

Department of Production Engineering
GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA
BACHELOR OF TECHNOLOGY
(PRODUCTION ENGINEERING) 2018

3RD SEMESTER

Sr. No	Code	Type of Course	Subject	Contact Hours			Credit	Type of Subject	Marks		
				L	P	Total			Int.	Ext.	Total
1	PCPE-101	Professional Core Course	Strength of Materials	3	0	3	3	Theory	40	60	100
2	PCPE-102	Professional Core Course	Machine Drawing	2	4	6	4	Theory	40	60	100
3	PCPE-103	Professional Core Course	Thermal Engineering	3	0	3	3	Theory	40	60	100
4	HSMPE-101	Humanities Course	Operations Management	3	0	3	3	Theory	40	60	100
5	BSPE-101	Basic Science Course	Material Science	3	0	3	3	Theory	40	60	100
6	ESPE-101	Engineering Science Course	Industrial Engineering	3	0	3	3	Theory	40	60	100
7	LPCPE-101	Professional Core Course	Strength of Material Laboratory	0	2	2	1	Practical	30	20	50
8	LPCPE-102	Professional Core Course	Thermal Engineering Laboratory	0	2	2	1	Practical	30	20	50
9	TR-101	Training	Training 1*	-	--	-	1	Practical	60	40	100
10	PRPE-101	Project/Seminar	Seminar and Technical Report Writing	0	2	2	1	Practical	50	-	50
11	MPD-102	Mandatory Course	Mentoring and Professional Development	0	1	1	-	Practical	-	-	
Total				17	11	28	23		410	440	850

*Institutional/Industrial Training after 2ND semester of 4 weeks duration will be conducted during summer vacations and marks will be added in 3rd Semester

4TH SEMESTER

Sr. No	Code	Type of Course	Subject	Contact Hours			Credit	Type of Subject	Marks		
				L	P	Total			Int.	Ext.	Total
1	PCPE-104	Professional Core Course	Design of Machine Elements	4	0	4	4	Theory	40	60	100
2	PCPE-105	Professional Core Course	Fluid Mechanics and Machinery	4	0	4	4	Theory	40	60	100
3	PCPE-106	Professional Core Course	Manufacturing Processes	3	0	3	3	Theory	40	60	100
4	PCPE-107	Professional Core Course	Kinematics and Dynamics of Machines	3	0	3	3	Theory	40	60	100
5	PCPE-108	Professional Core Course	Physical Metallurgy and Heat Treatment	3	0	3	3	Theory	40	60	100
6	LPCPE-103	Professional Core Course	Fluid Mechanics and Machinery Laboratory	0	2	2	1	Practical	30	20	50
7	LPCPE-104	Professional Core Course	Kinematics and Dynamics of Machines Laboratory	0	2	2	1	Practical	30	20	50
8	LPCPE-105	Professional Core Course	Manufacturing Processes and Physical Metallurgy & Heat Treatment Laboratory	0	4	4	2	Practical	30	20	50
9	MCPE-101	Mandatory Non Credit Course	Environmental Science	2	0	2	-	Theory	50	S/NS	50
10	MPD-102	Mandatory Course	Mentoring and Professional Development	0	1	1	1	Practical	100	-	100
Total				19	9	28	21		410	440	850

5TH SEMESTER

Sr. No	Code	Type of Course	Subject	Contact Hours			Credit	Type of Subject	Marks		
				L	P	Total			Int.	Ext.	Total
1	PCPE-109	Professional Core Course	Industrial Automation and Robotics	3	0	3	3	Theory	40	60	100
2	PCPE-110	Professional Core Course	Inspection and Quality Control	3	0	3	3	Theory	40	60	100
3	PCPE-111	Professional Core Course	Metal Forming	3	0	3	3	Theory	40	60	100
4	PCPE-112	Professional Core Course	Engineering Metrology	3	0	3	3	Theory	40	60	100
5	PCPE-113	Professional Core Course	Machining Science	3	0	3	3	Theory	40	60	100
6	PEPE-XXX	Professional Elective Course	Elective 1	4	0	4	4	Theory	40	60	100
7	LPCPE-106	Professional Core Course	Industrial Automation and Robotics Laboratory	0	2	2	1	Practical	30	20	50
8	LPCPE-107	Professional Core Course	Metal Forming and Machining Science Laboratory	0	2	2	1	Practical	30	20	50
9	LPCPE-108	Professional Core Course	Engineering Metrology Laboratory	0	2	2	1	Practical	30	20	50
10	TR-102	Training	Training 2*	-	--	-	1	Practical	60	40	100
11	MPD-103	Mandatory Course	Mentoring and Professional Development	0	1	1	-	Practical	-	-	--
Total				19	7	26	23		390	460	850

