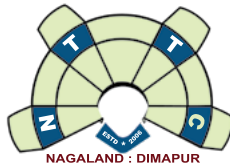


# Nagaland Tool Room & Training Centre

(A Govt. of Nagaland Society, Industries & Commerce Deptt)  
Approved By AICTE, New Delhi, Affiliated to SCTE, Nagaland  
Dimapur : Nagaland

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Motto: **Technology-Innovation-Development**



**PROSPECTUS**  
of  
**Diploma in Tool & Die Making**

GOVERNMENT OF NAGALAND  
DEPARTMENT OF HIGHER AND TECHNICAL EDUCATION  
NAGALAND; KOHIMA

**NOTIFICATION**

**Dated Kohima, the 13<sup>th</sup> Feb.2014**

**NO.HTE/TE/10-3/04 (Pt)** : As decided in the 7<sup>th</sup> Meeting of State Council for Technical Education held on 12<sup>th</sup> September 2013, the Governor of Nagaland is pleased to recognize "4-year Diploma in Tool & Die Making" being taught at Nagaland Tool Room & Training Centre, Dimapur, as equivalent to 3-year Diploma in Mechanical Engineering.

**Sd/- F.P.SOLO**  
**Commissioner and Secretary to the Govt. of Nagaland**

**NO.HTE/TE/10-3/04 (Pt)**

**Dated Kohima the 13<sup>th</sup> Feb. 2014**

Copy to:

1. The Sr. PS to Hon<sup>ble</sup> Parliamentary Secretary, Technical Education, Nagaland, Kohima.
2. The Comm. & Secretary to the Govt. of Nagaland, Deptt. of Industries & Commerce, Nagaland, Kohima.
3. The Director of Technical Education, Nagaland, Kohima.
4. The Director of Industries & Commerce, Nagaland, Kohima.
5. Chief Executive Officer, Nagaland Tool Room & Training Centre, Dimapur.
6. Publisher, Nagaland Gazettee for Publication in the next issue.
7. Office copy/Guard file.

*dhru*  
13/02/14  
(IMTIMENLA)

Deputy Secretary to the Govt. of Nagaland



# STATE COUNCIL FOR TECHNICAL EDUCATION NAGALAND

KOHIMA :: NAGALAND

Below Civil Secretariat Complex, Kohima – 797004

## CERTIFICATE OF AFFILIATION

NO	Registration No.	Name of Course	Name of Institute	Type	Date	Validity	Remarks
1	SCTE/001/2018	DIPLOMA IN TOOL & DIE MAKING	NAGALAND TOOL ROOM AND TRAINING CENTRE	UNDER GOVERNMENT SOCIETY	03-04-2019	2019-20	

- Renewal of Affiliation is to be done annually except for NBA Accredited course/s which shall be for 2 (Two) years subject to fulfilment of Norms and Guidelines of the Council

  
SECRETARY  
SCTE

Directorate of Technical Education  
Nagaland : Kohima

# GOVERNING BODY/ADMINISTRATIVE BODY

NTTC has been registered with the Govt. of Nagaland vide No. H/RS-3873 dt. 01/11/04 under Registration of Societies Act 1860. The management of the affairs of the Centre rest with Governing Council, which is a constituted body appointed by the Governor of Nagaland. The administrative head of the Department of Industries & Commerce, Govt. of Nagaland is the Chairman of the Governing Council body.

***The present Governing Council Members as on 18<sup>th</sup> April 2019.***

**GOVERNMENT OF NAGALAND  
INDUSTRIES AND COMMERCE DEPARTMENT**  
*e-mail: gon.indcom@gmail.com*

## NOTIFICATION

Dated Kohima, the 18<sup>th</sup> April, 2019.

**NO.I&C/MTTC-2/GC/2010** : In pursuance to Rule 5 of the Memorandum of Association of Nagaland Tool Room & Training Centre(NTTC) and in view of recent transfer/retirement of members of Governing Council of Nagaland Tool Room & Training Centre(NTTC), the Governor of Nagaland is pleased to re-constitute the Governing Council of Nagaland Tool Room & Training Centre(NTTC), Dimapur comprising the following Officers with immediate effect:

1. Smti Lithrongla G Chishi, IAS, Commr. & Secretary, Industries & Commerce Dept. – Chairperson
2. Shri V. Kezo, Special Secretary (Finance Dept.), Kohima – Member
3. Shri Nosazol Charles, Addl. Dev. Commissioner, Plng & Coord. Dept. – Member
4. Director & Regional Officer, AICTE (Eastern), Kolkata – Member
5. Er. Arjun Singh, Director, Technical Education, Kohima – Member
6. Shri. C. Lotam Chang, Addl. Director(HoD), Employment, Skill Development & Entrepreneurship, Kohima – Member
7. Shri C. M. Lotha, M.D., NIDC Ltd., Dimapur – Member
8. Er. L. Nungshiyanger Aier, Labour Comm., Dept. of Labour – Member
9. Shri Tali Longchar, Dy. Director(I/C), MSME-DI, Dimapur – Member
10. Er. Petehetuo Maisalhou, Principal, NTTC, Dimapur – Member
11. Er. Kenilo Keppen, AGM, NTTC, Dimapur – Member
12. Representative from the O/o the Dev. Commissioner, MSME, New Delhi – Member
13. Shri. K. Hokishe Assumi, Addl. Director (HoD), Ind. & Commerce Dept. & CEO, NTTC. – Member Secretary

This supersedes the previous Notification of even no. dated 27<sup>th</sup> June, 2018.

Sd/- **LITHRONGLA G CHISHI, IAS**

Commissioner & Secretary to the Govt. of Nagaland.

// Dated Kohima, the 18<sup>th</sup> April, 2019.

**NO.I&C/MTTC-2/GC/2010**

Copy to:

1. The Commissioner & Secretary to the Governor of Nagaland.
2. The Principal Secretary to the Chief Minister of Nagaland.
3. The P.S. to Advisor (I&C), Nagaland.
4. The OSD to Chief Secretary, Nagaland.
5. The Publisher, Nagaland Gazette Kohima for Publication and necessary action.
6. All concerned Member.
7. Guard file.

(SENTIWAPANG AIER)

Joint Secretary to the Govt. of Nagaland.

# All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg,Vasant Kunj, New Delhi-110070 Website: [www.aicte-india.org](http://www.aicte-india.org)



## APPROVAL PROCESS 2020-21

### Extension of Approval (EoA)

F.No. Eastern/1-7014350363/2020/EoA

Date: 30-Apr-2020

To,

The Commissioner & Secretary  
(Higher Education), Govt. of Nagaland,  
New Sectt., Nagaland, Kohima-797001

**Sub: Extension of Approval for the Academic Year 2020-21**

Ref: Application of the Institution for Extension of Approval for the Academic Year 2020-21

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2020 notified by the Council vide notification number F.No. AB/AICTE/REG/2020 dated 4<sup>th</sup> February 2020 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

<b>Permanent Id</b>	1-2094042981	<b>Application Id</b>	1-7014350363
<b>Name of the Institute</b>	NAGALAND TOOL ROOM & TRAINING CENTRE	<b>Name of the Society/Trust</b>	NAGALAND TOOL ROOM & TRAINING CENTRE
<b>Institute Address</b>	NAGALAND TOOL ROOM & TRAINING CENTRE, NEW INDUSTRIAL, NEAR SUB-JAIL JUNCTION, TINALI, NH-36, DIMAPUR, NAGALAND 797112, DIMAPUR, DIMAPUR, Nagaland, 797112	<b>Society/Trust Address</b>	NEW INDUSTRIAL, NEAR SUB-JAIL JUNCTION, TINALI, NH- 36, DIMAPUR, NAGALAND 797112, DIMAPUR, DIMAPUR,,7971 12
<b>Institute Type</b>	Govt aided	<b>Region</b>	Eastern

