

**University of Pune**

**Structure of S E Civil Engineering - 2008 Course**

**Semester I**

Sub. Code No.	Subject Title	Teaching Scheme Hours per week		Examination Scheme				Total Marks
		Lect.	Pract/Drg	Paper	TW	Pract.	Oral	
207001	Engineering Mathematics III	04	---	100	---	---	---	<b>100</b>
201001	Building Materials and Construction	04	04	100	25	---	50	<b>175</b>
201002	Strength of Materials	04	02	100	25	---	50	<b>175</b>
207009	Engineering Geology	04	02	100	25	---	---	<b>125</b>
201003	Geotechnical Engineering	04	02	100	25	---	50	<b>175</b>
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>---</b>	<b>150</b>	<b>750</b>

**Semester II**

Sub. Code No.	Subject Title	Teaching Scheme Hours per week		Examination Scheme				Total Marks
		Lect.	Pract/Drg	Paper	TW	Pract.	Oral	
201004	Fluid Mechanics I	04	02	100	25	---	50	<b>175</b>
201005	Building Planning	03	04	100	25	---	50	<b>175</b>
201006	Surveying	04	04	100	25	50	---	<b>175</b>
201007	Concrete Technology	03	02	100	25	---	---	<b>125</b>
201008	Structural Analysis - I	04	---	100	---	---	---	<b>100</b>
	<b>Total</b>	<b>18</b>	<b>12</b>	<b>500</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>750</b>

**UNIVERSITY OF PUNE**

**Structure of T.E. (Civil Engineering) 2008 course with effective from 2010**  
Semester I

Sub. code No.	Subject Title	Teaching Scheme Hours per week			Examination Scheme				Total Marks
		Lect..	Tut.	Pract /Drg	Paper	TW	Pract.	Oral	
301001	Structural Analysis - II	4	--	--	100	--	--	--	100
301002	Infrastructure Engg. and Construction Techniques	4	--	2	100	25	--	--	125
301003	Structural Design I	4	--	4	100	25	--	50	175
301004	Fluid Mechanics - II	4	--	2	100	25	--	50	175
301005	Advanced Surveying	4	--	2	100	25	--	50	175
	<b>Total</b>	<b>20</b>	<b>--</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>150</b>		<b>750</b>

**Structure of T.E. (Civil Engineering) 2008 course**  
Semester II

Sub. code No.	Subject Title	Teaching Scheme Hours per week			Examination Scheme				Total Marks
		Lect..	Tut.	Pract /Drg	Paper	TW	Pract.	Oral	
301006	Hydrology & Water Resources Engg.	4	--	--	100	--	--	--	100
301007	Project Management & Engineering Economics	4	--	2	100	--	--	50	150
301008	Structural Design II	4	--	4	100	25	--	50	175
301009	Environmental Engineering I	4	--	2	100	25	50	--	175
301010	Foundation Engg.	4	--	--	100	--	--	--	100
	Seminar	--	--	2		50	--	--	50
	<b>Total</b>	<b>20</b>	<b>--</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>150</b>		<b>750</b>

**UNIVERSITY OF PUNE**

**Structure of B.E. (Civil Engineering) 2008 course with effective from 2011**  
Semester I

Sub. code No.	Subject Title	Teaching Scheme Hours per week			Examination Scheme				Total Marks
		Lect..	Tut.	Pract /Drg	paper	TW	Pract.	Oral	
401001	Environmental Engineering - II	4	--	2	100	25	-	50	175
401002	Dams and Hydraulic Structures	4	--	2	100	25	--	50	175
401003	Structural Design – III	4	--	2	100	25	--	50	175
401004	Elective I	4	--	2	100	25	--	--	125
401005	Elective II	4	--	--	100	--	--	--	100
401006	Project Work	--	--	2	--	--	--	--	--
	<b>Total</b>	<b>20</b>	<b>--</b>	<b>12</b>	<b>500</b>	<b>100</b>	<b>150</b>		<b>750</b>

**Structure of B.E. (Civil Engineering) 2008 course**  
Semester II

Sub. code No.	Subject Title	Teaching Scheme Hours per week			Examination Scheme				Total Marks
		Lect..	Tut.	Pract /Drg	paper	TW	Pract.	Oral	
401007	Elective – III	4	--	2	100	25	--	--	125
401008	Elective -IV	4	--	2	100	25	--	--	125
401009	Quantity Surveying & Contracts and Tenders	4	--	2	100	25	--	50	175
4010010	Transportation Engg.	4	--	2	100	25	--	50	175
401006	Project Work	--	--	6	--	100	--	50	150
	<b>Total</b>	<b>16</b>	<b>--</b>	<b>14</b>	<b>400</b>	<b>200</b>	<b>150</b>		<b>750</b>

<b>Semester I</b>	
<p><b>Elective - I</b></p> <ol style="list-style-type: none"> <li>1. Systems Approach in Civil Engg.</li> <li>2. Structural Design of Bridges</li> <li>3. Advanced Environmental Management</li> <li>4. Open Elective</li> </ol>	<p><b>Elective - II</b></p> <ol style="list-style-type: none"> <li>1. Advanced Structural Design</li> <li>2. Matrix methods of structural analysis</li> <li>3. Earthquake Engineering</li> <li>4. Open Elective</li> </ol>
<b>Semester II</b>	
<p><b>Elective - III</b></p> <ol style="list-style-type: none"> <li>1. Construction Management</li> <li>2. Advanced Engineering Geology with Rock Mechanics</li> <li>3. TQM and MIS</li> <li>4. Open Elective</li> </ol>	<p><b>Elective - IV</b></p> <ol style="list-style-type: none"> <li>1. Advanced Transportation Engineering</li> <li>2. Architecture And Town Planning</li> <li>3. Waterways and coastal Engineering</li> <li>4. Open Elective</li> </ol>

## S.E. Mechanical 2008 Structure (w.e.f. June – 2009)

### FIRST TERM

CODE	SUBJECT	TEACHING SCHEME		EXAMINATION SCHEME				
		Lect.	Pract/Dwg	Paper	TW	Oral	Pr	Total
202041	Applied Thermodynamics	4	2	100	25	50	-	175
205042	Metallurgy	4	2	100	25	-	-	125
202043	Fluid Mechanics	4	2	100	25	50	-	175
202044	Machine Drawing & Computer Graphics	2	4	-	25	-	50	75
207002	Engineering Mathematics III	4	-	100	-	-	-	100
202046	Manufacturing Processes	3	-	100	-	-	-	100
<b>Total of First Term</b>		<b>21</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>100</b>	<b>50</b>	<b>750</b>

### SECOND TERM

CODE	SUBJECT	TEACHING SCHEME		EXAMINATION SCHEME				
		Lect.	Pract/Dwg	Paper	TW	Oral	Pr	Total
202047	Theory of Machines -I **	4	2	100	50	-	-	150
202048	I.C. Engines	4	2	100	25	-	50	175
202049	Geometric Modelling	-	4	-	25	-	50	75
203050	Electrical Technology	4	2	100	25	-	-	125
202051	Strength of Machine Elements	4	-	100	--	-	-	100
202052	Production Technology	3	-	100	-	-	-	100
211053	Workshop Practice I	-	2	-	25	-	-	25
<b>Total of Second Term</b>		<b>19</b>	<b>12</b>	<b>500</b>	<b>150</b>	<b>-</b>	<b>100</b>	<b>750</b>

\*\* Theory paper of 4 Hours duration.

