40	100
B. PRACTICAL										
1	BSP601	Computer Programming Lab-II	2	198	40	20	60	30	50	100
2	PCP604	CNC Lab	3	198	40	20	60	30	50	100
3	PCP602	Robotics Lab	3	198	40	20	60	30	50	100
4	PCP601	Embedded System Lab	3	198	40	20	60	30	50	100

APPENDIX - III

DIPLOMA IN AUTOMATION & ROBOTICS (DIAR)

FIRST SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	HST101	Communicative English & Universal Human Values (UHV)	1	36	40	16	60	24	40	100
2	BST101	Engineering Physics	1	48	40	16	60	24	40	100
3	BST102	Engineering Mathematics-I	2	72	40	16	60	24	40	100
4	EST101	Fundamental of Electrical & Electronics Engineering	2	72	40	16	60	24	40	100
5	EST102	Engineering Drawing-I	2	96	40	16	60	24	40	100
6	EST103	Production Technology-I	2	36	40	16	60	24	40	100
B. PRACTICAL										
1	HSP102	Communication Lab	2	198	40	20	60	30	50	100
2	BSP101	Applied Physics Lab	2	198	40	20	60	30	50	100
3	ESP101	Engineering Workshop Lab	2	198	40	20	60	30	50	100
4	ESP102	Electrical Lab-I	2	198	40	20	60	30	50	100
SECOND SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	BST202	Engineering Mathematics-II	2	84	40	16	60	24	40	100
2	BST203	Engineering Chemistry	1	36	40	16	60	24	40	100
3	BST201	Applied Mechanics	1	48	40	16	60	24	40	100
4	EST202	Engineering Drawing - II	2	84	40	16	60	24	40	100
5	EST201	Fundamental of Electrical & Electronics Engineering - II	2	72	40	16	60	24	40	100
6	HST201	Communicative skill in English	1	36	40	16	60	24	40	100
B. PRACTICAL										
1	BSP201	Mechanics Lab	2	198	40	20	60	30	50	100
2	HSP201	Communicative English Lab	2	198	40	20	60	30	50	100
3	BSP202	Engineering Chemistry Lab	2	198	40	20	60	30	50	100
4	ESP201	Electronics Lab-I	2	198	40	20	60	30	50	100

THIRD SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	PCT301	Analog & Digital Electronics	4	72	40	16	60	24	40	100
2	PCT302	Electrical Technology	4	72	40	16	60	24	40	100
3	PCT303	Fundamental of Automation	4	72	40	16	60	24	40	100
4	EST301	Computer Application (C/C++)	2	72	40	16	60	24	40	100
5	HST301	Environmental Science	1	36	40	16	60	24	40	100
6	EST302	Engineering Metrology	2	36	40	16	60	24	40	100
B. PRACTICAL										
1	PCP301	Analog & Digital Electronics Lab	3	198	40	20	60	30	50	100
2	PCP302	Electrical Technology Lab	3	198	40	20	60	30	50	100
3	ESP301	Computer Application Lab (C/C++)	2	198	40	20	60	30	50	100
4	ESP302	Basic CAD (E&M) Lab	2	198	40	20	60	30	50	100
FOURTH SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	PCT401	Fundamental of Robotics	4	72	40	16	60	24	40	100
2	PCT402	Sensors and Actuators	4	48	40	16	60	24	40	100
3	BST401	Computer Programming & Networking (Python)	1	72	40	16	60	24	40	100
4	PCT403	Microprocessor and Micro Controller	4	72	40	16	60	24	40	100
5	EST401	Measurement System	2	48	40	16	60	24	40	100
6	HST401	Industrial Management (Entrepreneurship Management)	2	48	40	16	60	24	40	100
B. PRACTICAL										
1	PCP401	Sensors and Actuators Lab	3	198	40	20	60	30	50	100
2	PCP402	Microprocessor and Micro Controller Lab	3	198	40	20	60	30	50	100
3	BSP401	Computer Programming & Networking Lab (Python)	2	198	40	20	60	30	50	100
4	PCP403	Robotics Lab-I	3	198	40	20	60	30	50	100