To conduct following Courses with the Intake indicated below for the Academic Year 2020-21

Program	Level	Course	Affiliating Body (University /Body)	Intake Approved for 2019-20	Intake Approved for 2020-21	NRI Approval Status	PIO / FN / Gulf quota/ OCI/ Approval Status
ENGINEERING AND TECHNOLOGY	DIPLOMA	TOOL & DIE MAKING	Directorate of Technical Education	30	60	NA	No

It is mandatory to comply with all the essential requirements as given in APH 2020-21 (Appendix 6)

The Institution/ University is having the following deficiencies as per the online application submitted to AICTE and the same shall be complied within Six Months from the date of issue of this EoA

Deficiencies Noted based on Self Disclosure	
Particulars	Deficiency
<b>1. Amenities Area</b>	
Cafeteria	Yes
<b>2. Instructional Area – ENGINEERING AND TECHNOLOGY-Diploma</b>	
Drawing Hall	Yes
<b>3. Library Facilities</b>	
Library Management Software	Yes
<b>4. Other Facilities Deficiency</b>	
Group accident policy for employees	Yes
Rain Water Harvesting	Yes
Implementation of student Induction Programme	Yes
Waste Management and a sustainable Green Campus	Yes

\*Please refer Deficiency Report for details

### **Important Instructions**

1. The State Government/ UT/ Directorate of Technical Education/ Directorate of Medical Education shall ensure that 10% of reservation for Economically Weaker Section (EWS) as per the reservation policy for admission, operational from the Academic year 2020-21 is implemented without affecting the reservation percentages of SC/ ST/ OBC/ General. However, this would not be applicable in the case of Minority Institutions referred to the Clause (1) of Article 30 of Constitution of India. Such Institution shall be permitted to increase in annual permitted strength over a maximum period of two years beginning with the Academic Year 2020-21
2. The Institution offering courses earlier in the Regular Shift, First Shift, Second Shift/Part Time now amalgamated as total intake shall have to fulfil all facilities such as Infrastructure, Faculty and other requirements as per the norms specified in the Approval Process Handbook 2020-21 for the Total Approved Intake. Further, the Institutions Deemed to be Universities/ Institutions having Accreditation/ Autonomy status shall have to maintain the Faculty: Student ratio as specified in the Approval Process Handbook. All such Institutions/ Universities shall have to create the necessary Faculty, Infrastructure and other facilities WITHIN 2 YEARS to fulfil the norms based on the Affidavit submitted to AICTE.
3. In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.
4. Strict compliance of Anti-Ragging Regulation: - Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 373/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

**Prof.Rajive Kumar**  
**Member Secretary, AICTE**

Copy to:

1. **The Director Of Technical Education\*\*, Nagaland**
2. **The Principal / Director,**  
NAGALAND TOOL ROOM & TRAINING CENTRE  
Nagaland Tool Room & Training Centre, New Industrial, Near Sub-Jail Junction, Tinali, Nh-36, Dimapur, Nagaland  
797112,  
Dimapur,Dimapur,  
Nagaland,797112
3. **The Secretary / Chairman,**
4. **The Regional Officer,**  
All India Council for Technical Education  
College of Leather Technology Campus  
Block LB, Sector III, Salt Lake City  
Kolkata - 700 098, West Bengal
5. **Guard File(AICTE)**

Note: Validity of the Course details may be verified at <http://www.aicte-india.org/>

\*\* Individual Approval letter copy will not be communicated through Post/Email. However, consolidated list of Approved Institutions(bulk) will be shared through official Email Address to the concerned Authorities mentioned above.

## **Inauguration:**

The Nagaland Tool-Room & Training Centre (NTTC), Dimapur was established by the Government of Nagaland with the assistance of the Government of India. It was formally inaugurated on 9th August 2006 by the then Hon'ble Minister, Shri. Khekiho Zhimomi, for Industries & Commerce, Sericulture and Border Affairs.

## **Objectives:**

- Providing common facilities to Industries & Entrepreneurs.
- Development of small enterprises.
- Development of qualified skilled manpower.
- Development of youth for employment.
- Creation of self-employment opportunities.
- Inculcation of spirit of competitiveness.

## **Facilities:**

- State of the art production wing with machines including CAD/ CAM, CNC Milling, CNC lathe, CNC-EDM, CNC-Wire EDM, Jig Grinding, Injection Moulding, Heat Treatment, Surface Grinding, Cylindrical Grinding, Hydraulic Press, etc.
- Comprehensive range of training & with boarding facilities.

## **Activity Profile:**

- Manufacturing and production of tools and precision components.
- Conducting long term training program of 4 (four) year course on "Diploma in Tool & Die Making" (DTDM).
- Short term courses have been designed to the needs of Industries in upgrading the knowledge and skill in the field of mechanical engg.
- Sponsored and other need based courses.
- Consultancy on machines and tools.
- Conducting of Job-Oriented training programmes.
- Conducting of Seminars & Workshops on technical topics.

# General Information

**Applicability:** These rules shall apply to all the trainees admitted to the training for the Diploma in Tool & Die Making and other training courses at Nagaland Tool Room & Training Centre and shall come into force with immediate effect.

**Definitions:** In these rules and regulations.

- i) "Centre" shall mean Nagaland Tool Room & Training Centre, Dimapur, New Industrial Estate.
- ii) "Governing Council" shall mean the Governing Council of the Centre.
- iii) "Chief Executive Officer" shall mean the Chief Executive Officer of this Centre or any other officer for the time being looking after the duties of the Chief Executive Officer (C.E.O).
- iv) "Project Adviser" shall mean the Project Adviser posted at the Centre by Nagaland Tool Room & Training Centre, Dimapur.

## Course: Diploma in Tool & Die Making

Diploma in Tool & Die Making (DTDM) is a 4 (four) year course. The exact date of starting of the course shall be decided by the Chief Executive Officer. No trainee shall normally be allowed to join late.

**1. Eligibility for Admission:** Candidates having the following qualifications shall be eligible for admission to the course:-

- (i) 10th pass with at least 45% of marks each in maths & science and must be within 16 to 19 years of age. (SC/ST candidates have relaxation of 5% marks and 3 yrs. in the upper age limit).
- (ii) On the scheduled date of starting of the course, the candidate should have attained the age of 16 years but should not be more than 19 years of age ( relaxable to 22 years in case of candidates belonging to SC/ST and handicapped candidates who are otherwise suitable for the course).



2. **Method of Selection:** Candidates who apply for the admission to the course shall be required to take such written examination, tests and interviews as may be decided by the C.E.O. On the basis of performance, candidates will be selected for admission to the course in order of merit.

**Reservation** shall be made for candidates belonging to SC/ST/Orthopaedically handicapped candidates who are suitable for the course, as per rules of the Centre, who will be selected for admission, even if they do not fall within the range of selection in order of general merit, against reserved seats. The Governing Council may from time to time make reservation of seats for certain specified areas or distribute the total number of seats in such a manner as it may deem fit.