## T.E. Mechanical 2008 Structure (w.e.f. June – 2010)

### FIRST TERM

CODE	SUBJECT	TEACHING SCHEME		EXAMINATION SCHEME				
		Lect.	Pract/Dwg	Paper	TW	Oral	Pr	Total
302041	Machine Design- I **	4	2	100	50	-	-	150
302042	Heat Transfer	4	2	100	-	-	50	150
302043	Theory of Machines II	4	2	100	-	50	-	150
302044	Technology Management	3	-	100	-	-	-	100
302045	Computer Oriented Numerical Methods	4	2	100	-	-	50	150
302046	Seminar***	-	2	-	50	-	-	50
<b>Total of First Term</b>		<b>19</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>750</b>

\*\* Theory paper of 4 Hours duration

\*\*\* The Term Work marks for Seminar will be based on the presentation and oral examination . The examination will be conducted by the two internal examiners (among the approved teachers only) appointed by the Principal of the concerned college

### SECOND TERM

CODE	SUBJECT	TEACHING SCHEME		EXAMINATION SCHEME				
		Lect.	Pract/Dwg	Paper	TW	Oral	Pr	Total
302047	Machine Design- II**	4	2	100	-	50	-	150
311048	Metrology & Quality Control	3	2	100	25	-	-	125
302049	Turbo Machines	4	2	100	-	50	-	150
302050	Mechatronics	4	2	100	50	-	-	150
302051	Refrigeration And Air Conditioning	4	2	100	25	-	-	125
311052	Workshop Practice II	-	2	-	50	-	-	50
<b>Total of Second Term</b>		<b>19</b>	<b>12</b>	<b>500</b>	<b>150</b>	<b>100</b>	<b>-</b>	<b>750</b>

\*\* Theory paper of 4 Hours duration

## B.E. Mechanical 2008 Structure (w.e.f. June – 2011)

### FIRST TERM

CODE	SUBJECT	TEACHING SCHEME		EXAMINATION SCHEME				
		Lect.	Pract/Dwg	Paper	TW	Oral	Pr	Total
402041	CAD/CAM Automation	4	2	100	25	50	-	175
402042	Dynamics of Machinery	4	2	100	25	50	-	175
402043	Industrial Fluid Power	4	2	100	25	50	-	175
402044	Elective I ***	4	-	100	25	-	-	125
402045	Elective II	4	-	100	-	-	-	100
402046	Project Work	-	2	-	-	-	-	-
<b>Total of First Term</b>		<b>20</b>	<b>8</b>	<b>500</b>	<b>100</b>	<b>150</b>	<b>-</b>	<b>750</b>

### SECOND TERM

CODE	SUBJECT	TEACHING SCHEME		EXAMINATION SCHEME				
		Lect.	Pract/Dwg	Paper	TW	Oral	Pr	Total
402046	Project Work	-	6	-	100	50	-	150
402047	Power Plant Engineering	4	2	100	25	50	-	175
402048	Mechanical System Design**	4	2	100	25	50	-	175
402049	Elective III	4	2	100	50	-	-	150
402050	Elective IV	4	-	100	-	-	-	100
<b>Total of Second Term</b>		<b>16</b>	<b>12</b>	<b>400</b>	<b>200</b>	<b>150</b>	<b>-</b>	<b>750</b>

\*\* Theory paper of 4 Hours duration

\*\*\* The Term Work marks will be based on the Assignments / Seminar as prescribed by subject syllabus

\*\*\*\* Open Elective Subject- BOS Mechanical will declare the list of subjects which can be taken under open elective..

Elective 1		Elective 2	
402044A	Energy Audit & Management	402045A	Automobile Engineering
402044B	Product Design & Development	402045B	Machine Tool Design

402044C	Theory & Design of Pumps, Blowers and Compressors	402045C	Quantitative & Decision Making Techniques
402044D	Tribology	402045D	Open Elective Subject (self study)****

<b>Elective 3</b>		<b>Elective 4</b>	
402049A	Computational Fluid Dynamics	402050A	Industrial Heat Transfer Equipment
402049B	Finite Element Method	402050B	Management Information System
402049C	Robotics	402050C	Reliability Engineering
402049D	Advance Air-conditioning & Refrigeration	402050D	Open Elective Subject (self study )****



**University of Pune**  
**S.E. Electrical Engineering 2008 - Course (w.e.f. 2009)**

<b>SEMESTER_I</b>									
Sr. No.	Subject No.	Subject	Teaching Scheme		Examination Scheme				Total Marks
			L	P	P	TW	PR	OR	
01	202001	Power Plant Engineering	04	02	100	50	----	----	150
02	207003	Engineering Maths III	04	----	100	----	----	----	100
03	203141	Material Science	04	02	100	50	----	----	150
04	203142	Analog & Digital Electronics	04	02	100	----	50	----	150
05	203143	Electrical Measurements and Instrumentation	04	02	100	----	50	----	150
06	211121	Modern Manufacturing Techniques	----	02	----	50	----	----	50
<b>Total</b>			<b>20</b>	<b>10</b>	<b>500</b>	<b>150</b>	<b>100</b>		<b>750</b>

**University of Pune**

<b>SEMESTER-II</b>									
Sr. No.	Subject No.	Subject	Teaching Scheme		Examination Scheme				Total Marks
			L	P	P	TW	PR	OR	
01	203144	Power System I	04	----	100	----	----	----	100
02	203145	Electrical Machines I	04	02	100	---	50	----	150
03	203146	Network Analysis	04	02	100	50	----	----	150
04	203147	Digital Computational Techniques	04	----	100	----	----	----	100
05	203148	Computer Programming	02	02	----	50	50	----	100
06	203149	Microprocessor Fundamental & Applications	04	02	100	----	----	50	150
<b>Total</b>			<b>22</b>	<b>08</b>	<b>500</b>	<b>100</b>	<b>150</b>		<b>750</b>

## T.E. Electrical Engineering 2008 - Course (w.e.f. 2010)

SEMESTER I									
Sr. No.	Subject Code	Subject Title	Teaching Scheme		Examination Scheme				Total Marks
			L	P	P	TW	PR	OR	
1.	311121	Engineering Economics & Management	04	-	100	-	-	-	100
2.	303141	Micro-controller Applications	04	02	100	-	-	50	150
3.	303142	Electrical Machines-II	04	02	100	25	50	-	175
4.	303143	Power Electronics	04	02	100	25	50	-	175
5.	303144	Electrical Installation, Maintenance & Testing	04	02	100	50	-	-	150
			<b>20</b>	<b>08</b>	<b>500</b>	<b>100</b>	<b>150</b>		<b>750</b>

SEMESTER-II									
Sr. No.	Subject Code	Subject Title	Teaching Scheme		Examination Scheme				Total Marks
			L	P	P	TW	PR	OR	
1.	303145	Power System-II	04	02	100	25	50	-	175
2.	303146	Energy Audit & Management	04	--	100	--	-	--	100
3.	303147	Utilization of Electrical Energy.	04	---	100	--	--	--	100
4.	303148	Design of Electrical Machines	04	04	100	25	-	50	175
5.	303149	Control System -I	04	02	100	50	---	--	150
6.	303150	Seminar *	-	02	-	50	-	-	50
			<b>20</b>	<b>10</b>	<b>500</b>	<b>150</b>	<b>100</b>		<b>750</b>

**Note : Practical/ Oral is based on Term Work.**

\*The Term Work marks for Seminar will be Based on the presentation and oral examination. The Examination will be conducted by two internal Examiners ( among the approved teachers only) appointed by Principal of concerned college .