*Industry/Institutional Training after 4TH semester of 4 weeks duration will be conducted during summer vacations and marks will be added in 5th Semester

6TH SEMESTER

Sr. No	Code	Type of Course	Subject	Contact Hours			Credit	Type of Subject	Marks		
				L	P	Total			Int.	Ext.	Total
1	PCPE-114	Professional Core Course	Industrial Tribology	3	0	3	3	Theory	40	60	100
2	PCPE-115	Professional Core Course	Machine Tool Design	3	0	3	3	Theory	40	60	100
3	PCPE-116	Professional Core Course	Operation Research	3	0	3	3	Theory	40	60	100
4	PCPE-117	Professional Core Course	Non-Traditional Machining	3	0	3	3	Theory	40	60	100
5	PEPE-XXX	Professional Elective Course	Dept. Elective-II	4	0	4	4	Theory	40	60	100
6	OEZZ-XXX	Professional Open Course	Open Elective- I	3	0	3	3	Theory	40	60	100
7	LPCPE-109	Professional Core Course	Industrial Tribology and Machine Tool Design Laboratory	0	2	2	1	Practical	30	20	50
8	LPCPE-110	Professional Core Course	Non-Traditional Machining Laboratory	0	2	2	1	Practical	30	20	50
9	PRPE-101	Project	Minor Project	0	4	4	2	Practical	60	40	100
10	MPD-103	Mandatory Course	Mentoring and Professional Development	0	1	1	1	Practical	100	-	100
Total				19	9	28	23		440	460	900

7TH SEMESTER

Sr. No	Code	Type of Course	Subject	Contact Hours			Credit	Type of Subject	Marks		
				L	P	Total			Int.	Ext.	Total
1	TR-104	Training	Industrial Training	0	28	28 ^a	14	Practical	350	150	500
2	TR-103	Training	Training - 3*	-	-	-	2	Practical	120	80	200
3	MPD-104	Mandatory Course	Mentoring and Professional Development	0	1	1 [#]	-	Practical	-	-	-
Total				0	29	29^a	16		470	230	700

Note: -
a) One Semester Industrial Training can be availed only once in 7th semester provided student has been successfully certified for at least Two MOOCS courses of minimum 6-8 weeks on some advanced technology/advanced problem solving tools/interdisciplinary branch of engineering/technology which have some relevant application during industrial training.

^aMinimum

* i. The marks of Training-III in an Industry/ Institution (viz.IITs/NITs/R&D Labs/ GNDEC only) undergone at the end of 6th Semester will be included here.

ii. Each student has to do atleast one project in concerned Industry/ Institution.

iii. Evaluation scheme of Training-III shall be as under:-

Internal: 120 marks shall be given on the basis of evaluation as per the rubrics.

External: External examiner from industry / Institution will evaluate the students on the basis of viva-voce for 80 marks.

[#]Online/Offline Mode.

8TH SEMESTER

Sr. No	Code	Type of Course	Subject	Contact Hours			Credit	Type of Subject	Marks		
				L	P	Total			Int.	Ext.	Total
1	PEPE-XXX	Professional Elective Course	Dept. Elective-III	4	0	4	4	Theory	40	60	100
2	PEPE-XXX	Professional Elective Course	Dept. Elective-IV	4	0	4	4	Theory	40	60	100
3	OEZZ-XXX	Professional Open Course	Open Elective- II	3	0	3	3	Theory	40	60	100
4	MCI-102	Mandatory Non Credit Course	Constitution of India	2	0	2	-	Theory	50	S/NS	50
5	MCI-103	Mandatory Non Credit Course	Organizational Behaviour	2	0	2	-	Theory	50	S/NS	50
6	PRPE-102	Project	Project I [#]	0	6	6	3	Practical	120	80	200
7	MPD-104	Mandatory Course	Mentoring and Professional Development	0	1	1 [*]	-	Practical	100	-	100
Total				15	7	22	14		440	260	700

There will be one period per week for Mentoring and Professional Development; final evaluation of this course will be done based on the combined assessment of odd and even semester of respective year of study.