3. **Intake & Security Deposit:** The course shall start once a year. The intake of each batch shall be decided by the Governing Council from time to time. The exact date of starting of the course shall be decided by the C.E.O. Only such candidates who have satisfied the requirements mentioned above and undertake to abide by the rules and regulations of the course as enforced from time to time shall be admitted to the course.

The selected candidates will have to make a security deposit of ₹ 1000/- at the time of admission. This deposit is refundable on completion of training course after deduction of any dues to the Centre. The security deposit of ₹ 1000/- shall not earn any interest. **The security deposit will be forfeited if a trainee fails to complete the training and pass the final examination as per rules.**

#### 4. Fee Structure:

Sl.No	Particulars	Amount (in ₹)
1.	Admission fee	- 5000.00
2.	Tuition fee (per month)	- 1750.00
3.	Security Deposit (Refundable)	- 1000.00
	<b>Total</b>	<b>- 7750.00</b>

\* **Semesterial Registration:** An amount of ₹1000 shall be charged per semester

## **5. Vacation and Leave:**

- (i) During the period of training, trainees shall be allowed a vacation of one week after Semester examination inclusive of any holidays, falling within this one week. The exact date or period of vacation shall be fixed every year by the Chief Executive Officer/ General Manager.
- (ii) A trainee who is injured due to an accident during his training at the Centre and is unable to attend his training on account of that, shall be allowed leave for maximum period of 15 days, provided it is certified by medical authorities as may be specified for this purpose by the Chief Executive Officer/ General Manager that he is unable to attend training on account of that injury.
- (iii) No other leave shall be permissible to the trainees during the course. Any other period of absence, including treatment of late coming or any other commission, misconduct or otherwise shall be treated as absence from training for the purpose of completion of requisite percentage of attendance for eligibility for appearing in Term/Final Examination.

**6. Risk and hazards:** The trainees should decide to join course at their own will and at their own risk. In case of any injury or any disablement (temporary or 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 (incase of Minors) shall indemnify the Centre on this account.

**7. Syllabus & Evaluation System:** The Syllabus for the course, for theory as well as practical is given in Appendix-I. The scheme for Assessment of the progress of trainees through Term/Final Examination leading to the award of Diploma Certificate by the Centre is given in Appendix-II. Certificates of completion of training shall be issued only to those trainees who complete the training course and reach the level of proficiency as stipulated therein.

**8. General Rules for Training Programmes:** Rules related to leave, uniform and conduct of trainees during the training course are given in Appendix-III.

## 9. Termination of Training:

- (i) During the course of training the trainees shall strictly abide by the Rules and Regulations of the course and any instructions issued by the Chief Executive Officer/ General Manager or any other official authorized to issue such instructions from time to time. 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 surety money be realized from the surety and/or trainees in terms of the Surety Bond as aforesaid.
- (ii) If any time during the course of training, it is observed that the activities of trainees go against the smooth conduction of the training programmes by the Centre or any other activity of the Centre, or is otherwise detrimental to the interest of the Centre, the training of the trainees may be terminated without notice and without assigning any reasons. The decision of the General Manager of the Centre or any official for the time being looking after the duties of C.E.O, as to whether the activities of the trainees goes against the smooth conduction of the training programme by the Centre or any other activity of the Centre, or is otherwise detrimental to the interest of the Centre or not, shall be final and binding on the trainee, his surety and Guardians. Competant Authority to take action under this rule shall be Chief Executive Officer/ General Manager or any other officer for the time being looking after the duties of Chief Executive Officer. The appellate authority shall be Chief Executive Officer.

**10. Power to Relax:** Chief Executive Officer may relax or modify any rule in Appendix-III, relaxation or any change in rule(s) other than in Appendix-II may be made by Chief Executive Officer/General Manager subject to the post approval by the Governing Council.

**Amendment:** The Rules and Regulations can be amended any time by the Governing Council of the Centre. The Rules and Regulations as amended shall be applicable to all trainees undergoing training at the Centre.

**11. Interpretation:** The powers vested in the Chief Executive Officer and General Manager shall be exercised by the Chief Executive Officer and General Manager. All decisions taken and orders issued by the Chief Executive Officer and General Manager in-charged shall be valid.

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

**13. 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, are 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 trainees shall be governed by these Rules and Regulations.

*APPENDIX-I*

## **SUBJECTS for DTDM Course**

### **FIRST SEMESTER**

<b>Sl No.</b>	<b>Name of Subjects</b>	<b>Training Period</b>
1	Technical English-I	20
2	Engineering Mathematics-I	40
3	Material Technology-I	40
4	Engineering Drawing-1	100
5	Engineering Mechanics-I	40
6	Electrical Technology-1	40
7	Workshop Technology-1	60
8	Metrology-I	40
9	Polymer Science-I	20
10	Workshop Practice	400
	<b>Total</b>	<b>800</b>

### **SECOND SEMESTER**

<b>Sl No.</b>	<b>Name of Subjects</b>	<b>Training Period</b>
1	Engineering Chemistry	20
2	Engineering Mathematics-II	40
3	Material Technology-II	40
4	Engineering Drawing-II	100

5	Engineering Mechanics-II	40
6	Electrical Technology-II	40
7	Workshop Technology-II	60
8	Metrology-II	40
9	Polymer Science-II	20
10	Workshop Practice	400
	<b>Total</b>	<b>800</b>

### THIRD SEMESTER

SI No.	Name of Subjects	Training Period
1	Technical English -II	20
2	Theory of Jigs & Fixtures-I	40
3	Industrial Management-I	40
4	Strength of Material-I	40
5	Engineering Thermodynamics-I	40
6	Theory of Mould-I	40
7	Theory of Press Tool-I	40
8	Workshop Technology-III	40
9	Engineering Drawing-III	80
10	Workshop Practice	420
	<b>Total</b>	<b>800</b>

### FOURTH SEMESTER

SI No.	Name of Subjects	Training Period
1	Engineering Physics	20
2	Theory of Jigs & Fixtures-II	40
3	Industrial Management-II	40
4	Strength of Material-II	40
5	Engineering Thermodynamics-II	40
6	Theory of Mould-II	40
7	Theory of Press Tool-II	40
8	Workshop Technology-IV	40
9	Engineering Drawing-IV	80
10	Workshop Practice	420
	<b>Total</b>	<b>800</b>

### FIFTH SEMESTER

SI No.	Name of Subjects	Training Period
1	Fluid Mechanics	40
2	Machine Elements & Designs	40
3	Press Tool Design-I	80
4	Mould Design-I	80

5	Jigs & Fixtures Design-I	80
6.	CAD/CAM	80
7.	Workshop Practice	400
	<b>Total</b>	<b>800</b>

### SIXTH SEMESTER

Sl No.	Name of Subjects	Training Period
1	Hydraulic & Pneumatics	40
2	Workshop Presentation	40
3	Press Tool Design-II	120
4	Mould Design-II	120
5	Jigs & Fixtures Design-II	80
6	Workshop Practice	400
	<b>Total</b>	<b>800</b>

### SEVENTH SEMESTER

Sl No.	Name of Subjects	Training Period
1	Workshop Practice	800
	<b>Total</b>	<b>800</b>

### EIGHT SEMESTER

Sl No.	Name of Subjects	Training Period
1	Workshop Practice	800
	<b>Total</b>	<b>800</b>