**University of Pune**  
**B.E. Electrical Engineering 2008 - Course (w.e.f. 2011)**

SEMESTER -I									
Sr No	Subject code	Subject Title	Teaching Scheme		Exam. Scheme				Total Marks
			L	P	P	TW	PR	OR	
1.	403141	Switchgear and Protection	04	02	100	25	--	50	175
2.	403142	Industrial Drives & Control	04	02	100	25	50	-	175
3.	403143	Elective – I	04	--	100	--	--	--	100
4.	403144	Elective – II	04	--	100	--	--	--	100
5.	403145	Control System – II	04	02	100	50	--	50	200
6.	403146	Project	--	02	--	--	--	--	--
			<b>20</b>	<b>08</b>	<b>500</b>	<b>100</b>	<b>150</b>		<b>750</b>

SEMESTER -II									
Sr. No	Subject code	Subject Title	Teaching Scheme		Exam .Scheme				Total Marks
			L	P	P	TW	PR	OR	
1.	403147	PLC & SCADA applications	04	02	100	25	--	50	175
2.	403148	Power System Operation & Control	04	02	100	25	--	50	175
3.	403149	Elective – III	04	02	100	--	--	50	150
4.	403150	Elective – IV	04	--	100	--		--	100
5.	403146	Project	--	06	--	100	--	50	150
			<b>16</b>	<b>12</b>	<b>400</b>	<b>150</b>	<b>200</b>		<b>750</b>

**Elective – I (403143)**

- a) Robotics & Automation
- b) Power Quality
- c) Illumination Engineering
- d) Project Management

**Elective – III (403149)**

- a) VLSI Design
- b) High Voltage Engineering
- c) Digital Signal Processing
- d) ANN & Its Application in Elect. Engg.

**Elective – II (403144)**

- a) Restructuring & Deregulation
- b) Embedded System
- c) EHV Transmission
- d) Open Elective

**Elective – IV (403150)**

- a) Modelling of Elect. System
- b) Renewable Energy System
- c) Digital Control System
- d) Open Elective

**Prof. M.G. Unde**  
**Chairman, Board of Studies**  
**Electrical Engineering**  
**University of Pune**

## SE (Production- Sandwich) 2008 Course structure

### Semester- I

Subject Code No.	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr./Dwg	Theory	TW	Oral	Pr.	Total
207002*	Engineering Mathematics III	4	-	100	-	-	-	100
202085*	Heat & Fluid Engineering	4	2	100	50	-	-	150
211081*	Strength of Machine Elements	4	-	100	-	-	-	100
211121	Manufacturing Processes	4	2	100	50	-	-	150
211083*	Material Science	4	2	100	50	-	-	150
211084*	M/c Drawing & Computer Graphics	2	2	-	50	50	-	100
	<b>Total</b>	<b>22</b>	<b>8</b>	<b>500</b>	<b>200</b>	<b>50</b>	<b>-</b>	<b>750</b>

**Total of Part I = 750 Marks**

### Semester II

Subject Code No.	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr./Dwg	Theory	TW	Oral	Pr.	Total
203050*	Electrical Technology	4	2	100	50	-	-	150
211086*	Theory of Machines	4	2	100	-	50	-	150
211122	Manufacturing Engineering & Metrology Practices	4	2	100	-	50	-	150
211088*	Design of Machine Element	4	2	100	50	-	-	150
211123	Production & Industrial Management-I	4	-	100	-	-	-	100
211124	Computer Graphics Lab	-	2	-	50	-	-	50
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>500</b>	<b>150</b>	<b>100</b>	<b>-</b>	<b>750</b>

**Total of Part II = 750 Marks**

Total of Part I & Part II = 1500 Marks

Pr- Practical Dwg- Drawing TW- Term Work

Note: Practical/Oral Based On Term Work

- Common to SE (Production/Industrial)

## TE (Production- Sandwich) 2008 Course structure

### Semester- I

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
311121	Industrial In-plant Training for 6 months	-	-	-	150	100*	-	250
311122	Manufacturing. Technology (self study)\$	-	-	100	50	-	-	150
311123	Seminar				50	50		100
	<b>Total</b>			<b>100</b>	<b>250</b>	<b>150</b>		<b>500</b>

\* - oral based on TW by one internal guide & one external examiner from industry.

\$ - Students should study this subject during training & contact supervisor for guidance.

### *Semester II*

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
311124	Kinematics Design of Machines	4	2	100	-	50	-	150
311125	Material forming & Mould design	4	2	100	-	50	-	150
311126	Operations Research	4	2	100	-	50	-	150
311127	Production Management II	4	2	100	50	-	-	150
311128	Business Management & Engg. Economics	4	-	100	-	-	-	100
311129	Production System Design	-	2	-	50		-	50
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>150</b>		<b>750</b>

Th- Theory

Pr- Practical

Dw- Drawing

Tw- Term Work

## BE (Production-Sandwich) 2008 Course structure

### Semester- I

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
411121	Mechatronics	4	2	100	-	50	-	150
411122	Numerical techniques & Database Applications	4	2	100	-	50	-	150
411123	Advanced Production Technology	4	2	100	-	50	-	150
411124	Elective I	4	-	100	-	-	-	100
411125	Elective II	4	-	100	-	-	-	100

### Semester II

411126	Computer Applications in Production Engineering		2		50	-	-	50
	<b>Total</b>	<b>20</b>	<b>8</b>	<b>500</b>	<b>50</b>	<b>150</b>		<b>700</b>

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
411127	Industrial In-plant Training for 6 Months	-	-	-	150	100	-	250
411128	Project	-	-	-	100	100	-	200
411129	Elective III ( Self Study)	-	-	100	50	-	-	150
411130	Seminar				50	50		100
	<b>Total</b>	<b>-</b>	<b>-</b>	<b>100</b>	<b>350</b>	<b>250</b>		<b>700</b>

**Elective I**

1. Financial Management & Cost Control
2. Reliability Engineering
3. Product Development
4. Computer Integrated Design & Manufacturing

**Elective II**

1. Materials Management & Logistics
2. Machine tool design
3. Ergonomics and Human Factors in Engineering
4. Industrial Robotics

**Elective III**

1. Supply Chain Management
2. Project Management & Project Finance
3. Plant Engineering & Maintenance
4. Marketing Management



**SE (Prod. /Industrial Engineering) (2008 Course) Structure**  
**Semester- I**

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr./Dw	Theory	Tw	Oral	Pr.	Total
207002	Engineering Mathematics III	4	-	100	-	-	-	100
202085	Heat and Fluid Engineering	4	2	100	50	-	-	150
211081	Strength Of Machine Elements	4	-	100	-	-	-	100
211082	Machine Tool Operations	4	2	100	-	50	-	150
211083	Material Science	4	2	100	50	-	-	150
211084	M/C Drawing & Computer Graphics	2	2	-	50	50	-	100
	<b>Total</b>	<b>22</b>	<b>8</b>	<b>500</b>	<b>150</b>	<b>100</b>	<b>-</b>	<b>750</b>

**Semester II**

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr./Dw.	Theory	Tw	Oral	Pr.	Total
203050	Electrical Technology	4	2	100	50	-	-	150
211086	Theory of Machines	4	2	100	-	50	-	150
211087	Welding and Foundry	4	2	100	-	50	-	150
211088	Design of Machine Element	4	2	100	50	-	-	150
211089	Industrial Organization and Management	4	-	100	-	-	-	100
211090	Workshop Practice	-	2	-	-	-	50	50
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>100</b>	<b>50</b>	<b>750</b>

Pr- Practical

Dwg- Drawing

Tw- Term Work

Note: Practical/Oral Based On Term Work

## TE (Industrial Engineering) 2008 Course structure

### Semester- I

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
311101	Production & Operations Management	4	-	100		-	-	100
311102	Advanced Statistics & Numerical Methods	4	2	100	50	-	-	150
311103	Work study	4	-	100	-	-	-	100
311104	Computer Programming & Applications	2	2	-	50	-	50	100
311105	Metrology & QC	4	-	100	-	-	-	100
311106	Machine Design	4	2	100	50	-	-	150
311107	Production Practice- IV	-	2	-	-	-	50	50
<b>Total</b>		<b>22</b>	<b>8</b>	<b>500</b>	<b>150</b>	<b>-</b>	<b>100</b>	<b>750</b>

### Semester II

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
311108	Operation Research	4	2	100	50	-	-	150
311109	Ergonomics & Product Design	4	2	100	-	50	-	150
311110	Facilities Planning	4	-	100	-	-	-	100
311111	Management Information Systems	4	2	100	50	-	-	150
311112	Materials Management	4	2	100	-	50	-	150
311113	Seminar	-	2	-	-	50	-	50
<b>Total</b>		<b>20</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>150</b>	<b>-</b>	<b>750</b>

