DSEU

Diploma in Tool and Die Making

Syllabus Document

EFFECTIVE FROM ACADEMIC YEAR 2021-22

Program Summary

Duration of the Programs: 4 Years

Program Vision

Tool & Die Making Program aims at becoming a national hub for education of skilled engineers and entrepreneurs in the field of Tool & Die Design, Manufacturing that is relevant to industry by adopting the latest Technology in Tool Engineering.

Program Outcome

By the end of the program, the student will learn / acquire the following:

a) Basic Knowledge/Skills

- Should be able to apply knowledge of basic mathematics, science and foundational engineering skills to identify, analyse and solve the problems related to Tool & Die Making & allied Engineering.

b) Technical Knowledge/Skills

- The students should be able to clearly understand and interpret the concepts and applications of component design, tool design and to plan and organize for making, fitting & assembly of tools & dies using manufacturing techniques, hand tools, conventional machines, CNC machines & advanced technology in tooling.
- The student should also be able to apply the learning related to Material selection, Workshop Technology, Metrology & Quality engineering to arrive at solutions for Workshop / Industry related problems.

c) Software Skill and Project Skills

- Should be able to use engineering management principles to function effectively as an individual, and as a member or leader in diverse/multidisciplinary teams to manage projects and effectively communicate the well-defined technical engineering activities.
- Should be able to apply current techniques, skills, knowledge and computer based methods & tools to execute Projects related to Tool & Die Making.

d) Personality Traits and Ethics

- Should be able to apply knowledge of contemporary issues to investigate and solve problems with a concern for sustainability and eco-friendly environment.
- Should exhibit responsibility for professional, ethical, legal, safety, societal and environmental wellbeing
- Should pursue life-long learning as a means to enhance knowledge and skills.

e) Soft Skills

- Should be able to communicate effectively in diverse groups & multidisciplinary areas and exhibit leadership qualities to accomplish common goals.

Credit Scheme

Semester I						
Sl No.	Subject Code	Course Titles	Hours/week			Total Credits
			Lecture	Tutorial	Practical	
1	TD-FC101	Applied Mathematics-I	3	1	0	4
2	TD-FC102	Basic Sciences*	4	0	2	5
3	TD-FC103	Basic Engineering Graphics	0	0	6	3
4	TD-FC104	Basic Engineering Workshop Technology	1	0	4	3
5	TD-HS101	Face the World (FTW) Skills-I	1	0	4	3
6	TD-HS102	English Communication-I	0	0	2	1
7	TD-HS103	Sports & Yoga	0	0	2	1
8	TD-PC101	Production Technology-I (Theory)	4	0	0	4
TOTAL			15	1	18	25

*Basic Sciences includes Applied Physics and Applied Chemistry of 2.5 credits each.

Semester II						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			Lecture	Tutorial	Practical	
1	TD-HS 201	Face the World Skills II	-	-	-	1
2	TD-HS 202	English Communication II	0	0	2	1
3	TD-HS 203	Environmental Studies	-	-	-	1
4	TD-FC 201	Applied Mathematics-II	3	1	0	4
5	TD-PC 201	Engineering Drawing	0	0	6	3
6	TD-PC 202	Workshop Practice-I	0	0	12	6
7	TD-PC 203	Production Technology-II (Theory)	5	0	0	5
TOTAL			8	1	20	21

Summer Break Online Course						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-FC208-B	MOOC (Introduction to Computers and Office Productivity Software (Coursera)(8 Weeks)	0	0	0	2

Semester III						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-FC 301	Applied Mechanics	2	0	2	3
2	TD-PC 301	Metal Forming Techniques	2	0	0	2
3	TD-PC 302	Material Technology and Heat Treatment	3	0	0	3
4	TD-PC 303	Production Technology-III	3	0	0	3
5	TD-PC 304	Workshop Practice - II	0	0	8	4
6	TD-PC 305	Computer Aided Drawing and Drafting	0	0	6	3
7	TD-PC 306	MOOC (Fundamentals of Manufacturing Processes (edX)	0	0	0	2
TOTAL			10	0	16	20

Semester IV						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-FC 401	Basic of Electrical and Electronics Engineering	3	0	2	4
2	TD-PC 401	Advance Production Processes	3	0	0	3
3	TD-PC 402	Metrology	3	0	2	4
4	TD-PC 403	CNC Programming and Technology	0	0	6	3
5	TD-PC 404	Advance Production Workshop Practice	0	0	12	6
6	TD-PC 405	MOOC (Intelligent Machining (Coursera)	0	0	0	2
TOTAL			9	0	22	22

Semester V						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-HS 501	Entrepreneurship Development (FTW)	0	0	2	1
2	TD-FC 501	Hydraulics and Pneumatics	2	0	2	3
3	TD-PC 501	Mould Technology -I	4	0	0	4
4	TD-PC 502	Press Tool Technology-I	4	0	0	4
5	TD-PC 503	Jigs, Fixtures and Gauges	4	0	0	4
6	TD-PC 504	Workshop Practice (Press Tool)	0	0	8	4
7	TD-PC 505	MOOC (Additive Manufacturing and 3D Printing: Costs Structures and Benefits (FutureLearn) (8 Weeks)	0	0	0	2
TOTAL			14	0	12	22

Semester Break Online Course						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-PC 508-B	MOOC (Quality Engineering & Management (edX)	-	-	-	2

Semester VI						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-PC 601	CAD/CAM	0	0	6	3
2	TD-PC 602	Mould Technology -II	4	0	0	4
3	TD-PC 603	Press Tool Technology-II	4	0	0	4
4	TD-PC 604	Mould Design- I	0	0	4	2
5	TD-PC 605	Press Tool Design - I	0	0	4	2
6	TD-PC 606	Workshop Practice (Mould)	0	0	8	4
7	TD-HS 601	Workplace behavior (FTW)	0	0	2	1
TOTAL			8	0	24	20

Summer break Industry visits/Online Course						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-SI 607-B	1 week Industry Visit	-	-	20	2

Semester VII						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-PC 701	Forging and Die Casting	4	0	0	4
2	TD-PC 702	Production Planning and Costing	4	0	0	4
3	TD-PC 703	Mould Design-II	0	0	4	2
4	TD-PC 704	Press Tool Design- II	0	0	4	2
5	TD-PR 701	Minor Project (In house)	0	0	12	6
6	TD-PC 705	MOOC (Engineering Project Management: Risk, Quality, Teams, and Procurement (Coursera)	0	0	0	2
TOTAL			8	0	20	20

Semester Break Online Course						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-PC707-B	MOOC (Design Decisions in Engineering (saylor.org)(8 Weeks)	0	0	0	2
Semester VIII						
Sl No.	Subject Code	Course Titles	Hours/week			Credits
			L	T	P	
1	TD-PR 801	Major Project (In house/ Industry)[Report presentation, Seminar]	0	0	24	12
TOTAL			0	0	24	12

The syllabus of English Communication, Face the World Skills, Environmental Studies and Sports & Yoga are common across all the diploma programs and are given separately.

The syllabus for Applied Mathematics I and II, Basic Sciences (Applied Physics and Applied Chemistry), Basic Engineering Graphics and Basic Engineering Workshop Technology are given separately.