#### Note:

8 Periods per day, 1 Period = 45 Minutes, 40 effective weeks per year and 5 days per week.

### APPENDIX-II

### EVALUATION SYSTEM

#### FIRST SEMESTER

Sl No.	Name of Subjects	Hours	Marks	Pass Marks
1	Technical English -I	2.0	50	
2	Engineering Mathematics-I	2.5	75	
3	Material Technology-I	2.5	75	
4	Engineering Drawing-1	4.0	100	
5	Engineering Mechanics-I	2.5	75	40% for Theory
6	Electrical Technology-1	2.5	75	50% for
7	Workshop Technology-1	3.0	100	practical
8	Metrology-I	2.0	50	& Viva
9	Polymer Science-I	2.0	50	
10	Workshop Practice-	-	300	
	Viva-voce-	-	50	
	<b>Total</b>		<b>1000</b>	

## SECOND SEMESTER

Sl No.	Name of Subjects	Hours	Marks	Pass Marks
1	Engineering Chemistry	2.0	50	
2	Engineering Mathematics-II	2.5	75	
3	Material Technology-II	2.5	75	
4	Engineering Drawing-II	4.0	100	
5	Engineering Mechanics-II	2.5	75	
6	Electrical Technology-II	2.5	75	
7	Workshop Technology-II	3.0	100	
8	Metrology-II	2.0	50	
9	Polymer Science-II	2.0	50	
10	Workshop Practice	-	300	
	Viva-voce	-	50	
	<b>Total</b>		<b>1000</b>	

## THIRD SEMESTER

Sl No.	Name of Subjects	Hours	Marks	Pass Marks
1	Technical English-II	2.0	50	
2	Theory of Jigs & Fixtures-I	2.5	75	
3	Industrial Management-I	2.5	75	
4	Strength of Material-I	2.5	75	
5	Engineering Thermodynamics-I	2.5	75	
6	Theory of Mould-I	2.5	75	
7	Theory of Press Tool-I	2.5	75	
8	Workshop Technology-III	3.0	100	
9	Engineering Drawing-III	4.0	100	
10	Workshop Practice	-	250	
	Viva-voce	-	50	
	<b>Total</b>		<b>1000</b>	

## FOURTH SEMESTER

Sl No.	Name of Subjects	Hours	Marks	Pass Marks
1	Engineering Physics	2.0	50	
2	Theory of Jigs & Fixtures-II	2.5	75	
3	Industrial Management-II	2.5	75	
4	Strength of Material-II	2.5	75	
5	Engineering Thermodynamics-II	2.5	75	
6	Theory of Mould-II	2.5	75	
7	Theory of Press Tool-II	2.5	75	
8	Workshop Technology-IV	3.0	100	
9	Engineering Drawing-IV	4	100	
10	Workshop Practice	-	250	
	Viva-voce	-	50	
	<b>Total</b>		<b>1000</b>	

## FIFTH SEMESTER

Sl No.	Name of Subjects	Hours	Marks	Pass Marks
1	Fluid Mechanics	2.5	75	
2	M/c. Elements & Designs	2.5	100	
3	Press Tool Design-I	4.0	150	40% for Theory,
4	Mould Design-I	4.0	150	50% for Practical
5	Jigs & Fixtures Design-I	4.0	150	&
6.	CAD/CAM	4.0	75	Viva-voce
7.	Workshop Practice	-	250	
	Viva-voce	-	50	
	<b>Total</b>		<b>1000</b>	

## SIXTH SEMESTER

Sl No.	Name of Subjects	Hours	Marks	Pass Marks
1	Hydraulics & Pneumatics	2.5	75	
2	Workshop Presentation	2.0	75	40% for Theory,
3	Press Tool Design-II	4.0	200	50% for Practical
4	Mould Design-II	4.0	200	&
5	Jigs & Fixtures Design-II	4.0	150	Viva-voce
6	Workshop Practice	-	250	
	Viva-voce	-	50	
	<b>Total</b>		<b>1000</b>	

## SEVENTH SEMESTER

Sl No.	Name of Subjects	Hours	Marks	Pass Marks
1	Work Diary *		400	50%
2	Internal **		400	
	Viva-voce		200	
	<b>Total</b>		<b>1000</b>	

## EIGHT SEMESTER

Sl No.	Name of Subjects	Hours	Marks	Pass Marks
1	Work Diary *		400	50%
2	Internal **		400	
	Viva-voce		200	
	<b>Total</b>		<b>1000</b>	

**Note:** \* Work Diary of the "On the Job Training"

\*\* Internal Assessment



# SYLLABUS

## **Semester - I**

### **1. Technical English - I**

- Communication Event
- Listening & speaking
- Communication Process
- Effective Communication Principles
- Application Writing

### **2. Engineering Mathematics- I**

#### **Algebra**

- Ratio & Proportion
- Laws of indices
- Quadratic equation
- Linear equation
- Logarithm

#### **Trigonometry**

- Measurement of angles
- Trigonometric Ratios
- Associated angles
- Multiple and sub-multiple angles
- Solution of triangles
- Heights & Distances
- Applications

#### **Mensuration**

- Rectilinear figures
- Curvilinear figures

### **3. Material Technology-I**

- Elements & compounds
- Metals & non-metals
- Crystalline & non crystalline structures
- Ferrous & non-ferrous metals
- Physical & Mechanical properties of metals
- Iron & Steel
- Cast iron
- Common alloying elements and their effects on the properties of steel
- Elastic & Plastic deformation

#### **4. Engineering Drawing -1**

- Definition of Drawing & its importance
- Introduction to drawing instruments
- Standard sheet sizes
- Use and application of various lines in drawing practice
- Lettering (alphabet and numerical, vertical & inclined)
- Different dimensioning methods
- Reduced and enlarged scales and their applications
- Geometrical constructions
- 1st angle & 3rd angle projection
- Pictorial view to orthographic view

#### **5. Engineering Mechanics-I**

- Force system
- Classification of force system
- Resultant & components
- Composition & resolution of forces
- Parallelogram law of forces
- Principle of equilibrium
- Centre of gravity
- Coefficient of friction
- Angle of friction
- Inclined plane

#### **6. Electrical Technology- I**

- Modern Electron theory of electricity
- Electric potential
- Electric current
- Resistance
- Ohm's law
- Resistivity
- Temperature co-efficient of resistance
- Heating effect of current
- Kirchoff's laws
- Star Delta connections
- Alternating current

## **7. Workshop Technology –1**

- Safety Precautions
- Fitters vice and hand tools
- Classification of Files
- Hammers and their types, mallets
- Marking Tools, height gauge, try square
- Surface plate
- Centre punch, drills, reamers, chisels, hacksaw
- Spanners, wrenches, pliers, screw drivers
- Scrapers their types and uses
- Common screws, bolts and nuts, washers and rivets
- Drilling Machines
- Different types of drills
- Drill chuck and drill sleeve
- Drilling (through holes and blind holes) & counter sinking,
- Drill angles & grinding of drills
- Use of coolants
- Cutting speed & feeds
- Shaping machine- Different parts and their functions
- Centre Lathe-different parts and their functions
- Lathe accessories- like chucks, revolving and dead centre, lathe dog carrier, steady rest, follow rest.
- Dead centre, lathe dog carrier,
- Turning tools, different angles of single point cutting tool and their functions, tool grinding.
- Power Saw Machine

## **8. Metrology -1**

- Basic standards of measurement , line and end standards of measurement
- Limit, fit and tolerance
- Interchangeability
- Hole basis and Shaft basis system
- Fundamental deviations as per IS
- Principle and uses of different measuring instruments like Vernier caliper, Micrometer, Bore gauge , height gauge,
- Accuracy & Readability

## **9. Polymer Science -1**

- Chemical linkages
- Monomers, polymers, polymerization
- Kinetics of polymerization mechanism
- Polymerization techniques
- Classification of polymers
- Origin, structure, thermal response
- Formation, tacticity, crystallinity
- Transitions in polymers, rubbers, plastics, fibres

## **10. Workshop Practice**

- Familiarization with the engineering training institute
- Importance of Diploma in Tool & Die Making course in the present scenario of industrial growth.
- Various types of machines used including safety related to each machine
- Introduction to hand tools, measuring tools
- Filing flat surface
- Using marking tool, punch, try square and vernier caliper
- Hack sawing, drilling, tapping
- Filing Tee shape job, polygon.
- Grinding and making single point cutting tool
- Introduction to lathe - use of 3-jaw chuck, 4-jaw chuck.
- Plain turning, facing, step turning.
- Welding Practices with essential theory.