Th: Theory      Pr: Practical      Dw: Drawing      Tw: Term Work      Or: Oral  
 Note: Practical/Oral based on Term Work

## BE (Industrial Engineering) 2008 Course structure

### Semester- I

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
411101	Financial Management & Costing	4	2	100	50	-	-	150
411102	Project Management	4	2	100	-	50	-	150
411103	Quantitative Techniques	4	2	100	50	50	-	200
411104	Elective I	4	2	100	-	50	-	150
411105	Elective II	4	-	100	-	-	-	100
411106	Project Work **	-	2	-	-	-	-	-
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>150</b>	<b>-</b>	<b>750</b>

### Semester II

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
411108	Reliability Engineering	4	2	100	25	-	-	125
411109	Energy Management	4	2	100	25	50	-	175
411110	Elective III	4	2	100	-	50	-	150
411111	Elective IV	4	-	100	-	-	-	100
411112	Project Work	-	6	-	100	100	-	200
	<b>Total</b>	<b>16</b>	<b>12</b>	<b>400</b>	<b>150</b>	<b>200</b>	<b>-</b>	<b>750</b>

Th: Theory

Pr: Practical

Dw: Drawing

Tw: Term Work

Or: Oral

Note: Practical/Oral based on Term Work

**Elective I**

1. Advanced Ergonomics
2. Logistics & Warehousing Management
3. Material Forming
4. Human Resource Management

**Elective II**

1. Industrial Laws
2. World class Manufacturing
3. Machine Tool Technology
4. Development of Professional skills

**Elective III**

1. IE applications in service sector
2. Supply chain Management
3. Manufacturing Automation
4. Process Planning & Manufacturing Engineering

**Elective IV**

1. Part Modeling & FEM
2. Plastics Engineering
3. Manufacturing Strategies
4. Quality Management

## SE (Prod. /Industrial Engineering) (2008 Course) Structure

### Semester- I

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr./Dw	Theory	Tw	Oral	Pr.	Total
207002	Engineering Mathematics III	4	-	100	-	-	-	100
202085	Heat and Fluid Engineering	4	2	100	50	-	-	150
211081	Strength Of Machine Elements	4	-	100	-	-	-	100
211082	Machine Tool Operations	4	2	100	-	50	-	150
211083	Material Science	4	2	100	50	-	-	150
211084	M/C Drawing & Computer Graphics	2	2	-	50	50	-	100
	<b>Total</b>	<b>22</b>	<b>8</b>	<b>500</b>	<b>150</b>	<b>100</b>	<b>-</b>	<b>750</b>

### Semester II

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr./Dw.	Theory	Tw	Oral	Pr.	Total
203050	Electrical Technology	4	2	100	50	-	-	150
211086	Theory of Machines	4	2	100	-	50	-	150
211087	Welding and Foundry	4	2	100	-	50	-	150
211088	Design of Machine Element	4	2	100	50	-	-	150
211089	Industrial Organization and Management	4	-	100	-	-	-	100
211090	Workshop Practice	-	2	-	-	-	50	50
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>100</b>	<b>50</b>	<b>750</b>

Pr- Practical

Dwg- Drawing

Tw- Term Work

Note: Practical/Oral Based On Term Work

## TE (Production) (2008 Course) structure

### Semester- I

Subject Code	Subject	Teaching Scheme(Hrs)			Examination Scheme			
		Lecture	Pr./Dw	Theory	Tw	Oral	Pr.	Total
311081	Metrology & Mechanical Measurement	4	2	100	-	-	50	150
311082	Kinematics of Manufacturing Machines	4	2	100	50	-	-	150
311083	Material Forming	4	2	100	-	50	-	150
311084	Production Management	4	-	100	-	-	-	100
311085	Cutting Tool Engineering	4	2	100	50	-	-	150
311086	Production Practice –I	-	2	-	-	-	50	50
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>750</b>

### Semester II

Subject Code	Subject	Teaching Scheme(Hrs)			Examination Scheme			
		Lecture	Pr./Dw	Theory	Tw	Oral	Pr.	Total
311087	Advanced Machine Tools	4	2	100	50	-	-	150
311088	Tool Design	4	2	100		50	-	150
311089	Industrial Engineering & Quality Assurance	4	-	100	-	-	-	100
311090	Numerical Techniques and Database.	4	2	100	50	-	-	150
311091	Production Metallurgy	4	2	100	50	-	-	150
311092	Seminar	-	2	-	-	50	-	50
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>500</b>	<b>150</b>	<b>100</b>	<b>-</b>	<b>750</b>

Th: Theory

Pr: Practical

Dw: Drawing

Tw: Term Work Or: Oral

## BE (Production) 2008 Course structure

### Semester- I

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
411081	Machine Tool Design	4	2	100	25	50	-	175
411082	Manufacturing Automation	4	2	100	25	-	50	175
411083	Operations Research	4	2	100	50		-	150
411084	Elective I	4	2	100	50	-	-	150
411085	Elective II	4	-	100	-	-	-	100
411086	Project Work**	-	2	-	-	-	-	-
<b>Total</b>		<b>20</b>	<b>10</b>	<b>500</b>	<b>150</b>	<b>50</b>	<b>50</b>	<b>750</b>

### Semester II

**\*\* It is mandatory to submit preliminary project report for the grant of the term I**

Subject Code	Subject	Teaching Scheme (Hrs)		Examination Scheme				
		Lecture	Pr/Dw	Th	Tw	Or	Pr	Total
411086	Project Work	-	6	-	100	50	-	150
411087	Computer Integrated Design & Manufacturing	4	2	100	-	-	50	150
411088	Process Planning and Tool Selection	4	2	100	-	50	-	150
411089	Elective III	4	2	100	50	-	-	150
411090	Elective IV	4	-	100	-	-	-	100
411091	Manufacturing Costing & Analysis		2	-	50	-	-	50
<b>Total</b>		<b>16</b>	<b>14</b>	<b>400</b>	<b>200</b>	<b>100</b>	<b>50</b>	<b>750</b>

**Th: Theory**

**Pr: Practical**

**Dw: Drawing**

**Tw: Term Work**

**Or: Oral**

**Elective I**

1. Plastic Engineering
2. Industrial Robotics
3. Powder Metallurgy
4. Microprocessor Applications

**Elective II**

1. Ergonomics and Human Factors in Engineering.
2. Materials and Logistic Management
3. Simulation & Modeling
4. Plant Engineering & Maintenance

**Elective III**

1. Automobile Engineering
2. Mechatronics
3. Metal working Tribology
4. Finite Element Analysis

**Elective IV**

1. World Class Manufacturing
2. Design for manufacture
3. Intelligent Manufacturing Systems
4. Total Quality Management



### S.E. Instrumentation and Control

#### Term I

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				
		Hrs./week			Paper	Term work	Practical	Oral	Total
Lecture	Tutorial	Practical							
207003	Engineering Mathematics-III	04	-	-	100	-	-	-	100
206261	Fundamentals of Instrumentation	04	-	02	100	50	-	-	150
206262	Linear Integrated Circuit	04	-	02	100	-	50	-	150
206263	Principles of Sensors & Transducers	04	-	02	100	25	50	-	175
206264	Automatic Control Systems	04	-	02/02	100	50	-	-	150
206265	Soft Skills	-	-	02/02	-	25	-	-	25
	Total	20		08	500	150	100	-	750

#### Term II

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				
		Hrs./week			Paper	Term work	Practical	Oral	Total
Lecture	Tutorial	Practical							
206266	Digital Techniques	04	-	02	100	-	50	-	150
206267	Applied Electronics	04	-	02	100	-	50	-	150
206268	Transducers & Signal Conditioning	04	-	02	100	25	50	-	175
206269	Photonics & Instrumentation	04	-	02	100	50	-	-	150
206270	Drives and Controls	04	-	-	100	25	-	-	125
	Total	20		08	500	100	150		750

