



# GOVERNMENT POLYTECHNIC, PUNE

(An Autonomous Institute of Maharashtra Government)

Effective from From Academic year : 2009-10

## Programme Structure

### Diploma in METALLURGICAL ENGINEERING

#### Level I - Foundation Level Courses

COURSE CODE	COURSE TITLE	PRE-REQUISITE	COMPULSORY / OPTIONAL	TEACHING SCHEME				EXAMINATION SCHEME							
				L	P	T	C	PA	TH	TW	OR	PR	SEMI	T.M.	
HU161	English	-	COMPULSORY	2	2	0	4	20	80	25	-	-	-	-	125
HU162	Communication Skills	-	COMPULSORY	2	2	0	4	20	80	25	-	-	-	-	125
SC161	Applied Mathematics - I	-	COMPULSORY	3	0	1	4	20	80	-	-	-	-	-	100
SC162	Applied Mathematics - II	-	COMPULSORY	3	0	1	4	20	80	-	-	-	-	-	100
SC164	Engineering Physics	-	COMPULSORY	4	2	0	6	20	80	-	-	50	#	-	150
SC166	Engineering Chemistry	-	COMPULSORY	3	2	0	5	20	80	-	-	50	#	-	150
6	TOTAL			17	8	2	27	120	480	50	0	100			750

#### Level II - Core Technology Courses

COURSE CODE	COURSE TITLE	PRE-REQUISITE	COMPULSORY / OPTIONAL	TEACHING SCHEME				EXAMINATION SCHEME							
				L	P	T	C	PA	TH	TW	OR	PR	SEMI	T.M.	
ME262	Engineering Graphics	-	COMPULSORY	2	4	0	6	20	80	25	-	-	-	-	125
CM261	Basics of Computer Systems	-	COMPULSORY	3	2	0	5	-	-	25	-	50	#	-	75
CM262	Programming in C	-	COMPULSORY	3	2	0	5	20	80	-	-	50	-	-	150
AM261	Engineering Mechanics	-	COMPULSORY	4	2	0	6	20	80	25	25	-	-	-	150
WS261	Workshop Practice	-	COMPULSORY	0	4	0	4	-	-	50	-	-	-	-	50
ET262	Elements of Electronics Engineering	-	COMPULSORY	3	2	0	5	20	80	25	-	-	-	-	125
EE263	Elements of Electrical Engineering	-	COMPULSORY	3	2	0	5	20	80	25	-	-	-	-	125
7	TOTAL			18	18	0	36	100	400	175	25	100			800



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**Level III - Auxiliary Courses**

COURSE CODE	COURSE TITLE	PRE-REQUISITE	COMPULSORY / OPTIONAL	TEACHING SCHEME				EXAMINATION SCHEME					
				L	P	T	C	PA	TH	TW	OR	PR	SEMI
<b>GROUP A (ANY TWO)</b>													
AU361	Environmental Science	-	OPTIONAL	2	1	0	3	20	80	--	--	--	100
AU362	Community Development	-	OPTIONAL	2	1	0	3	20	80	--	--	100	
AU363	Renewable & Sustainable Energy Mgmt.	-	OPTIONAL	2	1	0	3	20	80	--	--	100	
AU364	Engineering Economics	-	OPTIONAL	2	1	0	3	20	80	--	--	100	
AU365	Industrial Psychology	-	OPTIONAL	2	1	0	3	20	80	--	--	100	
SC361	Applied Mathematics - III	SC161, SC162	OPTIONAL	2	0	1	3	20	80	--	--	100	
<b>2</b>	<b>TOTAL</b>			<b>14</b>			<b>6</b>	<b>40</b>	<b>160</b>			<b>200</b>	

**GROUP B (NON-EXAM)**

NE376	Development of Soft Skills-I	-	COMPULSORY	1	2	0	3	--	--	25	--	25
NE377	Development of Soft Skills-II	-	COMPULSORY	1	2	0	3	--	--	25	--	25
<b>2</b>	<b>TOTAL</b>			<b>4</b>			<b>6</b>	<b>40</b>	<b>160</b>			<b>200</b>

**Level IV - Basic Technology Courses**

COURSE CODE	COURSE TITLE	PRE-REQUISITE	COMPULSORY / OPTIONAL	TEACHING SCHEME				EXAMINATION SCHEME					
				L	P	T	C	PA	TH	TW	OR	PR	SEMI
MS461	Elements of Electrical & Mechanical Engg.	-	COMPULSORY	4	2	0	6	20	80	50	50	--	200
MT461	Basic Metallurgy	-	COMPULSORY	3	3	0	6	20	80	25	50	--	175
MT462	Material Testing & Quality Assurance	-	COMPULSORY	3	3	0	6	20	80	25	--	50	175
MT463	Metallurgical Analysis	-	COMPULSORY	3	4	0	7	20	80	25	--	50	175
MT464	Extraction of Ferrous Metals	-	COMPULSORY	3	0	0	3	20	80	--	50	--	150
MT465	Extraction of Non-Ferrous Metals	-	COMPULSORY	3	0	0	3	20	80	--	50	--	150
MT466	Non Conventional Machining Processes	-	COMPULSORY	2	1	0	3	20	80	--	50	--	150
MT467	Elements of Physical Metallurgy	-	COMPULSORY	3	3	0	6	20	80	25	--	50	175
SC463	Advanced Physics	-	COMPULSORY	3	2	0	5	20	80	25	--	--	125
<b>9</b>	<b>TOTAL</b>			<b>27</b>	<b>18</b>	<b>0</b>	<b>45</b>	<b>180</b>	<b>720</b>	<b>175</b>	<b>250</b>	<b>150</b>	<b>1475</b>



