

13. Courses of Study and Scheme of Assessment

BE PRODUCTION ENGINEERING (SANDWICH)

(2019 Regulations)
(Minimum credits to be earned: 165)

Course Code	Course Title	Periods / week				Maximum Marks			
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER 1									
19P101	Calculus and its Applications	3	1	0	4	50	50	100	BS
19P102	Physics	3	0	0	3	50	50	100	BS
19P103	Chemistry	3	0	0	3	50	50	100	BS
19P104	Professional Ethics	2	0	0	2	50	50	100	HS
19G105	English Language Proficiency	2	1	0	3	50	50	100	HS
19P110	Engineering Graphics	0	0	4	2	50	50	100	ES
19IP15	Induction Programme **	0	0	0	0	-	-	-	MC
19P211	C Programming Laboratory	0	0	4	2	50	50	100	ES
19P100	Industrial Training I	0	0	10	5*	100	0	100	PC
Total 23 periods		13	2	8+10	19+5*	450	350	800	
SEMESTER 2									
19P201	Complex Variables and Transforms	3	1	0	4	50	50	100	BS
19P202	Materials Science	3	0	0	3	50	50	100	BS
19P203	Chemistry of Engineering Materials	2	0	0	2	50	50	100	BS
19P204	Engineering Mechanics	3	1	0	4	50	50	100	ES
19____	Language Elective	0	0	4	2	50	50	100	HS
19P111	Basic Sciences Laboratory	0	0	4	2	50	50	100	BS
19P112	Engineering Practices	0	0	2	1	50	50	100	ES
19P200	Industrial Training II	0	0	10	5*	100	0	100	PC
19P215	Activity Point Programme #	-	-	-	Grade	-	-	-	MC
Semester 2- Summer Term									
19P212	Internship €	0	0	0	2£	100	0	100	EEC
Total 23 periods		11	2	10+10	20+5*	550	350	900	

** As per norms

* Will be counted for TGPA (Training Grade Point Average) computation

As per AICTE Norms; Total 60 hrs; Grade: Completed / Not Completed; Not Counted for CGPA

CA Continuous Assessment

FE Final Examination

€ This course will be conducted prior to the commencement of the third semester for a period of 3 weeks

£ For internship, one credit is equivalent to minimum 40 hours of work as per norms

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Course Code	Course Title	Periods / week			Maximum Marks				
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER 3									
19P301	Numerical Methods	2	1	0	3	50	50	100	BS
19P205	Basics of Electrical and Electronics Engineering	3	0	0	3	50	50	100	ES
19P302	Engineering Metallurgy	3	0	0	3	50	50	100	ES
19P304	Fluid Mechanics and Machinery	3	1	0	4	50	50	100	ES
19O306	Economics for Engineers	3	0	0	3	50	50	100	HS
19P406	Machining Technology	3	0	0	3	50	50	100	PC
19P210	Electrical and Electronics Engineering Laboratory	0	0	2	1	50	50	100	ES
19P411	Machining Technology Laboratory	0	0	2	1	50	50	100	PC
19K312	Environmental Science **	2	0	0	0	-	-	-	MC
19P300	Industrial Training III	0	0	10	5*	100	0	100	PC
19P315	Activity Point Programme #	-	-	-	Grade	-	-	-	MC
Total 25 periods		19	2	4+10	21+5*	500	400	900	
SEMESTER 4									
19P303	Strength of Materials	3	1	0	4	50	50	100	ES
19P305	Welding Technology	3	0	0	3	50	50	100	PC
19P402	Thermal Systems and Heat Transfer	3	1	0	4	50	50	100	ES
19P310	Machine Drawing	0	0	4	2	50	50	100	PC
19P311	Metallurgy and Strength of Materials Laboratory	0	0	2	1	50	50	100	ES
19P410	Thermal Engineering and Fluid Machinery Laboratory	0	0	2	1	50	50	100	ES
19O412	Indian Constitution **	2	0	0	0	-	-	-	MC
19Q413	Soft Skills Development	0	0	2	1	100	0	100	EEC
19P400	Industrial Training IV	0	0	10	5*	100	0	100	PC
19P415	Activity Point Programme #	-	-	-	Grade	-	-	-	MC
Total 23 periods		11	2	10+10	16+5*	500	300	800	