## **Semester - II**

### **1. Engineering Chemistry**

- Chemical Equation, Oxidation & Reduction: Concept of oxidation & Reduction, Electronic concept of oxidation and reduction.
- Acids and Bases: Concept of acids and bases, their strength in ionization constant, Electrolysis.
- Water: Hard and soft water, removal of hardness by -: Soda lime process, Permutit's process, Ion exchange method, disadvantages of hard water in industrial use, boiler scales, priming, foaming corrosion and caustic embrittlement, water for drinking process.

- Solutions & Colloids: Solute, solvent, solution & colloids, Particle size and colloidal state

## **2. Engineering Mathematics - II**

### *Co-ordinate geometry*

- Cartesian Co-ordinates
  - Polar co-ordinates
  - Distance between two points
  - Point dividing a line
  - Angle between two lines
  - Area of triangle Equations of straight lines & circle
- ### *Calculus*
- Concept of limits
  - Simple differentiation
  - Simple integration
  - Applications.

## **3. Material Technology-II**

- Principles & description of testing of metals
- Mechanical properties and their method of testing such as tensile, hardness, impact, etc.
- Iron-carbon equilibrium diagram
- TTT diagrams
- Different processes of heat treating of steel such as annealing, normalizing, hardening, tempering ,etc.
- Heat treatment furnaces such as Muffle, Induction, Salt bath furnaces, Vacuum heat treatment furnace.

## **4. Engineering Drawing -II**

- Orthographic view to pictorial view
- 1st angle & 3rd angle projection
- Sectioning- full section, half section , partial or broken section
- Different conventions for materials in sections
- Exercises on sectional views of different objects

## **5. Engineering Mechanics-II**

- Laws of motion

- Principle of balancing
- Work, Power, Energy
- Transmission of power by belt and gear
- Gear train
- Simple machine
- Moment of Inertia , Radius of gyration, selection modules

## **6. Electrical Technology- II**

- Reactance , Impedance
- AC circuits
- Transformer, Motor, Generator
- Housing wiring
- Conductors, Semiconductors & Insulators
- Basic electronics – thermionic Emission, Diode, Triode

## **7. Workshop Technology –II**

- Different types of Machine vice, face plate, steady rest, follower rest.
- Counter boring, spot facing,
- Taps & Dies
- Knurling tool and different types of knurling
- Different types of lathe operation and their procedure like taper, turning, thread cutting, form turning.
- Different types of taper and thread and their uses.
- Shaping machine-critical operation , quick return mechanism
- Different types of Taps & Dies and their applications , Male-Female matching , Blue Matching.

## **8. Metrology -II**

- Inspection gauges
- Depth gauge, universal bevel protractor, height master, microscope, Profile projector, sine bar, slip gauges and dial gauge.
- Surface finish characteristics RMS and CLA values and its measurement.

## **9. Polymer Science -II**

- Properties of polymer-mechanical, thermal, electrical
- Compounding of Polymers

- Classification of plastic-thermosetting and thermo plastic
- Properties and uses of different types of thermosetting and
- Thermoplastic materials
- Common testing methods of plastic materials

## **10. Workshop Practice**

- Fitting male and female
- Face plate, cat head, steady rest, follower rest, plain turning, facing, step turning,
- Taper turning by tail stock offset method, compound slide method, taper turning attachment method.
- Different types of thread cutting including multi -start thread, external and internal.
- Electrical Practices (Basic)
- Eccentric turning.
- Basic MS-Office.

## **Semester - III**

### **1. Technical English II**

- Writing and reviewing
- Communicating oral messages
- Commercial correspondence
- Report writing

### **2. Theory of Jigs & Fixtures-I**

- Definition, basic elements and principles of jigs and fixtures
- Work holding devices
- Degrees of freedom
- Locating principles and different types of locating systems
- Component loading, tool grinding methods, jig bushes

### **3. Industrial Management -I**

- Line, staff and functional organization
- Functions of different department relationship between individual departments
- Functions of trade unions
- Industrial disputes act
- Introduction of factory act
- Wages and incentives
- Role of supervisor in industry

- Elements of work study
- Brief description of method study
- Work measurement, time study and allowances

#### **4. Strength of Material-I**

- Effects of load on members
- Stress & Strain
- Hook's law
- Composite section under tension or compression
- Tensile stress & Strain
- Ultimate stress & strain
- Ultimate stress, working stress , factor of safety
- Shearing forces and bending moments
- SF & BM diagrams

#### **5. Engineering Thermodynamics - I**

- Law of conservation of energy
- First and Second law of thermodynamics
- Gas & vapour
- Gas Laws
- Boyle's law, Charles law and joule's law
- Dalton's law of partial pressure
- Relation between specific heats and compression of gases-constant pressure process, constant volume process, constant temperature process, adiabatic process.
- Saturated steam, wet steam, dry steam, superheated steam.

#### **6. Theory of Mould-I**

- Basic principles of different processes of producing plastic components.



- Injection mould-different parts, construction of mould, feed system, air vents, cooling system, injection system, splits and side cones, multi-day-light mould, hot runner mould.
- Injection moulding machine-hand injection moulding machine, plunger type injection moulding machine, screw type injection moulding machine, specification of injection moulding machine, operation sequence, trouble shooting.
- Mould polishing-need of polishing, polishing method, material used for polishing.
- Hot runner mould - introduction, hot runner units, manifolds and torpedo used in hot runner mould, advantages and disadvantages of hot runner moulds.

## **7. Theory of Press Tools-I**

- Basic principle of press work
- Different parts & construction of press tool
- Different types of press tools
- Shear action, cutting clearance
- Cutting & Stripping force
- Blanking & Piercing
- Mounting of die and punch, pilot, stripers, stock.
- Strip layout, percentage of utilisation
- Feeding mechanism

## **8. Workshop Technology -III**

- Milling Machine-different types of milling machine, specification, construction, different parts and their functions, accessories and attachments.
- Milling cutters and their specific applications, cutter moulding device
- Different types of work setting methods.
- Different types of milling operations-surface milling, slot milling, profile milling, straddle, helical milling etc.
- Indexing- indexing head, different types of indexing like direct, simple, differential, angular and linear.
- Cutting speed, feed.

- Grinding machine-different types of grinding machine like surface, cylindrical, tool & cutter, principle of grinding, specification of grinding machine
- Grinding wheel – wheel materials.selection of grinding wheel
- Balancing, mounting & dressing of grinding wheels.
- Simple programming concept on CNC lathe, CNC milling, CNC EDM, CNC WEDM.