### T.E. Instrumentation and Control

#### Term I

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				
		Hrs./week			Paper	Term work	Practical	Oral	Total
		Lecture	Tutorial	Practical					
306261	Control System Design	04	-	02	100	50	-	-	150
306262	Embedded System Design	04	-	02	100	25	50	-	175
306263	Control System Components	04	-	02	100	25	-	-	125
306264	Electronic Instrumentation	04	-	02	100	-	50	-	150
306265	Industrial Management	04	-	-	100	-	-	-	100
306266	Application Programming			02		50			50
	Total	20		10	500	150	100	-	750

#### Term II

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				
		Hrs./week			Paper	Term work	Practical	Oral	Total
		Lecture	Tutorial	Practical					
306267	Digital Signal Processing Fundamentals	04	-	02	100	50	-	-	150
306268	Power Plant Instrumentation	04	-	-	100	-	-	-	100
306269	Process Loop Components	04	-	02	100	-	50	-	150
306270	Instrumentation System Design	04	-	02	100	-	-	50	150
306271	Instrumentation for Chemical Analysis	04	-	02	100	-	-	50	150
306272	Seminar	-	-	02	-	50	-	-	50
	Total	20		10	500	100	50	100	750

### B.E. Instrumentation and Control

#### Term I

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				
		Hrs./week			Paper	Term work	Practical	Oral	Total
		Lecture	Tutorial	Practical					
406261	Process Instrumentation	04	-	02	100	-	50	-	150
406262	Digital Control	04	-	02	100	50	-	-	150
406263	Project Engineering and Management	04	-	02	100	25	-	50	175
406264	Elective I	04	-	02	100	-	-	50	150
406265	Elective II	04	-	-	100	-	-	-	100
406266	Project Work	-	-	02	-	-	-	-	-
406267	Industrial Visit I	-	-	-	-	25	-	-	25
	<b>Total</b>	<b>20</b>		<b>10</b>	<b>500</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>750</b>

#### Term II

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				
		Hrs./week			Paper	Term work	Practical	Oral	Total
		Lecture	Tutorial	Practical					
406268	Process Dynamics and Control	04	-	02	100	25	-	50	175
406269	Industrial Automation	04	-	02	100	-	-	50	150
406270	Elective III	04	-	02	100	50	-	-	150
406271	Elective IV	04	-	-	100	-	-	-	100
406272	Project Work	-	-	06	-	100	-	50	150
406273	Industrial Visit II	-	-	-	-	25	-	-	25
	<b>Total</b>	<b>16</b>	<b>-</b>	<b>12</b>	<b>400</b>	<b>200</b>	<b>-</b>	<b>150</b>	<b>750</b>

Elective I (406264)	Elective II (406265)	Elective III(406270)	Elective IV(406271)
(A)Biomedical Instrumentation	(A) Environmental Instrumentation	(A)Advanced Biomedical Instrumentation	(A) Instrumentation in Agriculture
(B) Laser based Instrumentation	(B) Nano Instrumentation	(B) Fiber Optic Instrumentation	(B) Micro Electro Mechanical Systems
(C) Advanced Control Systems	(C) Vacuum Instrumentation	(C) Process Modeling and Optimization	(C) Automobile Instrumentation
(D) Advanced Digital Signal Processing	Open Elective	(D) Building Automation	Open Elective

**University of Pune**  
**Structure for SE. Chemical Engineering**  
**S. E. TERM – I**

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
209341	Chemistry I	4	4		100	50			<b>150</b>
209342	Fundamentals of Chemical Engineering	1						50	<b>50</b>
209343	Chemical Engineering Fluid Mechanics	3	2		100	50	-	-	<b>150</b>
209344	Chemical Engineering Materials	3	2	-	100	-	50		<b>150</b>
209345	Chemical Process Calculations	4		-	100	-	-	-	<b>100</b>
209346	Technical Communication	1	2	-				50	<b>50</b>
207004	Engineering Mathematics –III	4	-	-	100	-	-	-	<b>100</b>
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>-</b>	<b>500</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>750</b>

**TERM – II**

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
209347	Chemistry II	4	4		100	50	-	-	<b>150</b>
209348	Heat Transfer	4	2		100	50	-	-	<b>150</b>
209349	Principles of Design	3	-	2	100	-	-	50	<b>150</b>
209350	Chemical Engineering Thermodynamics I	3	-	-	100	-	-	-	<b>100</b>
209351	Mechanical Operations	4	2		100	50		-	<b>150</b>
203353	Workshop Practice	-	2	-	-	-	-	50	<b>50</b>
	Industrial Training I (to be evaluated in Fifth Semester)	-	-	-	-	-	-	-	-
	<b>Total</b>	<b>18</b>	<b>10</b>	<b>2</b>	<b>500</b>	<b>150</b>		<b>100</b>	<b>750</b>

### T. E. Chemical Engineering

#### TERM – I

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
309341	Chemical Engineering Mathematics	4			100				<b>100</b>
309342	Mass Transfer I	4	2		100	50		25	<b>175</b>
307351	Industrial Organization & mgmt	3	2		100			25	<b>125</b>
309343	Chemical Process Technology	4	2		100		50		<b>150</b>
309344	Chemical Engineering Thermodynamics II	3			100				<b>100</b>
309345	Computer Aided Chemical Engineering I		4					50	<b>50</b>
309346	Industrial Training I (Evaluation)							50	<b>50</b>
	<b>Total</b>	<b>18</b>	<b>10</b>		<b>500</b>	<b>50</b>	<b>50</b>	<b>150</b>	<b>750</b>

#### TERM – II

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
309347	Chemical Reaction Engineering I	4	4		100	50			<b>150</b>
309348	Transport Phenomena	4			100				<b>100</b>
309349	Chemical Engineering Design I	3		2	100		50	25	<b>175</b>
309350	Mass Transfer II	4	2		100	50			<b>150</b>
309351	Process Instrumentation & Control	3	2		100		50		<b>150</b>
309352	Seminar			2				25	<b>25</b>
	Industrial Training II (to be evaluated in Seventh Semester)								-
	<b>Total</b>	<b>18</b>	<b>8</b>	<b>4</b>	<b>500</b>	<b>100</b>	<b>100</b>	<b>50</b>	<b>750</b>

## B. E. Chemical Engineering

### TERM – I

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
409341	Elective – I	4		2	100		50		<b>150</b>
409342	Elective- II	4			100				<b>100</b>
409343	Process Dynamics and Control	4	2		100	50			<b>150</b>
409344	Chemical Reaction Engineering II	4			100				<b>100</b>
409345	Chemical Engineering Design II	3		2	100		50		<b>150</b>
409346	Computer Aided Chemical Engineering II		4				50		<b>50</b>
409347	Industrial Training II (Evaluation)							50	<b>50</b>
409348	Project			2					-
	<b>Total</b>	<b>18</b>	<b>6</b>	<b>6</b>	<b>500</b>	<b>50</b>	<b>150</b>	<b>50</b>	<b>750</b>

### TERM – II

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
409349	Elective – III	4			100				<b>100</b>
409350	Elective – IV	4			100				<b>100</b>
409351	Process Modeling and Simulation	4	2		100		50	50	<b>200</b>
409352	Process Engineering Costing & Plant Design	4		4	100		50	50	<b>200</b>
409348	Project			6			50	100	<b>150</b>
	<b>Total</b>	<b>16</b>	<b>2</b>	<b>10</b>	<b>400</b>		<b>150</b>	<b>200</b>	<b>750</b>