FIFTH SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	EST501	Computer Programming (Cloud Computing & Cyber Security)	2	72	40	16	60	24	40	100
2	PCT501	Hydraulics and Pneumatics	4	72	40	16	60	24	40	100
3	PCT502	Logical Control Design (PLC & Electrical Drives)	4	72	40	16	60	24	40	100
4	PCT503	Control System	4	48	40	16	60	24	40	100
5	PCT504	Mechatronics System	4	48	40	16	60	24	40	100
6	PCT505	Industrial Electronics (IOT)	4	48	40	16	60	24	40	100
B. PRACTICAL										
1	PCP501	Hydraulics and Pneumatics Lab	3	198	40	20	60	30	50	100
2	PCP502	PLC Programming Lab	3	198	40	20	60	30	50	100
3	PCP503	Power Electronics & IOT Lab	3	198	40	20	60	30	50	100
4	ESP501	Computer Programming Lab (Cloud Computing & Cyber Security)	2	198	40	20	60	30	50	100
SIXTH SEMESTER										
Sl. No.	Subject Code	Subject	Credit Point	Total Hours	Sessional Marks		Examination Marks		Pass Marks Min.	Total Marks
					Max.	Pass	Max.	Pass		
A. THEORY										
1	PCT601	Advance Manufacturing System/industry	4	48	40	16	60	24	40	100
2	PCT602	Industrial Robotics	4	72	40	16	60	24	40	100
3	EST601	Embedded System	2	72	40	16	60	24	40	100
4	PCT603	Industrial Automation-DCS-HMI-SCADA	4	72	40	16	60	24	40	100
5	EST602	Industrial Equipment Maintenance	2	48	40	16	60	24	40	100
6	EST603	AI & ML	3	48	40	16	60	24	40	100
B. PRACTICAL										
1	PCP601	Industrial Automation - DCS-HMI-SCADA LAB	3	198	40	20	60	30	50	100
2	ESP601	AI & ML Lab	3	198	40	20	60	30	50	100
3	PCP602	Robotics Lab -II	3	198	40	20	60	30	50	100
4	ESP602	CNC/3D Printing/Industry 4.0 Lab	2	198	40	20	60	30	50	100

APPENDIX – IV

(Common to Diploma in Tool & Die Making, Diploma in Mechatronics & Diploma in Automation & Robotics)

Theory sessional marks includes 10 marks record/assignment and 30 marks internal test conducted for 1 hr. duration.

Practical Sessional marks includes internal Viva Voce, Project Work/ Exercise, Attendance, Discipline.

CARRY FORWARD MARKS FOR AWARD OF DIPLOMA -12.5% for each Semester.

CARRY FORWARD MARKS	Tool & Die Making	Mechatronics	Automation & Robotics
1 st & 2 nd Semester (12.5% each)	2000 - 250	2000 - 250	2000 - 250
3 rd & 4 th Semester (12.5% each)	2000 - 250	2000 - 250	2000 - 250
5 th & 6 th Semester (12.5% each)	2000 - 250	2000 - 250	2000 - 250
Cumulative Total	750	750	750

DIVISIONS GIVEN AS PER PERCENTAGE OF MARK

1. Distinction - $\geq 75\%$ i.e. equal & above 75% marks
2. $\geq 60\%$ AND $< 75\%$: 1st DIVISIONS
3. 55% TO $< 60\%$: 2nd DIVISIONS
4. LESS THEN 55% : 3rd DIVISION

APPENDIX - V

EXAMINATION RULES

Eligibility Criteria

Attendance - Minimum attendance necessary for appearing in the end semester examination shall be 80%.