** As per norms

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Course Code	Course Title	Periods / week			Maximum Marks				
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER 5									
19P401	Probability and Statistics	2	1	0	3	50	50	100	BS
19P404	Foundry Technology	3	0	0	3	50	50	100	PC
19P405	Mechanics of Machines	3	1	0	4	50	50	100	PC
19P503	Manufacturing Metrology	3	0	0	3	50	50	100	PC
19P505	Applied Hydraulics and Pneumatics	3	0	0	3	50	50	100	PC
19P511	Metrology and Computer Aided Inspection Laboratory	0	0	4	2	50	50	100	PC
19Q513	Business and Managerial Communications	0	0	2	1	100	0	100	EEC
19P500	Industrial Training V	0	0	10	5*	100	0	100	PC
19P515	Activity Point Programme #	-	-	-	Grade	-	-	-	MC
Total 22 periods		14	2	6+10	19+5*	500	300	800	
SEMESTER 6									
19P403	Metal Forming Processes	3	0	0	3	50	50	100	PC
19P501	Computer Numerical Control Machines	3	0	0	3	50	50	100	PC
19P502	Process Planning and Cost Estimation	3	0	0	3	50	50	100	PC
19P504	Design of Machine Elements	3	1	0	4	50	50	100	PC
19P___	Professional Elective I	3	0	0	3	50	50	100	PE
19P510	Manufacturing Technology Laboratory	0	0	4	2	50	50	100	PC
19P610	Fluid Power Laboratory	0	0	2	1	50	50	100	PC
19Q613	Quantitative and Reasoning Skills	0	0	2	1	100	0	100	EEC
19P600	Industrial Training VI	0	0	10	5*	100	0	100	PC
19P615	Activity Point Programme #	-	-	-	Grade	-	-	-	MC
Total 24 periods		15	1	8+10	20+5*	550	350	900	

At the end of 6th semester, the students are required to earn the minimum number of activity points from the AICTE mandated ACTIVITY POINT PROGRAMME to qualify for the award of BE/BTech degree (Refer Section 4 (vii) (c) of 2019 Regulations)

- * Will be counted for TGPA (Training Grade Point Average) computation
- # As per AICTE Norms; Total 60 hrs; Grade : Completed / Not Completed; Not Counted for CGPA
- CA Continuous Assessment
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Course Code	Course Title	Periods / week			Maximum Marks				
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER 7									
19P701	Environment Conscious Manufacturing	2	0	0	2	50	50	100	PC
19P702	Production and Operations Management	3	0	0	3	50	50	100	PC
19P__	Professional Elective II	3	0	0	3	50	50	100	PE
19P700	Industrial Training VII ***	0	0	10 @	5*	100	0	100	PC
Total 8 periods		8	0	0+10@	8+5*	250	150	400	
SEMESTER 8									
19P601	Quantitative Methods In Management	3	0	0	3	50	50	100	PC
19P602	Jigs, Fixtures and Die Design	3	0	0	3	50	50	100	PC
19P603	Design for Manufacture and Assembly	3	0	0	3	50	50	100	PC
19P604	Automation and Robotics	3	0	0	3	50	50	100	PC
19P__	Professional Elective III	3	0	0	3	50	50	100	PE
19P611	CAD, CAM and CAE Laboratory	0	0	4	2	50	50	100	EEC
19P711	Innovation Practices	0	0	4	2	50	50	100	EEC
19P800	Industrial Training VIII	0	0	10	5*	100	0	100	PC
Total 23 periods		15	0	8+10	19+5*	450	350	800	