**List of elective subjects:**

Subject Code No	<b>Elective I</b>	Subject Code No	<b>Elective II</b>
409341	Environmental Engineering	409342	Chemical Process Synthesis
	Membrane Technology		Advanced Materials
	Bioprocess Engineering		Polymer Technology
	Corrosion Engineering		<b>Open Elective</b>

Subject Code No	<b>Elective III</b>	Subject Code No	<b>Elective IV</b>
409349	Artificial Intelligence In Chemical Engineering	409350	Standardization and Quality Assurance in Chemical Process Industry
	Energy Conservation In Chemical Process Industries		Catalysis
	Chemical Process Safety		Nanotechnology
	Food Technology		<b>Open Elective</b>



## STRUCTURE OF

### S.E. (ELECTRONICS, ELECTRONICS & TELECOMMUNICATION) 2008 COURSE TERM – I

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
204181	Signal and Systems	3		1	100		50		150
204182	Solid states Devices & circuits	4	2		100			50	150
204183	Network analysis	4			100				100
204184	Digital Logic Design	4	2		100			50	150
204185	Power Devices & Machines	4			100				100
204186	Network and Power Lab		2			50			50
204187	Electronic Instruments and Tools		2			50			50
		19	8	1	500	100	50	100	750

### TERM – II

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
	<b>EM-III</b>	4		01`	100	25			125
204188	Integrated Circuits Applications	4	2		100			50	150
204189	Electromagnetic	3		01	100	25			125
204190	Data Structures	4	2		100			50	150
204191	Communication Theory	3	2		100		50		150
204192	Circuit Simulation & tools		2			50			50
		18	08	02	500	100	50	100	750

**Prof. G S Mundada**

**Chairman**

Board of Studies (Electronics Engg.)

University of Pune

**STRUCTURE OF  
T.E. (ELECTRONICS & TELECOMMUNICATION) 2008 COURSE  
TERM - I**

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
304181	Control systems	3			100				100
304182	Digital communication	4	2		100			50	150
304183	Network synthesis and Filter Design	3	2		100	50			150
304184	Microcontrollers & Application	3	2		100			50	150
304185	Digital Signal Processing	4	2		100		50		150
304186	Electronic Design Practice	1	2				50		50
		18	10	0	500	50	100	100	750

**TERM – II**

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
304187	Signal Coding and Estimation Theory	4	2		100			50	150
304188	System programming and OS	3	2		100	50			150
304189	Computer Organization and Architecture	4			100				100
304190	Industrial management	3			100				100
304191	Wave Theory and Antennas	3	2		100			50	150
304192	Mini project & Seminar		2				50		50
304193	Test and Measurement Techniques	1	2				50		50
		18	10		500	50	100	100	750

**Prof. G S Mundada**  
**Chairman**  
Board of Studies (Electronics Engg.)  
University of Pune

**STRUCTURE OF  
T.E. (ELECTRONICS) 2008 COURSE**

**TERM - I**

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
304201	Feedback Control systems	3			100				100
304202	Data communication	4	2		100		50		150
304203	Network synthesis and Filter Design	3	2		100	50			150
304204	Microcontrollers	3	2		100			50	150
304205	Power Electronics	4	2		100			50	150
304206	Electronic Design Practice	1	2				50		50
		18	10	0	500	50	100	100	750

**TERM – II**

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
304207	Drives and Controls	4	2		100			50	150
304208	Sensors & Interfaces	3	2		100	50			150
304209	Microcomputer Based Systems	3	2		100			50	150
304210	Industrial Management	3			100				100
304211	Discrete Time Signal Processing	3		1	100				100
304212	Mini project & Seminar		2				50		50
304213	Test and Measurement Techniques	1	2				50		50
		17	10	1	500	50	100	100	750

**Prof. G S Mundada**

**Chairman**

Board of Studies (Electronics Engg.)

University of Pune

**STRUCTURE OF  
B.E. (ELECTRONICS & TELECOMMUNICATION) 2008 COURSE**

**TERM - I**

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
404181	Electronic Product Design	3		1	100	25			125
404182	VLSI Design	4	2		100			50	150
404183	Telecommunication Switching Systems	4	2		100		50		150
404184	Elective (I)	4	2		100	25		50	175
404185	Elective (II)	4			100				100
404186	Project (part-I)		2			50			50
		19	8	1	500	100	50	100	750

**TERM – II**

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
404187	Computer Network	4	2		100		50		150
404188	Optical & Microwave Communication	4	2		100	25		50	175
404189	Elective (III)	4	2		100	25		50	175
404190	Elective (IV)	4			100				100
404191	Project (Part-II)		6			100	50		150
		16	12	0	400	150	100	100	750

**Prof. G S Mundada**  
**Chairman**  
Board of Studies (Electronics Engg.)  
University of Pune

## STRUCTURE OF

### B.E. (ELECTRONICS) 2008 COURSE

#### TERM - I

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
404201	Electronic Product Design	3		1	100	25			125
404202	VLSI Design	4	2		100			50	150
404203	Process Automation	4	2		100		50		150
404204	Elective (I)	4	2		100	25		50	175
404205	Elective (II)	4			100				100
404206	Project (Part-I)		2			50			50
		19	8	1	500	100	50	100	750

#### TERM – II

Subject Code	Name of the subject	Th	Pr	Tut	PP	TW	OR	PR	Total marks
404207	Computer Networks	4	2		100		50		150
404208	Embedded Systems	4	2		100	25		50	175
404209	Elective (III)	4	2		100	25		50	175
404210	Elective (IV)	4			100				100
404211	Project (Part-II)		6			100	50		150
		16	12	0	400	150	100	100	750

**Prof. G S Mundada**

**Chairman**

Board of Studies (Electronics Engg.)

University of Pune

**STRUCTURE OF  
S.E. ( Printing Engineering ) (2008 Course)  
(w.e.f. June, 2009)**

**Part I**

Sr. No.	Subject Code	Subject	Teaching Scheme Hrs. / week		Examination Scheme				
			Lect.	Pr / Dwg.	Paper	T/W	Pr.	Oral	Total
1	207004	Engineering Mathematics III	4	-	100	-	-	-	100
2	202281	Strength of Machine Elements	4	-	100	-	-	-	100
3	208282	Basic Elements of Printing Technology	4	2	100	25	50	-	175
4	208283	Printing Digital Electronics	4	2	100	25	-	-	125
5	208284	Technology of Printing Materials	4	2	100	25	50	-	175
6	208285	Print Layout & Design	-	2	-	50	-	-	50
7	211286	Workshop Practice I	-	2	-	25	-	-	25
<b>Total</b>			<b>20</b>	<b>10</b>	<b>500</b>	<b>150</b>	<b>100</b>	<b>-</b>	<b>750</b>

**Part II**

Sr. No.	Subject Code	Subject	Teaching Scheme Hrs. / week		Examination Scheme				
			Lect.	Pr / Dwg.	Paper	T/W	Pr.	Oral	Total
8	203287	Electrical Machines & Utilisation	4	2	100	25	-	25	150
9	208288	Reproduction Techniques	4	2	100	-	50	-	150
10	208289	Print Finishing	4	2	100	25	-	-	125
11	208290	Microprocessor & microcontroller Techniques in printing	4	2	100	-	-	25	125
12	202291	Theory of Printing Machines	4	2	100	50	-	-	150
13	211292	Workshop Practice II	-	2	-	25	-	25	50
<b>Total</b>			<b>20</b>	<b>12</b>	<b>500</b>	<b>125</b>	<b>50</b>	<b>75</b>	<b>750</b>