### **9. Engineering Drawing -III**

- Projection of planes
- Projections of solids
- Section of solids
- Intersection of surfaces/inter-penetration of solids
- Development of surfaces
- Limits and fits
- Auxiliary views
- Missing views and lines
- Rivets and riveted joints
- Screw threads
- Screwed fastening
- Screw threads.
- Keys, cotters and joints.
- Shaft couplings.
- Pulleys, gears.

### **10. Workshop Practice**

- Practice on milling machine
- Slab milling, end milling, slot cutting, all cutter operations.
- Practice on surface grinding machine, cylindrical grinding machine, tool and cutter grinding machine.
- Grinding of plain surface, edge grinding to make perfect square.
- “V” grinding, slot grinding.

## **Semester - IV**

### **1. Engineering Physics**

- Force and Motion

Scalars and Vectors, Velocity & Acceleration, Equations of motion, Newton's Law of motion, Force & its derivation from Newton's Law of motion, Centripetal acceleration, centripetal and centrifugal forces, Concept of friction and its application,

- **Work, Power and Energy.**

Work and its unit, Work done on bodies on horizontal and inclined planes, Concept of power and its unit, Calculation of power, Concept of Kinetic energy and potential energy. conservation of energy in the case of freely falling bodies, principle of conservation of energy

- **Rotational and simple Harmonic Motions**

Definition of moment of inertia, Moment of inertia of disc, ring & sphere, Torque and angular momentum and their inter relation, Principles of conservation, Kinetic energy of rolling body,

- **Heat:** Temperature and its measurement, Concept of heat and temperature on the basis of K.E. molecules, Unit of heat, Basic Principles of measurement of temperature, Thermocouple, Bimetallic and resistance, Pyrometers and Thermometers,
- **Expansion of Solid:** Coefficient of linear, Surface and cubical expansion and relation amongst them, Thermal stresses (qualitative only) and their applications,
- **Heat Transfer:** Three modes of transfer of heat, Coefficient of thermal conductivity, Heat radiation, Characteristics of heat radiations, Black body radiations, Emissivity and absorptivity.
- **Sources of Energy:** Renewable and non-renewable sources of energy, Alternate source of energy.

## 2. Theory of Jigs & Fixtures-II

- Different types of drill jigs and their applications.
- Turning, milling and grinding fixtures.
- Fool-proofing
- Indexing arrangement

## 3. Industrial Management -II

- Estimation and costing - standard cost, estimating procedure, material and labour cost estimation, tooling cost estimation,

overheads and their allocation.

- Cost of Machining & Metal
- Function of store
- Methods of storing, receipt and issue of items.
- Storing and ordering quantity.
- Inventory control
- Purchasing and purchase procedure
- Motivation

#### **4. Strength of Material-II**

- Neutral axis, bending equation
- Practical application of bending equation
- Riveted joints
- Torsion and springs.
- Columns and struts.

#### **5. Engineering Thermodynamics-II**

- Refrigeration & Concept of Enthalpy & Entropy.
- Ideal cycles - introduction, Carnot's cycle, reversible cycle,
- Internal combustion engine- Introduction, classification of I.C. engines
- 4-Stroke and 2-stroke engines.
- Otto cycle and diesel cycle engines, dual cycle.
- Valve timing diagram.

#### **6. Theory of Mould-II**

- Compression mould- different parts, working process, different types of compression moulds used in industry, construction, heating of mould, pre-forming.
- Transfer moulds- types of transfer moulds, construction, process, pot-type and plunger type moulds.
- Miscellaneous moulding processes- blow molding, extrusion process, thermo forming, etc.

#### **7. Theory of Press Tools-II**

- Progressive tool, compound tool, drawing tool, trimming tool, bending tool, curling and embossing tool, coining tool.

- Fine blanking.
- Different types of press.
- Development.

## **8. Workshop Technology –IV**

- Jig grinding machine- different parts, accessories used, planetary motion mechanism in jig grinding, specific use of jig grinding.
- Electric discharge machine- principle, electrode used in EDM & Wire EDM, basic difference between EDM & Wire EDM, specific use of EDM.
- Basic computer concepts.
- CNC machines- different types of CNC machines like CNC lathe, CNC milling, CNC machining centres, CNC EDM and Wire EDM, Axes identification, absolute and incremental mode applied to CNC machines.

## **9. Engineering Drawing -IV**

- Detailing an assembly- detailing of parts from assembly and assembly of units from given detail parts like tail stock, 4-jaw chuck, tool part, screw jack, machine vice, I.C.engine piston and connecting rod, etc.

## **10. Workshop Practice**

- Form milling, dove-tail milling.
- Indexing, rotary milling.
- Grinding of shaft, bush both external and internal.
- Form/profile grinding by dressing the wheel, taper grinding- internal and external.
- Design Software

## **Semester - V**

### **1. Fluid Mechanics**

- Properties of fluids- density, specific weight, viscosity, Newtonian and Non-newtonian fluids, surface tension, capillary action.
- Fluid static- absolute and gauge pressure, pressure measurement, manometre, forces on surfaces, bouyant force, meta centric height, Archimeds principle.

- Fluid motion- classification of flow, steady and unsteady flow, uniform and non-uniform flow, laminar and turbulent flow.
- Hydro-electricity power generation technology-
  - ✓ Reaction, Impulse, Cross flow turbines.
  - ✓ Various components of hydro-electricity power generation technology.
  - ✓ Head/suction head, pressure head and discharge measurement.
  - ✓ Bernoulli's equation, Pilot tube, venturimetre.

## 2. Design of Machine Elements

### ***Design of shafts***

*Unit 1: Selection of Materials*

*Unit 2: Design of shaft*

*Unit 3: Maximum bending movement*

*Unit 4: Twisting movement*

### ***Design of bolt***

*Unit 1: Selection of Materials*

*Unit 2: Design of bolt*

*Unit 3: Design of pin & key*

*Unit 4: Design of cotter joint and couplings*

### ***Design of Belts***

*Unit 1: Selection of Materials*

*Unit 2: Design of belts*

*Unit 3: Design of V belts*

*Unit 4: Power Design of V- belts drives.*

### ***Design of Bearings***

*Unit 1: Selection of Materials*

*Unit 2: Design of ball and radial bearing.*

*Unit 3: Design of roller bearing*

*Unit 4: Design of Cylindrical bearing*

### ***Design of Levers and gears***

*Unit 1: Selection of Materials*

*Unit 2: Design of levers*

*Unit 3: Design of gears*

*Unit 4: Design of spur gears*

### **3. Press Tool Design-I**

- Strip layout- single run, double run, single punch, double punch.
- Progressive tool- using fixed stock pin and pilot punch, blanking and piercing, cutting and non-cutting operation.
- Compound tool - blanking and piercing.
- Bending tool - V-bending, U-bending.

### **4. Mould Design-I**

- Basic design features of injection moulds- study of plastic components, study of moulding machine, method of construction of moulds, determination of number of cavities, selection of parting surface, type of layout of cavities, selection of runner, selection of gates, selection of single or multi-daylight mould, cooling system, mould venting, selection of material.
- Methodical approach in practical design - preparation of assembly drawing (i.e, plan view in open condition of mould and cross-sectional elevation and side view), design of cavities/cavity inserts, design of core/core insert, design of cavity layout, design of runner, gate and sprue, design of ejector assembly and different part of ejector assembly, design of cooling circuit, design of guide pillar and guide bush, design of cavity plate/cavity holding plate, vents position and its dimension, suitable lifting bracket.