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*** Students will undergo training in an industry immediately after the 6th semester examinations for a period of 3 months

@ Minimum number of periods in the industry

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Course Code	Course Title	Periods / week			Maximum Marks				
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER 9									
19P___	Professional Elective IV	3	0	0	3	50	50	100	PE
19P___	Professional Elective V	3	0	0	3	50	50	100	PE
19P___	Professional Elective VI	3	0	0	3	50	50	100	PE
19___	Open Elective I	3	0	0	3	50	50	100	OE
19P710	Industrial Engineering and Lean Practices Laboratory	0	0	4	2	50	50	100	PC
19P720	Project Work I	0	0	4	2	50	50	100	EEC
19P900	Industrial Training IX	0	0	10	5*	100	0	100	PC
Total 20 periods		12	0	8+10	16+5*	400	300	700	
SEMESTER 10									
19___	Open Elective II	3	0	0	3	50	50	100	OE
19P820	Project Work II	0	0	8	4	50	50	100	EEC
Total 11 periods		3	0	8	7	100	100	200	

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LANGUAGE ELECTIVES

19G001	Communication Skills for Engineers
19G002	German- Level A1.1
19G003	French Language Level 1
119G004	Basic Japanese

PROFESSIONAL ELECTIVES

19P001	Mechatronics
19P002	Modeling and Control of Dynamic Systems
19P003	Maintenance and Safety Engineering
19P004	Finite Element Applications in Manufacturing
19P005	Design and Manufacture of Gears
19P006	Product Lifecycle Management
19P007	Surface Engineering and Tribology
19P008	Manufacture of Automotive Components
19P009	Lean Manufacturing
19P010	Material Handling Systems
19P011	Non -Traditional Machining Techniques
19P012	Supply Chain Management
19P013	PLC Programming and Applications
19P014	Mechanical Vibrations
19P015	Precision Manufacturing
19P016	Product Development Strategies
19P017	Composite Materials Processing
19P018	Industrial Ergonomics
19P019	Computational Fluid Dynamics
19P020	Six Sigma
19P021	Additive Manufacturing
19P022	Measurement Systems
19P023	Statistical Quality Control
19P024	Automated Assembly System Design
19P025	Sustainable Mobility and Logistics
19P026	Work System Design

ONE-CREDIT COURSES

PRODUCTION ENGINEERING

19PF01	Precision Machining
19PF02	Non Destructive Testing of Aircraft Structures
19PF03	Introduction to Design and manufacture of Armour Systems
19PF04	Advanced Materials for Armour Applications

HUMANITIES

19OFA1	Export – Import Practices
19OFA2	Insurance - Concepts and Practices
19OFA3	Public Finance
19OFA4	Security Analysis and Portfolio Management
19OFA5	Social Entrepreneurship

ENGLISH

19GF01	Interpersonal and Organizational Communication
19GF02	Human Values Through Literature

Summary of Credit Distribution

BE PRODUCTION ENGINEERING (SANDWICH)												
S. No	Course Category	Credits Per Semester										Total Credits
		1	2	3	4	5	6	7	8	9	10	
1	HS	5	2	3	0	0	0	0	0	0	0	10
2	BS	10	11	3	0	3	0	0	0	0	0	27
3	ES	4	5	11	10	0	0	0	0	0	0	30
4	PC	0+5*	0+5*	4+5*	5+5*	15+5*	16+5*	5+5*	12+5*	2+5*	0	59
5	PE	0	0	0	0	0	3	3	3	9	0	18
6	OE	0	0	0	0	0	0	0	0	3	3	6
7	EEC	0	0+2 [£]	0	1	1	1	0	4	2	4	15
8	MC	-	-	-	-	-	-	-	-	-	-	-
	TOTAL	19+5*	18+2+5^{£*}	21+5*	16+5*	19+5*	20+5*	8+5*	19+5*	16+5*	7	165

£ Summer Term Course(s)

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