In Project – I the problem related with design/construction/fabrication/computer modeling/experimentation etc. based on specialization group of electives is to be carried out. The results and analysis followed by discussion regarding suitability /non suitability of the project or any positive gain in the project made with conclusions and recommendations for future extension of the project must be covered. The evaluation of Project - I will be done as per the rubrics. For writing the report the students have to follow the concerned guidelines.

The Project - I may be carried out by a group of students (2 to 4 students from same specialization group).

LIST OF DEPARTMENTAL ELECTIVE SUBJECTS

Once an elective group is selected in the 5th semester then same group will be used in 6th semester. In 8th semester any elective group can be selected irrespective of group selected in 5th & 6th semester. Minimum strength requirement for running an elective subject is 10 students.

ELECTIVE I (5TH SEMESTER)			ELECTIVE II (6TH SEMESTER)		
Design & Manufacturing Engineering Group			Design & Manufacturing Engineering Group		
S. No.	Code	Name of Elective Subject	S. No.	Code	Name of Elective Subject
1	PEPE-101	Jig Fixture and Die Design	1	PEPE-105	Advance Casting and Welding Technology
2	PEPE-102	Tool and Cutter Design	2	PEPE-106	Maintenance and Reliability Engineering
3	PEPE-103	Introduction to Robotics	3	PEPE-107	Statistic and Numerical Analysis
4	PEPE-104	Micro Manufacturing	4	PEPE-108	Cryogenic Manufacturing
Industrial Engineering Group			Industrial Engineering Group		
S. No.	Code	Name of Elective Subject	S. No.	Code	Name of Elective Subject
1	PEPE-125	Human Engineering	1	PEPE-129	Plant Layout and Material Handling
2	PEPE-126	Agile Manufacturing	2	PEPE-130	Productivity Management
3	PEPE-127	Technology Management	3	PEPE-131	Project Management
4	PEPE-128	Marketing Management	4	PEPE-132	Estimating and Costing
Materials Group			Materials Group		
S. No.	Code	Name of Elective Subject	S. No.	Code	Name of Elective Subject
1	PEPE-149	Composite Materials	1	PEPE-153	Advance Engineering Material
2	PEPE-150	Materials Testing and Characterization	2	PEPE-154	Advance Ceramics
3	PEPE-151	Science and Engineering of Metals	3	PEPE-155	Material Processing
4	PEPE-152	Deformations and Defects of Materials	4	PEPE-156	Aero Space Materials
ELECTIVE III (8TH SEMESTER)			ELECTIVE IV (8TH SEMESTER)		
Design & Manufacturing Engineering Group			Design & Manufacturing Engineering Group		
S. No.	Code	Name of Elective Subject	S. No.	Code	Name of Elective Subject
1	PEPE-109	Non Destructive Testing	1	PEPE-113	Plastic and Ceramics Technology
2	PEPE-110	Computer Aided Design & Manufacturing	2	PEPE-114	Finite Element Method
3	PEPE-111	Precision Engineering	3	PEPE-115	Automobile Engineering
4	PEPE-112	Theory of Plasticity	4	PEPE-116	Industrial Finishing
Industrial Engineering Group			Industrial Engineering Group		
S. No.	Code	Name of Elective Subject	S. No.	Code	Name of Elective Subject
1	PEPE-133	Supply Chain Management	1	PEPE-137	Industrial Safety and Environment
2	PEPE-134	Quality and Reliability Engineering	2	PEPE-138	Value Engineering
3	PEPE-135	Green Manufacturing	3	PEPE-139	Intellectual Property Rights
4	PEPE-136	Investment Planning	4	PEPE-140	Total Productive Maintenance
Materials Group			Materials Group		
S. No.	Code	Name of Elective Subject	S. No.	Code	Name of Elective Subject
1	PEPE-157	Texture in Materials	1	PEPE-161	Nano Materials
2	PEPE-158	Environmental Degradation of Materials	2	PEPE-162	Explosive Materials used in Industries
3	PEPE-159	Fundamentals of Semi-Conductor Fabrication	3	PEPE-163	Wear Technology
4	PEPE-160	Nuclear Materials	4	PEPE-164	Thermodynamics of Materials

LIST OF OPEN ELECTIVE SUBJECTS OFFERED BY THE DEPARTMENT

Sr. No.	Semester	Open Elective No.	Code of Subject	Elective Subject Name
1	6 th Semester	Open Elective No. I	OEPE-101	Industrial Engineering
			OEPE-102	Industrial Safety and Environment
2	8 th Semester	Open Elective No. II	OEPE-103	Advanced Engineering Materials
			OEPE-104	Materials Management