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**Level V – Applied Technology Courses**

COURSE CODE	COURSE TITLE	PRE-REQUISITE	COMPULSORY / OPTIONAL	TEACHING SCHEME				EXAMINATION SCHEME						
				L	P	T	C	PA	TH	TW	OR	PR	SEMI	T.M.
MT561	Project and Seminar (In-house/Industry)	90 Credits	COMPULSORY	0	8	0	8	--	--	50	100	--	--	150
MT562	Foundry Engineering	--	COMPULSORY	4	3	0	7	20	80	25	50	--	--	175
MT563	Powder Metallurgy	--	COMPULSORY	4	2	0	6	20	80	25	50	--	--	175
MT564	Metal Working Processes	--	COMPULSORY	4	3	0	7	20	80	--	50	--	--	150
MT565	Heat Treatment of Metals & Alloys	--	COMPULSORY	4	4	0	8	20	80	25	--	50	--	175
MT566	Furnace Technology	--	COMPULSORY	3	1	0	4	20	80	--	50	--	--	150
6	<b>TOTAL</b>			19	21	0	40	100	400	125	300	50	--	975

**Level VI – Allied (Humanity Science) Courses**

COURSE CODE	COURSE TITLE	PRE-REQUISITE	COMPULSORY / OPTIONAL	TEACHING SCHEME				EXAMINATION SCHEME							
				L	P	T	C	PA	TH	TW	OR	PR	SEMI	T.M.	
(ANY TWO)															
MA661	Principles of Management	--	COMPULSORY	3	0	0	3	20	80	--	--	--	--	100	
MA662	Entrepreneurship Development	--	Any ONE	3	0	0	3	20	80	--	--	--	--	100	
MA663	Project Management	--		3	0	0	3	20	80	--	--	--	--	100	
MA664	Material Management	--		3	0	0	3	20	80	--	--	--	--	100	
MA665	Supervisory Management	--		3	0	0	3	20	80	--	--	--	--	100	
MA666	Total Quality Management	--		3	0	0	3	20	80	--	--	--	--	100	
MA667	Software Project Management	--		3	0	0	3	20	80	--	--	--	--	100	
MA668	Management Information System	--		3	0	0	3	20	80	--	--	--	--	100	
2	<b>TOTAL</b>				6	0	0	6	40	160	--	--	--	--	200



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 Level VII - Diversified Courses

COURSE CODE	COURSE TITLE	PRE-REQUISITE	COMPULSORY / OPTIONAL	TEACHING SCHEME					EXAMINATION SCHEME					T.M.
				L	P	T	C	PA	TH	TW	OR	PR	SEMI	
<b>PART A: (ANY TWO)</b>														
MT761	Metallurgical Drawing and Design		OPTIONAL	2	3	0	5	20	80	--	50	--	--	150
MT762	Selection of Materials & Failure analysis		OPTIONAL	3	2	0	5	20	80	--	50	--	--	150
MT763	Welding and Modern Forming Processes		OPTIONAL	3	2	0	5	20	80	--	50	--	--	150
MT764	Computer Applications in Metallurgy		OPTIONAL	2	3	0	5	20	80	--	50	--	--	150
<b>PART B: (ANY TWO)</b>														
MT765	Advanced Physical Metallurgy	MT767	OPTIONAL	3	2	0	5	20	80	--	50	--	--	150
MT766	Modern Foundry Engineering	MT762	OPTIONAL	2	3	0	5	20	80	--	50	--	--	150
MT767	Surface Protection Methods		OPTIONAL	3	2	0	5	20	80	--	50	--	--	150
MT768	Non-metallic Materials		OPTIONAL	3	2	0	5	20	80	--	50	--	--	150
<b>TOTAL</b>				<b>10</b>	<b>10</b>	<b>0</b>	<b>20</b>	<b>80</b>	<b>320</b>		<b>200</b>			<b>600</b>

Total Credits: **180**

Total Marks: **5000**

Theory to Practical ratio

**56.1** **43.9**

**65.4** **34.7**

L- Lecture, P- Practical, T- Tutorial, C- Credits, PA- Progressive Assessment, TH- Theory, TW- Term Work, OR- Oral, PR- Practical, SEMI- Seminar Presentation  
 T.M.- Total Marks. Each Lecture/Practical period is of one clock hour

*(Prof. S.B. Kulkarni)*  
 ODC In-charge

*P. Kamble*  
 (Prof. P.B. Kamble)  
 Chairman, PBOS