Over all Pass Criteria

1. In each semester a trainee must secure 40% in each theory subject (Sessional Marks + Semester End Examination Marks). However, he/she has to secure minimum 40% in Semester End Examination.
2. He/She should secure an aggregate marks of 45% including practical marks.
3. If a trainee passes in all the subjects and fails to attain the aggregate marks, he/ she shall be detained and continue his/her study in the next batch of trainees.
4. In each semester a trainee must secure 50% in practical. (Sessional Marks + Semester End Examination marks). However he / she has to secure minimum 50% in Semester End Examination.
5. The Trainees who shall carry back papers have to clear the back papers in subsequent two consecutive chances after which they shall not be allowed to appear Examination & No. Diploma shall be awarded leading to termination of training forthwith.
6. The trainees who shall fail in more than 4 subjects taken together in both the semesters in a particular academic year shall be detained & have to repeat all the papers along with the next batch of trainees.
7. No trainees shall be allowed to repeat a year more than once or to repeat more than two years during the whole course. In case a trainee who fails to pass semester examinations within these rules, the trainee shall be terminated for his unsatisfactory performance in terms of the agreement bond and his surety money will be forfeited.
8. To appear back papers (repeat failed subjects) a fee of Rs.200/- per subject shall be charged.
9. Successful trainees shall be issued Diploma Certificates from the centre after successful completion of the Courses.

10. Examination shall be conducted according to such programme as may be notified by the Senior Manager (Training) or an officer looking after his duties.
11. Examiners or Board of Examiners shall be appointed by the General Manager which may include Internal Examiners (Officials of the Centre) and External Examiners. Examiners or Board of Examiners shall be assisted by the officials of the Centre in the manner to be decided by the General Manager.
12. Failure to appear in the examinations for reasons whatsoever shall be treated as failure to qualify (pass) in the Final Examination.
13. In case a trainees desires to get his answer book for theory examination (s) and his performance in practical examination (s) re-evaluated he may make a request for the same on form (F/CTTC/BBS/TRG/RA) prescribed for the purpose and pay a fee of Rs. 100/- for each subject he desires to be re-evaluated. For this purpose theory and practical for each subject shall be treated as separate and application fee is required to be paid for each. At the same time Trainees will have to give an undertaking that he shall accept the result of re-evaluation even if it amounts in reduction in the marks obtained by him. On the basis of re-evaluation no alternation shall be made to the marks if the change is less than 5% of the original marks unless change is from fail to pass or change of Division obtained by him. The application for re-evaluation should be made within 15 days of declaration of the result. Late applications will not be considered.

APPENDIX - VI

RULES OF ATTENDANCE, TIME KEEPING, UNIFORMS, CONDUCT -ETC.

1. Every trainee shall be present at his place of training in accordance with the programme prepared and notified. He shall maintain utmost punctuality in time keeping. If he is not found in his place of training without any justification to the satisfaction of his Batch Incharge or any other officer or Expert of the Centre, he shall be marked absent for the day, in addition to disciplinary action which might be taken against him.
2. No late coming shall be allowed. Depending on whether a trainee is late in the forenoon or in the afternoon his late attendances shall be treated as half day absence either in the First half or in the Second half.
3. Every trainee shall take permission from Concerned Officer to leave his place of training.
4. Trainees shall attend training classes (theory as well as practical) in uniform and shoes as may be prescribed from time to time by the Centre. Trainees shall at their costs, arrange uniforms and full shoes and other article of dress (full paints, shirts etc.) themselves. No trainee shall be allowed to attend in chappals, sleepers, sandals or in any loose dress considered to be unsafe by the Batch Incharges and other Officers of Training Department and such trainee shall be sent back from the Centre and marked absent on that day.
5. Trainees shall maintain their uniform in neat and tidy condition. They shall replace the broken buttons etc. and mend the damaged uniform.
6. Trainees shall arrange at their cost, all stationery, drawing and other instruments and books prescribed for the course, Centre may, however, at its sole discretion, issue some stationery for the sake of uniformity for which cost shall be payable by trainees.
7. Trainees may borrow such books from the Centre as the Centre may earmark for the purpose from time to time.
8. The Trainees shall not be involved directly or indirectly in Ragging/ equivalent activities. As per honourable Supreme Court Order Ragging is treated as criminal activity and punishable by law. Any trainee found involve in Ragging shall be punished as deemed fit including termination of training. All the trainees shall have to submit an undertaking at the time of admission/ Re-admission not to be involved in

Ragging. Parents of the trainees shall also have to submit an undertaking that their kin shall not be involved in Ragging otherwise shall be punished deemed fit.