### **5. Jigs & Fixtures Design-I**

- Location design.
- Design of clamping device
- Design of indexing device.
- Fool-proofing.
- Design of drill jig- jig bush, jig base, body, ejection system, guiding device.

### **6. Workshop Practice**

- Working on CNC lathe, CNC milling, exposure to non-conventional machining.

# Semester - VI

## 1. Hydraulic/Pneumatic Principles

- What is Hydraulic/Pneumatic, Force, pressure, work and power transmission of Hydraulic/Pneumatic force & energy, medium used to transmit hydraulic/pneumatic force & energy.
- Hydraulic medium, Equipment used to create Hydraulic/Pneumatic energy, Hydraulic Reservoirs.
- Coolers, strainers & filters, hydraulic pumps, pneumatic Air Compressors.
- Transmission of Hydraulic/Pneumatic energy(flow) converts to pressure energy.
- Valves: Pressure control valves, pressure relief valves, pressure reducing valves, unloading valves, counterbalance (foot) valve, sequence valves, check valves, flow control valves.
- Accumulators, boosters, rotary actuators, linear actuators, actuator components and construction, barrel/bore/ tube, end/ caps/ barrel fanges/ head, ports, piston rod or Ram.
- Bearing /bushings, sealing devices, wipers.
- Cylinders, Rams, single acting cylinder or Rams, double acting cylinders, Tie-rod cylinders, telescoping cylinders, Ram actuators/ presses.
- Seals: Static sealing, dynamic sealing, rubber O-ring, the single lip seal.

## 2. Workshop Presentation

- Preparation and presentation of Technical papers
- Group discussion
- Seminars/debates.
- Mock interviews.
- Games.
- Personality development.

## 3. Press Tool Design-II

- Cut off tool.
- Combination tool - blanking and drawing.
- Drawing tool - using pressure pad and without pressure pad.

## 4. Mould Design-II

- Compression mould design- design of cavity, plunger, heating



holes, heaters requirement, ejection units and different parts required to build the mould.

- Transfer mould design- design of cavity, core, core & cavity holding plate, heating circuit, design of pot, plunger, runner, gate, ejection unit.
- Hot runner mould- design of manifold, sprue runner, gate, torpedo.

## **5. Jigs & Fixtures Design-II**

- Milling fixtures- location, clamping device, indexing.
- Turning fixtures- location, clamping, self-centering chuck, face plate fixture for odd jobs, mandrels, threaded mandrel, expanding mandrel.
- Welding and assembly fixture- location, clamping, wing nut welding fixture and angle frame welding fixture.

## **6. Workshop Practice**

- Manufacturing of mould, press tool, jigs & fixtures and precision jobs.

## **Semester - VII**

### **1. Workshop Practice**

- Working on production job in training department/ production shop in the tool room or outside. Objective of this training programmes is to give experience to the students in actual working condition of an industry so that they are confident for taking up any job in the industry.

## **Semester - VIII**

### **1. Workshop Practice**

- Working on production job in training department/ production shop in the tool room or outside. Objective of this training programmes is to give experience to the students in actual working condition of an industry so that they are confident for taking up any job in the industry.

## ***RULES OF ATTENDANCE, TIME KEEPING, UNIFORMS, CONDUCTS, ETC. (for Trainees)***

1. Every trainee shall be present at his/her place of training in accordance with the programme prepared and notified by the Chief Executive Officer/General Manager. He/she shall maintain utmost punctuality in time keeping. If he/she is not found in his/her place of training without any justification to the satisfaction of his/her batch in charge or any other officer or expert of the Centre, he/she be marked absent for the day, in addition to disciplinary action which might be taken against him.
2. No late comer shall be allowed. Depending on whether a trainee is late in the forenoon or in the afternoon his/her late attendance 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/her place of training.
4. **80% of attendance will be required to be eligible to appear the Main Semester Examination. However, maximum period of 5 days shall be considered for students with genuine medical reasons.**
5. Trainee shall attend training classes (theory as well as a practical) in prescribed uniform and in such dress and shoes as may be prescribed from time to time by the Centre keeping in view the safety and other training requirements. Trainees shall at their cost arrange uniform, full shoes etc.
6. Trainees shall maintain their uniform neat and tidy. They shall replace the broken buttons etc, and mend damaged uniform. They shall exchange the washed uniform at such time and place as may be notified by Training Manager Adviser from time to time.
7. Trainees shall arrange at their cost 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 wherever necessary
8. Trainees may borrow such books from the centre as the centre may earmark for the purpose from time to time in accordance with the rules laid down for the purpose from time to time.
9. (a) During the course of training, trainees shall handle and maintain Center's

property, namely machines, instruments, tools and equipment, special and standard accessories, electrical equipment including switch boards, switches, lights, fans, hand tools, furniture items, sanitary & water supply fitting, building and other civil structures, lawns, raw materials, consumables and other articles of the centre, with the outmost care so as not to cause any damage excessive wear and tear, reduction of utility and usefulness or otherwise deface or tarnish the appearance or good looks. Trainees should refrain from writing any thing on the walls, other civil structure, plant and equipment and other aforesaid articles or otherwise marking or sticking bills, posters etc.

(b) Trainees shall strictly follow the procedures introduced from time to time and instructions issued by the Chief Executive Officer/General Manager or any other official of the centre authorized to do so with regard to the following :-

- i. Issue and return of instruments, tools etc from stores.
- ii. Deposit of finished and semi-finished practical exercises/jobs
- iii. Reporting of breakages
- iv. Proper maintenance of machines and other plant equipments, accessories etc, including periodic lubrication.
- v. Disposal of borings and turnings and other scraps.
- vi. Cleanliness of machines including cleaning of shop floor m/c.
- vii. Lights and fans.
- viii. Operation of machines including cleaning of shop floor m/c.
- ix. Tools and materials go downs.
- x. Industrial lockers.
- xi. Tool lockers and material lockers.
- xii. Handing over and taking over of machines and other equipments.
- xiii. Allotment and operation of machines etc.
- xiv. Any other subject not included above.

(c) Any loss or damage to the center's property arising out of a willful act of a trainee or due to his neglect or noncompliance of operating instructions, safety rules or any other instructions issued or the established and conventional norms of use of that property shall be recovered from the trainee and/or his surety/guardians. The decision of the Chief Executive Officer/General Manager as to whether the loss or damage has occurred due to willful act or neglect or noncompliance as aforesaid. or not. About the amount

of loss/damages, shall be final and binding on the trainee & his/her surety and guardians.

10. The Centre shall provide opportunities of the training for the course to trainees\who of their own free will decide to undergo training on the terms and conditions known and understood by them including the power of the Governing Council and other competent authorities to amend the terms and conditions at any time and without notice to formulate and amend procedures and rules whenever necessary. Trainees shall not resort to make organized claims and collective bargaining. Difficulties experienced. If any, by them should be brought to the notice of the batch-in charge or other officials of the centre in individuals capacities, in manner which may be prescribed from time to time by the Chief Executive Officer/General Manager shall be looked into. No Union or Association formed by the trainees shall be recognized.
11. No meeting shall be conducted by the trainees inside the premises of the Centre including any other Sub-office, Cell or any building, without the permission of the Chief Executive Officer/Project advisor or any other authority competent to give such permission.
12. Period spent by the trainees even if it is within NTTC premises in a manner otherwise than according to programme of training including examination, class tests,etc. shall be treated as full day's absence for this purpose.
13. Inviting others 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).
  - a). Insubordinate or disobedience whether alone or in combination with others.
  - b). Theft, fraud, any dishonest act, bribery or any illegal gratification with others.
  - c). Possession, distribution and display, within the Centre's premises, of unauthorised bills, pamphlets, books, placards, banners.
  - d). Coming to the centre in drunken condition or under the effect of any intoxicants, narcotics or possessions 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.

