

Courses/Credit Distribution of Production and Industrial Engineering Department

I. Basic Science Courses (BSC)

Semester I					
Course code	Course name	L	T	P	Credits
PYN105	Mechanics	3	1	0	4
Semester II					
Course code	Course name	L	T	P	Credits
MAN 103	Probability and Statistics	3	1	0	4
CHN 101	Applied Chemistry	3	0	3	4

II. Engineering Science Courses (ESC)

Semester II					
Course code	Course name	L	T	P	Credits
ESC101	Engineering Drawing	2	0	4	4
Semester III					
Course code	Course name	L	T	P	Credits
ESC204	Solid Mechanics	3	1	0	4
Semester IV					
ESC 102	Fluid Mechanics	3	0	2	4

III. Departmental Core Courses (DCC)

Course code	Course name	L	T	P	Credits
PEN 101	Introduction to Production and Industrial Engineering	2	0	0	2
PEN 102	Introduction to Manufacturing	2	0	4	4
PEN 201	Kinematics & Dynamics	3	0	2	4
PEN 202	Industrial Metrology	3	0	2	4
PEN 203	Metallurgy and Casting Processes	3	0	2	4
PEN 204	Machine Drawing	2	0	4	4
PEN 205	Technical Communication	2	0	0	2
PEN 206	Engineering Analysis and Design	3	1	0	4
PEN 207	Forming and Welding	3	0	2	4
PEN 208	Design of Machine Elements	3	1	0	4
PEN 209	Tool Design	2	0	4	4
PEN 210	Industrial Engineering I	3	0	2	4
PEN 211	Machining Technology	3	0	2	4
PEN 301	Computer Integrated Design and Manufacturing	3	1	0	4
PEN 303	Operations Research	3	1	0	4
PEN 304	Production and Operations Management	3	1	0	4
PEN 305	Industrial Engineering II	3	1	0	4
PEN 311	Thermal Engineering	4	0	0	4

IV. Departmental Elective courses (DEC)

Group-I (Any One)

Course code	Course name	L	T	P	Credits
PEN 402	Designing for automation	3	1	0	4
PEN 403	Smart Materials	3	1	0	4
PEN 404	Rapid Prototyping	3	1	0	4
PEN 405	Modern Manufacturing	3	0	2	4

Group-2 (Any Two)

Course code	Course name	L	T	P	Credits
PEN 412	Machine Tool Design	3	1	0	4
PEN 413	Robotics	3	1	0	4
PEN 414	Theory of Metal Cutting	3	1	0	4
PEN 415	Concurrent Engineering	3	1	0	4
PEN 416	CNC Machines and Programming	3	0	2	4
PEN 417	Product Design and Development	3	1	0	4

V. Departmental Honors Courses (DHC)

Course code	Course name	L	T	P	Credits
PEN 421	Advanced Welding Technology	3	0	2	4
PEN 422	Advanced Casting Technology	3	1	0	4
PEN 423	Maintenance and Reliability	3	1	0	4
PEN 424	Flexible Manufacturing Systems	3	1	0	4
PEN 425	Finite Element Analysis	3	1	0	4

VI. Minor Specialization Courses (MSC)

Course code	Course name	L	T	P	Credits
PEN 431	Computer Integrated Design and Manufacturing	3	1	0	4
PEN 432	Industrial Engineering II	3	1	0	4
PEN 433	Forming and Welding	3	0	2	4
PEN 434	Industrial Engineering I	3	0	2	4
PEN 435	Machining Technology	3	0	2	4

VII. Open Elective Courses (OEC)

Course code	Course name	L	T	P	Credits
PEN 461	Technology Management	3	1	0	4
PEN 462	Total Quality Management	3	0	2	4
PEN 463	Operations Research	3	1	0	4

**Teaching Scheme for B.E. Production and Industrial Engineering
FIRST YEAR**

Semester I

Course code	Subject	Credits	Category
MAN 101	Mathematics-I	4	BSC
PEN 101	Introduction to Industrial and Production Engineering	2	DCC
GSN 101	Environmental Science	4	GSC
PYN 105	Mechanics	4	BCS
HSS 101	Ethics and Self Awareness	2	HSSC
	Total	16	

Semester II

Course code	Subject	Credits	Category
MAN 103	Probability and Statistics	4	BSC
HSS 102/103	Communication skills (Basic/ Advanced)	2	HSSC
CHN 101	Applied Chemistry	4	BSC
ESC 101	Engineering Drawing	4	ESC
PEN 102	Introduction To Manufacturing	4	DCC
CSN 104/105	Computer Programming (Basic/ Advanced)	4	ESC
	Total	22	

SECOND YEAR

Semester I

Course code	Subject	Credits	Category
ESC 204	Solid Mechanics	4	ESC
PEN 201	Kinematics & Dynamics	4	DCC
PEN 202	Industrial Metrology	4	DCC
PEN 203	Metallurgy and Casting Technology	4	DCC
PEN 204	Machine Drawing	4	DCC
HSS 201	Economics	3	HSSMEC
PEN 211	Machining Technology	4	DCC
	Total	27	

Semester II

Course code	Subject	Credits	Category
ESC 102	Fluid Mechanics	4	ESC
PEN 205	Technical Communications	2	DCC
PEN 206	Engineering Analysis and Design	4	DCC
PEN 207	Forming and Welding	4	DCC
PEN 208	Design of Machine Elements	4	DCC
PEN 209	Tool Design	4	DCC
PEN 210	Industrial Engineering I	4	DCC
PEN 221	Educational Tour	Non Credit	DCC
	Total	26	

THIRD YEAR

Semester I

Course code	Subject	Credits	Category
PEN 301	Computer Integrated Design and Manufacturing	4	DCC
PEN 303	Operations Research	4	DCC
PEN 304	Production and Operations Management	4	DCC
PEN 305	Industrial Engineering II	4	DCC
PEN 311	Thermal Engineering	4	DCC
PEN 321	Minor Project	4	DCC
	Total	24	

Semester II

Course code	Subject	Credits	Category
PEN331	Internship*	20	DCC
	Total	20	

*Internship Seminar presentations may be held a week before the date of Registration in Semester-I of Fourth Year

FOURTH YEAR

Semester I

Course code	Subject	Credits	Category
	Open Elective	4	GSEC/MEC
	Departmental Elective Course-I	4	DEC
	Departmental Elective Course-II	4	DEC
PEN441	Major Project-I	2*	DCC
	Departmental Honors Course-I	4	DHC
	Departmental Honors Course-II	4	DHC
	Total	14/22	

*Evaluation needs to be carried out in next semester

Semester II

Course code	Subject	Credits	Category
HSM 404	Financial Management	3	HSSMEC
	Departmental Elective Course- III	4	DEC
PEN451	Major Project-II	6	DCC
	Departmental Honors Course-III	4	DHC
	Departmental Honors Course-IV	4	DHC
	Departmental Honors Course-V	4	DHC
	Total	13/25	DHC