9. (a) During the course of training, trainees shall handle and maintain Centre's property, namely machines, instruments, tools and equipment, special and standard accessories, electrical equipment including switch boards, switches, light, fans, hand tools, furniture items; sanitary & water supply fittings, building and other civil structures, lawn, raw materials, consumables and other articles of the Centre with utmost care so as not to cause any damage, excessive wear and tear, deface or tarnish the appearance or good looks. Trainees should refrain from writing any-thing on the walls, other civil structures, plant and equipment or otherwise marking them in any way, sticking bills, posters etc.
- (b) Trainees shall strictly follow the procedures introduced from time to time and instructions issued by the General Manager or any other official of the Centre authorised to do so with regard to the following.
 - (1) Issue and return of Instruments, tools, etc. from Store.
 - (2) Deposit of finished and semi-finished practical exercises jobs.
 - (3) Reporting of breakages.
 - (4) Proper maintenance of machines and other plant and equipment, accessories etc. including periodic lubrication.
 - (5) Disposal of boring, turning and other scrap.
 - (6) Cleanliness of machines including of shop floor around machines.
 - (7) Lights and Fans
 - (8) Operation of machines during power cuts.
 - (9) Tool and material Godowns.
 - (10) Industrial lockers.
 - (11) Tool lockers and material lockers.
 - (12) Handling over/taking over of machines and other equipment.
 - (13) Allotment and operation of machines etc.
 - (14) Any other subject not included above.

- (c) Any loss or damage to the Centre's property arising out of a willful act of a trainee or due to his negligence or non compliance of instructions, safety rules or the established conventional norms of use of that property, shall be recovered from the trainee and/or his surety guardians. The decision of the General Manager as to whether the loss or damage has occurred out of a willful act or negligence or non-compliance as aforesaid, or not, about the amount of loss/damage, shall be final binding on the trainee & his surety and guardians.
10. The Centre shall provided opportunities of training for the course to trainees who, at their own free will, decide to undergo training at the Centre as per terms and conditions known and understood by them including the powers of the Governing Council and other competent authorities to amend to terms and conditions at any time and without notice and to formulate and amend procedures, rules whenever considered necessary. Trainees shall not in any way resort to making organised claims, protests or any other activity for change of terms and conditions of their admission to the course, or to any form of collective bargaining. Difficulties experienced, if any, by them should be brought to the notice of the Batch Incharges or other Officials of the Centre in individual capacities, in the manner which may be prescribed from time to time. Trainees are not allowed to form any union or association.
11. No meeting/picnic shall be conducted by the trainees inside the premises of the Centre including and other sub-office, cell or any building, without the prior permission of the General Manager or any other authority competent to give such permission.
12. Period spent by the trainees, even if it is within CTTC premises in a manner otherwise than according to programme of training including examinations, class test, etc. shall be treated as full day's absence for this purpose.
13. Inviting other to act in any manner which goes against the interest and objectives of the Centre or against the intention and purpose of any Rules of the Centre or instructions issued, shall be treated as gross-misconduct of the trainee(s).
14. The following shall be deemed as misconduct of the trainee(s).
- (a) Insubordination or disobedience whether alone or in combination with others.
 - (b) Theft, fraud, any dishonest act, bribery or any illegal gratification.