- g). Refusal to receive official documents.
  - h). Deliberate false statements, falsification of records, impersonation, suppression of facts.
  - i). Wilful failure to report occurrences or any information which may endanger others' life or Centre's property.
  - j). Private or personal work within NTTC premises and Centre's facilities whatsoever.
  - k). Staying inside Centre's premises outside training hours except when permitted or authorised.
  - l). Violation or non-compliance of any rule or instructions issued.
  - m). Any other act which goes against the interest and objectives of the centre or against the intention and purpose of any rules, procedures and standing instructions.
14. During the course, the trainees shall not apply for any employment, scholarship, travelship, part time work and any other training otherwise than through the Chief Executive Officer/Asstt. General Manager. They shall submit application through proper channel which will be considered on merits of each case.
15. Trainees shall not commercialise any discovery made in the course of training or patent of the Centre.

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## **GUIDELINES FOR ON THE JOB TRAINING (OJT)**

1. Students of DTDM course will have to undergo OJT for a period of 1 (one) year, which is part of the course and is mandatory.
2. All arrangements with Company for OJT will be made by the Institute.
3. Student's remuneration, facility during OJT at a Company will depend on their performance/merit.
4. Accommodations are to be arranged by the Students.
5. Students shall abide by the rules and regulations set forth by the Institution/ Company where s/he is undergoing OJT.
6. Any Student(s) failing to continue the OJT in the company arranged by the Institute will have to make alternate arrangements on their own and join immediately.
7. Students should always observe discipline and right conduct.
8. Students' attendance shall be observed strictly during the OJT period. Any Student(s) failing to achieve the minimum required attendance, the OJT period shall be extended.
9. Students are expected to submit their Daily work diary, Company's certificate, Proof of attendance and other necessary documents for assessment at the time of reporting to the Institute.
10. At the end of OJT, Student's performance shall be evaluated by conducting written examination and viva-voce.
11. Stringent action shall be taken to any Student(s) submitting False/ Fake Company's Certificate.

# Prospect of ‘Diploma in Tool & Die Making’ (DTDM) Course:

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1. This DTDM course is an AICTE approved course and it is equivalent to Diploma in Mechanical Engineering. Therefore, job opportunities are also at par with the Diploma in Mechanical Engg. candidates for all private/Govt. sectors in India and abroad. Students who had successfully completed this Diploma in Tool & Die Making course from different Institutes have been well accepted by the industries all over India as well as Countries like, Singapore, Taiwan, Dubai, Malaysia, U.S.A., Bangladesh, Canada, Italy, Australia, Germany, etc.
2. The DTDM is a specialized engineering course. During the training period, trainees shall develop knowledge and skills in designing and manufacturing of Tools, Dies, Moulds, Jigs, Fixtures, etc. and shall be able to work with Computer Aided Design and Manufacturing software (CAD/CAM), shall learn programming and operation of Computer Numerical Control (CNC)/Automation machines.
3. Indian organizations who prefer to employ Diploma in Tool & Die Making passed students are:-  
Tata Motors, Maruti Suzuki, Hindustan Motors, Philips, HAL, Bajaj Auto Ltd., SKF Bearing, NIVA Bearing, SANDVIK, WIDIA, Tool Rooms, Bhaba Atomic Research Centre, Telecom factory, SIEMENS, Mazak Machine Tools, DMG Machine Tools, Mikron machine tools, Electronica machine tool Ltd, Hero Honda, Spaco Technologies (I) Pvt., Nextmotive, etc.
4. The job opportunities are high especially in the manufacturing industries in India and abroad. The management shall extend all possible assistance to the passed candidates of DTDM course for their placement. However, the Centre will not be responsible for guaranteed job placement.
5. The Tool Room & Training Centre has a vital role to play in the national economy. There is hardly any sector of economic activity which does not need the contribution of Tool Room, starting from agriculture, defence, automobiles, electronic, tele-communication, space research, machine building, etc. Tool Room technology was transplanted to India from the most advanced countries like, Germany, Denmark, Switzerland.

# **HOSTEL FEE STRUCTURE AND RULES**

## **Fee Structure:**

- |                                  |   |   |
|----------------------------------|---|---|
| 1. Admission fee                 | : | ₹ 2000/- per annum.                             |
| 2. Security deposit (refundable) | : | ₹ 1000/- one time only.                         |
| 3. Hostel Fee (maintenance)      | : | ₹ 500/- p.m                                     |
| 4. Mess Fee (monthly)            | : | ₹ 3000/- p.m.<br>(to be paid one month advance) |
| 5. Internet/Wifi Fee             | : | -   |

**Note:** The above fees are subjected to change from time to time.

**Items to be brought:** *Full Bedding including mosquito net, bucket & mug, plate & cup.*

## **Rules and Regulations for Hostel Boarders:**

1. Hostellers once admitted into the hostel are not allowed to leave unless on unavoidable circumstance.
2. Hostellers should not in any way hamper the reputation of the hostel if found so, shall be expelled without further notice.
3. Hostellers are not allowed to leave the hostel premises except on unavoidable cases.
4. Hostellers are not allowed to bring any outsiders/friends inside the hostel premises.
5. Chewing of pan, talab or any other intoxicant things is strictly prohibited.
6. Hostellers are to strictly adhere with the daily routine as schedule.
7. Hostellers are to maintain peaceful decorum within the hostel.
8. No permission will be granted to the hostellers for picnic or any kind of parties.
9. Hostellers are not allowed to stay inside the hostel during class hours.
10. Hostellers must take proper care of the hostel properties/facilities. Any damage of the hostel properties must be repaired or replaced by the erring hosteller.
11. Hostellers will be allowed to go out for mere social functions.
12. Hostellers should follow the daily timing laid by the management.
13. Hostellers must keep their respective rooms neat and tidy. There will be checking from time to time by the warden.
14. Hostellers must also abide by the rules that may be laid down from time to time by the management.
15. Every boarder must attend to prayer meetings or morning work programmes whenever conducted.
16. The decision of the management in all matters will be final and binding.

*Sd/- Principal.*



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**Address:** Nagaland Tool Room & Training Centre,  
New Industrial Estate, Near Sub-Jail (Tinali).  
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**Email ID :** [nttcdimapur@gmail.com](mailto:nttcdimapur@gmail.com)  
**Website:** [www.nttcdimapur.org.in](http://www.nttcdimapur.org.in)





Group Photos of Diploma Student's

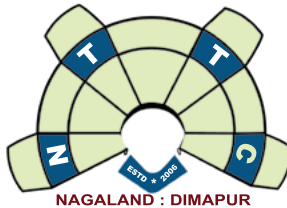


Principal and official of sector Skill Council, New Delhi with trainers posed for photo during training of trainers held at NTTC.

# NAGALAND TOOL ROOM & TRAINING CENTRE

Dimapur: Nagaland.

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**Motto: Technology-Innovation-Development**

## **Address:**

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