**Note: Practical / Oral Examinations shall be based on the Term Work presented.**

**STRUCTURE OF  
T.E. ( Printing Engineering ) (2008 Course)  
(w.e.f. June, 2010)**

**Part I**

Sr. No.	Subject Code	Subject	Teaching Scheme		Examination Scheme				
			Hrs. / week		Paper	T/W	Pr.	Oral	Total
			Lect.	Pr / Dwg.					
1	308281	Offset Machines I	4	2	100	25	50	-	175
2	308282	Printing Network Technology & Opto- Electronics	4	2	100	25	-	25	150
3	308283	Colour Management & Standardization	4	2	100	25	50	-	175
4	308284	Management Information Systems And Cost Estimation	4	-	100	-	-	-	100
5	302285	Design of Printing Machine Components	4	2	100	50	-	-	150
<b>Total</b>			<b>20</b>	<b>08</b>	<b>500</b>	<b>125</b>	<b>100</b>	<b>25</b>	<b>750</b>

**Part II**

Sr. No.	Subject Code	Subject	Teaching Scheme		Examination Scheme				
			Hrs. / week		Paper	T/W	Pr.	Oral	Total
			Lect.	Pr / Dwg.					
6	308286	Offset Machines II	4	2	100	25	25	-	150
7	308287	Statistical Process Control	4	2	100	25	-	-	125
8	308288	Digital Workflow and Image Setting	4	2	100	-	50	-	150
9	308289	Technology of Flexography	4	2	100	25	25	-	150
10	302290	Theory of Printing Machines & Machine Design	4	2	100	25	-	-	125
11	308291	Seminar *	-	2	-	50	-	-	50
<b>Total</b>			<b>20</b>	<b>12</b>	<b>500</b>	<b>150</b>	<b>100</b>	<b>-</b>	<b>750</b>

**Note: Practical / Oral Examinations shall be based on the Term Work presented.**

\* The Term Work marks for Seminar will be based on the presentation and oral examination. The examination will be conducted by the two internal examiners (among the approved teachers only) appointed by the Principal of the concerned college.

**STRUCTURE OF  
B.E. ( Printing Engineering ) (2008 Course)  
(w.e.f. June, 2011)**

**Part I**

Sr. No.	Subject Code	Subject	Teaching Scheme		Examination Scheme				
			Hrs. / week		Paper	T/W	Pr.	Oral	Total
Lect.	Pr / Dwg.								
1	408281	Elective I	4	2	100	25	50	-	175
2	408282	Elective II	4	-	100	-	-	-	100
3	408283	Technology of Gravure	3	3	100	25	-	50	175
4	408284	Digital Imaging and Printing	4	2	100	-	50	-	150
5	408285	Advertising and Multimedia	4	2	100	-	50	-	150
6	408286	Project Work	-	2	-	-	-	-	-
<b>Total</b>			<b>19</b>	<b>11</b>	<b>500</b>	<b>50</b>	<b>150</b>	<b>50</b>	<b>750</b>

**Part II**

Sr. No.	Subject Code	Subject	Teaching Scheme		Examination Scheme				
			Hrs. / week		Paper	T/W	Pr	Oral	Total
Lect.	Pr / Dwg.								
7	408287	Elective III	4	2	100	25	50	-	175
8	408288	Elective IV	4	-	100	-	-	-	100
9	408289	Package Design and Technology	4	2	100	25	50	-	175
10	408290	Print Production Planning and Control	4	2	100	50	-	-	150
11	408286	Project Work	-	4	-	100	-	50	150
<b>Total</b>			<b>16</b>	<b>10</b>	<b>400</b>	<b>200</b>	<b>100</b>	<b>50</b>	<b>750</b>



Elective I		Elective II	
408281A	Quality Control Techniques in Printing	408282A	Security Printing
408281B	Commercial Graphic Design	408282B	Newspaper Technology
408281C	Screen Printing Techniques	408282C	Open Elective Subject (Self Study) **

Elective III		Elective IV	
408287A	Electronic Publishing	408288A	Flexible Packaging
408287B	Printing Machine Maintenance	408288B	Entrepreneurship in Printing
408287C	Image Conversion & Modification	408288C	Open Elective Subject (Self Study) **

**Note: Practical / Oral Examinations shall be based on the Term Work presented.**

\*\* **Open Elective Subject-** BOS Printing Engineering & Graphic Communications will declare the list of subjects which can be taken under open elective.

**Structure of S.E. (Information Technology) 2008 Course  
Proposed in year 2009 - 10**

**Part – I**

Subject Code No.	Subject	Teaching Scheme		Examination Scheme				Total Marks
		Hours / Week		Paper	T/W	Pract.	Oral	Total
		Lect.	Pract.					
210241	Discrete Structures	4	----	100	---	---	---	100
214442	Computer Organization	3	----	100	---	---	---	100
210243	Digital Electronics and Logic Design	4	----	100	---	---	---	100
214441	Fundamental of Data structures	4	----	100	---	---	---	100
207005	Humanities and Social Sciences	3	----	100	---	---	---	100
214443	Digital Laboratory	----	4	----	50	50	----	100
214444	Programming Laboratory	---	4	---	50	50	---	100
214445	Communication and Language Lab.	--1-	2	---	50	----	---	50
	<b>Total</b>	<b>19</b>	<b>10</b>	<b>500</b>	<b>150</b>	<b>100</b>	<b>---</b>	<b>750</b>
	<b>Total of Part I (A)</b>	<b>29 Hrs</b>		<b>750</b>				

**Part– II**

Subject Code No.	Subject	Teaching Scheme		Examination Scheme				Total Marks
		Hours / Week		Paper	T/W	Pract.	Oral	Total
		Lect.	Pract.					
207003	Engineering Mathematics – III	4	---	100	---	---	---	100
214446	Computer Graphics	3	---	100	---	---	---	100
214447	Processor Architecture & Interfacing	3	---	100	---	---	---	100
214448	Data Structures and Files	3	---	100	---	---	---	100
214449	Data Communication	3	---	100	---	---	---	100
214450	Processor Interfacing Laboratory	---	4	---	25	---	50	75
214451	Data Structures and Files Laboratory	---	4	---	25	50	---	75
214452	Object Oriented Programming and Computer Graphics Laboratory	1	4	---	50	50	---	100
	<b>Total</b>	<b>17</b>	<b>12</b>	<b>500</b>	<b>100</b>	<b>100</b>	<b>50</b>	<b>750</b>
	<b>Total of Part II (B)</b>	<b>29 Hrs</b>		<b>750</b>				
	<b>Grand Total (A) + (B)</b>	<b>1500</b>						

**UNIVERSITY OF PUNE**  
**SE (COMPUTER ENGINEERING) 2008 COURSE**

**Term – I**

Subject Code No.	Subject	Teaching Scheme Hours / Week		Examination Scheme				Total Marks
		Lect	Pract	Paper	TW	Pract	Oral	Total
210241	Discrete Structures	04	---	100	---	---	---	100
<b>210242</b>	<b>Programming &amp; problem solving</b>	<b>04</b>	<b>---</b>	<b>100</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>100</b>
210243	Digital Electronics and Logic Design	04	---	100	---	---	---	100
210244	Data Structures and Algorithms	04	---	100	---	---	---	100
<b>207005</b>	<b>Humanity and Social sciences</b>	<b>03</b>	<b>---</b>	<b>100</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>100</b>
210246	Programming Laboratory		04	---	25	50	---	075
210247	Digital Electronics Laboratory	---	04	---	25	50	---	075
210248	Soft Skills	---	02	---	50	---	---	050
	<b>Total</b>	<b>19</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>100</b>	<b>---</b>	<b>700</b>
	<b>Total of Part I (A)</b>	<b>29 Hrs</b>		<b>700</b>				

**Term – II**

Subject Code No.	Subject	Teaching Scheme Hours / Week		Examination Scheme				Total Marks
		Lect	Pract	Paper	TW	Pract	Oral	Total
207003	Eng. Maths – III	04	---	100	---	---	---	100
210249	Microprocessors and Interfacing Techniques	04	---	100				100
210250	Data Structures	04	---	100	---	---	---	100
210251	Computer Graphics	03	---	100	---	---	---	100
210252	Computer Organization	03	---	100	---	---	---	100
210253	Object Oriented Programming & Computer Graphics Laboratory	02	02	---	50	50	---	100