- (c) Possession, distribution and display, within the Centre's premises, of any unauthorised bills, pamphlets, books, placards, banners.
 - (d) Coming to the Centre in drunken condition or under the effect of any intoxicants/narcotics or possession of any such things or any lethal weapons in the Centre's premises.
 - (e) Gambling within the Centre's premises including any other Sub-office , building of the Centre.
 - (f) Smoking is prohibited within the campus.
 - (g) Refusal to receive an official document.
 - (h) Deliberate false statement, falsification of records, impersonation, suppression of facts.
 - (i) Willful failure to report occurrences of any information which may endanger other's life of Centre's property.
 - (j) Private or personal work within CTTC premises and with Centre's facilities whatsoever.
 - (k) Staying inside Centre's premises outside training hours except when permitted or authorised.
 - (i) Violation or non-compliance of any Rules or instructions issued.
 - (m) Any other act which goes against the interest and objectives of the centre of against the intention and purposes of any Rules, Procedures and standing instructions.
15. During the course, the trainees shall not apply for any employment, scholarship, travelship, part time work of any other training otherwise than through the General Manager. They shall submit application through proper channel which will be considered on merits of each case.
16. Trainees shall not commercialise any, discovery made in the course of training of patent of the Centre.

HOSTEL FACILITY

1.0 Admission

- 1.1 Bonafide Trainees of the Centre only are eligible for admission to the Hostel as Boarders. It is not compulsory for any trainee to stay in the Hostel. Hostel facility shall be provided subject to availability of accommodation. Trainees seeking admission to the Hostel shall apply through Chairman (HAB) to the Hostel Superintendent. The Centre acting through Hostel Administration Board, Hostel Superintendent or otherwise reserves the right to refuse admission to any trainee. If a trainee secures admission he shall become boarder of the Hostel on payment of fees as may be prescribed from time to time.
- 1.2 The Centre may also grant admission to employees \ of the Centre who shall become boarders on payment of such fees as may be prescribed, from time to time for them.
- 1.3 The accommodation to the Boarders shall be provided in five seater dormitory rooms.
- 1.4 Admission to the Hostel shall be upto 15 days after the date of completion of engagement as a trainee of the centre. The Centre acting through Hostel Administration Board or Hostel Superintendent reserves the right to curtail the period of admission without assigning any reason, in which case admission shall be treated to be withdrawn from the date to be specified. For any period of over-stay, all hostel charges shall be payable to the centre without prejudice to rights of the Centre to evict such inmates.
- 1.5 Hostel Rooms shall be allotted every year in the month of June when boarders report back after expiry of vacations. Allotment of rooms shall be done on the basis of the ranks secured in the entrance examination for first two semesters. For next 4 semesters of seats are reserved on the basis of the semester examination marks & attendance. Hostel Superintendent may, however, allot rooms temporarily pending final allotment. The Hostel Superintendent may also change the room of any boarder.
- 1.6 No boarder is permitted to stay in the Hostel during vacation except under exceptional circumstances. The boarder desirous of such stay in the Hostel shall seek prior permission from the Hostel superintendent.
- 1.7 Picnic/Get-together is strictly prohibited during the training period.

- 1.8 No boarder is permitted to allow to stay non-boarder/friends in his room without prior permission from hostel warden.
- 1.9 The admission of the Hostel, to provide accommodation, is made not as a condition of engagement of trainees at the Centre. The Centre acting through the Hostel Administration Board. Hostel Superintendent or otherwise, shall have absolute discretion to get the accommodation vacated by expulsion or otherwise withdrawing admission *from* any date without assigning any reason(s) thereof.

2.0 Fees

- 2.1 The Trainees admitted as boarders shall pay the following fees.

(a) Hostel Fees:

- (i) Admission Fees : Rs. 500/- to be paid on admission.
- (ii) Security Deposit : Rs. 1000/- to be paid on admission.
- (iii) Mess Security Deposit : Rs. 4000/- to be paid on admission.
- (iv) Establishment Charges : Rs. 9600/- per semester to be paid in the beginning of semester.
- (v) Electricity Charges* : Rs. 600/- per semester.

(b) Mess Charges:

- (i) Mess Advance : Rs. 5500/- to be paid per semester in begning of semester admission.
- (ii) Meal charges : Will be calculated or active every month on actual basis.

- 2.2 The Security Deposit is refundable to the Boarders without interest when they leave the Hostel after adjustment of pending dues, if any. Similarly, Mess Security shall be refundable to the boarders by the Hostel Committee when they leave the Hostel after adjustment of pending dues.
- 2.3 Additional amount of Rs. 10/- per month per boarder will be paid by the Centre for the Hostel Committee towards recurring expenditure for the Hostel and the mess attached to the Hostel. The Hostel Committee Account shall be operated by the Chairman of the Hostel Committee.
- 2.4 All fees are payable in advance except the Mess charges which are to be paid as per time schedule decided by the Mess Committee.

** Subject to change as per notification of supplier of electricity (MIS TPCODL)*

Instructions for marking Answers in the Entrance Exam (Part-I and Part-II)

The candidates are provided with one question paper and one answer sheet containing total 60 questions for Part-1 and one Question-cum-Answer Sheet for Part-II Exam. Write correctly you ROLL NO & DATE and put your signature on the answer sheet in the provided space using ball point pen only in Part-I & Part-II.

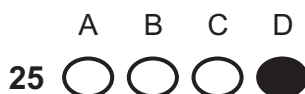
Part – I (60 Marks)

1. Each correct answer shall fetch 1 mark but for every wrong answer $\frac{1}{4}$ mark shall be deducted.
2. Part-1 questions are of multiple choice type. There are four options for each questions. In the answer sheet there are 4 answer ovals marked A,B,C,D at the top these ovals are to be darkened as per the following instructions.

Correct method of Marking Answers for Part-I

3. Use HB pencil for darkening the ovals against the right answer.
4. Do no use H/2H/3H etc. pencils. The mark made by such hard pencils, will be too light and will not be read by the computer.
5. Do not use a soft pencil like B/2B/3B, etc. The mark will be too dark and if you want to change your answer by erasing the first one, there may be smudges or dark marks in and around the oval of the erased answer. The computer will read such markings as two answers and will give no marks for that answer.
6. Do no use ink pen or ball point pen to mark your Answers.

For example, if the answer to questions numbers 25 is 0, you should mark as follows.



Please note that the oval should be dark and should be filled in completely wrong methods of Marking Answers.

Some incorrect method of marking answers are shown below:



(Used of tick marks)



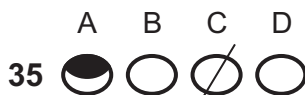
(Use of line marks)



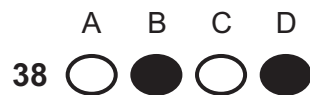
(Darkening outside the oval)



(Use of cross marks)



(Half filled Marks)



(Multiple answer)



(Leaving some portion blank)



(Used of dot)



(Invalid mark outside the oval)

How to change you answer: If you wish to change answer, ERASE completely the already darkened oval by using a good quality eraser and darken the new oval indicating the new answer. Do not darken more than one oval. If more than one oval is darkened the new answer will be counted as wrong by the computer.

Part-II (40 Marks)

1. Part-II will be of subjective type / fill up the blanks. With 10 questions each from Mathematics & Physics and each question shall carry 2 marks.
2. Do the necessary calculations if required on the backside of Question-cum-Answer Sheet & write only answer in the blank given in question paper.

HIGHLIGHTS

1. Hall tickets may be collected in person after closing date (First two days)
2. Hall tickets will be posted in ordinary post only. In case if anyone not received, they may collect duplicate Hall ticket from Centre before two days of Entrance Examination by producing one more photograph. No documents except photo is required along with application form.

LAB FACILITIES AVAILABLE



CNC LAB



LANGUAGE LAB



DRAWING HALL



WORKSHOP



ELECTRONICS LAB



ELECTRICAL LAB



INDUSTRY 4.0 LAB



SCIENCE LAB



OUR RECRUITERS

and More...