210254	Microprocessors and interfacing Laboratory	---	04	---	50	50	---	100
210255	Data Structures Laboratory	---	04	---	50	50	---	100
	<b>Total</b>	<b>20</b>	<b>10</b>	<b>500</b>	<b>150</b>	<b>150</b>	<b>---</b>	<b>800</b>
	<b>Total of Part II (B)</b>	<b>30 Hrs</b>		<b>800</b>				
	<b>Grand Total (A) + (B)</b>			<b>1500</b>				

**UNIVERSITY OF PUNE**  
**TE (COMPUTER ENGINEERING)-2008 COURSE**

**Term-I**

Sub Code	Subject	Teaching Scheme		Examination Scheme				Total Marks
		Lect	Pract	Th	TW	Pr	Or	
310241	Database Management Systems	03	—	100	—	—	—	100
310242	Data Communications	03	—	100	—	—	—	100
310243	Microprocessors and Micro-controllers	03	—	100	—	—	—	100
310244	Digital Signal Processing	04	—	100	—	—	—	100
310245	Theory of Computation	03	—	100	—	—	—	100
310246	RDBMS and Visual Programming Laboratory	02	04	—	50	50	—	100
310247	Signal Processing Laboratory	—	04	—	25	—	50	075
310248	Hardware Laboratory	—	04	—	25	50	—	075
<b>Total</b>		<b>18</b>	<b>12</b>	<b>500</b>	<b>100</b>	<b>100</b>	<b>50</b>	<b>750</b>

**Term-II**

Sub Code	Subject	Teaching Scheme		Examination Scheme				Total Marks
		Lect	Pract	Th	TW	Pr	Or	
310249	Principles of Programming Languages	03	—	100	—	—	—	100
310250	Computer Networks	03	—	100	—	—	—	100
<b>310251</b>	<b>Finance and Management Information Systems</b>	<b>04</b>	—	<b>100</b>	—	—	—	<b>100</b>
<b>310252</b>	<b>Systems Programming &amp; Operating Systems</b>	<b>04</b>	—	<b>100</b>	—	—	—	<b>100</b>
310253	Software Engineering	03	—	100	—	—	—	100
310254	Software Laboratory	—	04	—	25	50	—	075
310255	Computer Networks Laboratory	01	04	—	25	—	50	075
310256	Software Development Tools Laboratory	—	02	—	50	—	—	050
310257	Seminar and Technical Communication	—	02	—	50	—	—	050
<b>Total</b>		<b>20</b>	<b>12</b>	<b>500</b>	<b>150</b>	<b>50</b>	<b>50</b>	<b>750</b>

**UNIVERSITY OF PUNE**  
**B.E. (COMPUTER ENGINEERING) - 2008 COURSE**

**Term-I**

Subject Code	Subject	Teaching Scheme		Examination Scheme				Total Marks
		Lect.	Pract.	Th	TW	Pr	Or	
410442	Principles of Compiler Design	04	—	100	—	—	—	100
410443	Object Oriented Modeling & Design	03	02	100	25	—	50	175
410444	Elective-I	03	02	100	25	—	50	175
410445	Elective-II	03	---	100	---	—	---	100
410446	Computer Laboratory I	—	04	—	50	50	—	100
410447	Project Work*	---	02	---	---	---	---	---
	<b>Total</b>	<b>18</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>750</b>

**Term II**

Subject Code	Subject	Teaching Scheme		Examination Scheme				Total Marks
		Lect.	Pract	Th	TW	Pr	Or	
410448	Distributed Operating Systems	04	---	100	---	---	---	100
410449	Advanced Computer Architecture	04		100				100
410450	Elective-III	04	02	100	50	—	50	200
410451	Elective-IV (open)	04	---	100	---	—	---	100

**Elective III**

**Elective IV**

410452	Computer Laboratory II	—	04	— —	50	50	—	100
410447	Project Work	—	06	—	100	—	50	150
	<b>Total</b>	<b>16</b>	<b>12</b>	<b>400</b>	<b>200</b>	<b>50</b>	<b>100</b>	<b>750</b>

**Th: Theory**

**TW: Term Work**

**Pr : Practical**

**Or: Oral**

- 1) Image Processing
- 2) **Design & Analysis of Computer Networks**
- 3) Artificial Intelligence
- 4) Multimedia Systems

- 1) Software Architecture
- 2) **Mobile Communication**
- 3) **Embedded Systems**
- 4) **Software Testing & QA**

- 1) **Pattern Recognition**
- 2) High Performance networks
- 3) **Neural Networks**
- 4) Advanced Databases

- 1) **VLSI & Digital System Design**
- 2) **Operations Research**
- 3) **Advanced Unix Programming**
- 4) **Information Security**



**University of Pune**  
**Structure for B. Tech. Biotechnology (2008-2009)**

**S. E. TERM – I**

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total Marks
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
215461	Applied Chemistry	4	2		100			50	150
207004	Engineering Mathematics –III	4			100				100
215462	Fluid Flow & Unit Operations	4	2		100			50	150
215463	Microbiology	3	2		100		50	25	175
215464	Biochemistry I	4	2		100	50		25	175
		19	08		500	50	50	150	<b>750</b>

**TERM – II**

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total marks
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
215465	Biochemistry II	4	2		100	50		25	175
215466	Material Balances and Stoicheometry	4			100				100
215467	Cell Biology & Tissue Culture	3	4		100		50	50	200
215468	Thermodynamics	3			100				100
215469	Genetics and Molecular Biology	4	4		100		50	25	175
		18	10		500	50	100	100	<b>750</b>

## T. E. Biotechnology (2008-2009)

### TERM – I

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total marks
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
315461	Genetic Engineering	4	2		100		25	25	150
309342	Mass Transfer I	4	2		100	50		25	175
315462	Bioseparation I	3	2		100		25	25	150
309348	Heat Transfer	4	2		100			50	150
315463	Bioinformatics	3	2		100			25	125
		18	10		500	50	50	150	<b>750</b>

### TERM – II

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total marks
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
315464	Reaction Engineering	4	4		100			50	150
315465	Fermentation Technology	3	2		100		25	25	150
315466	Instrumentation and Process Control	3	2		100		25	25	150
309350	Mass Transfer II	4	2		100			50	150

315467	Computational Techniques	3			100				100
315468	Seminar		2					50	50
		17	12		500		50	200	<b>750</b>

## B. E. Biotechnology (2008-2009)

### TERM – I

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total marks
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
415461	Elective – I	4			100				100
415462	Elective – II	3			100				100
415463	Immunology & diagnostics	4	2		100		50	50	200
415464	Bio-Reaction engineering	4			100		25	50	175
415465	Bio-Process Equipment Design	4		2	100		25	50	175
415466	Project			4					
		19	2	6	500		100	150	<b>750</b>

### TERM – II

Subject Code No.	Subject	Teaching Scheme			Examination Scheme				Total marks
		Theory	Practical	TW/ Drawing	Paper	Practical	Oral	TW	
415467	Elective – III	4	2		100		25	50	175
415468	Elective – IV	4	2		100		25	50	175
415469	Plant Engineering and project costing	4		2	100			50	150
415470	Bioprocess Modeling and Simulation	3			100				100
415471	Project			6			50	100	150
		18	2	8	400		100	250	<b>750</b>

**List of elective subjects:**

**Elective – I**

1. Management and Entrepreneurship
2. Biomaterials
3. Pharma Biotechnology

**Elective – II**

4. IPR, Bioethics and Regulations
5. Bioenergy & Biofuels
6. Stem Cell Biology & Regenerative Medicine

**Elective – III**

1. Advanced Biotechnology Development
2. Advanced Bioseparation
3. Environmental Biotechnology

**Elective – IV**

4. Food Biotechnology
5. Agricultural Biotechnology
6. Chemoinformatics