

**CURRICULAR STRUCTURE
AND
SYLLABUS OF
FULL-TIME DIPLOMA COURSE IN
MINE SURVEYING
EFFECTIVE FROM THE SESSION 2013-14**

PREAMBLE

DIPLOMA IN MINE SURVEYING

Surveying, which has been an essential element in the development of the human civilization since the beginning of the recorded history (about 5000 years ago), is the technique and science of accurately determining the terrestrial or three-dimensional relative position of points and/or physical and cultural details above, on, or beneath the surface of the earth and to depict them in a usable form.

Depending upon the instruments available, survey engineering has undergone slow but steady changes, ultimately reached at the state as we are studying today and the gradual changing technology in this field has been suitably and chronologically placed in the curriculum so that students can get a clear concept of the idea about what Mine surveying was and what it is now.

Since time immemorial, Mine Surveying has played a significant role in the growth and development of Indian Mineral Industry. In fact, a mine starts with surveying and ends with surveying. Surveying in mine is an integral part of the mine planning, production and safety. To sustain India's position in world mineral market large capacity open cast mines were opened, advanced mining technology was imported and at the same time advance survey instruments were also acquired. These survey instruments greatly reduced the actual handling time of the instrument at the field and improved the quality of raw data and the power of microprocessors and software remarkably reduced the time of processing of the raw data collected through these instruments as well as generating maps, being the ultimate output of any survey work. Keeping in view the above mentioned advancement in the field of survey engineering, the committee members have incorporated suitable up-gradation in the existing syllabus to impart fair level of theoretical knowledge to the students in the classroom, to give the scope of handling of advance survey instruments like Microptic theodolite, Total Station, EDM, Auto Level in the related practical classes and hands on practice with CIVILCAD, AUTOCAD software in the lab classes.

Mine Surveyors must have thorough knowledge of algebra, basic calculus, trigonometry, physics and engineering drawing which are properly and extensively covered in the first and second semester, whereas the laws and regulations that deal with surveys, land and mine properties are rationally included in the final semester.

After successful completion of this course students achieve competency in both Land survey and Mine survey. They get employment in both government and private sectors like mining, building constructions, highways, railways, metros, hydro power plants etc. They do have the opportunity to pursue higher education for their vertical mobility.

The process of technological changes which are sweeping the whole country put forward a demand to have a new generation of mine surveyors versed in skills and professional background in state-of-the-art surveying equipment and computers. Being an inseparable and integral component of mining

methodology, mine surveying had also been subjected to conceptual changes to attain its present form. Considering all the above mentioned facts together with the infrastructure available and likely to be available in near future, the members of the syllabus modification committee have tried their best to incorporate the components of changing technologies in the field of mine surveying in the curriculum so that highly skilled as well as knowledgeable Diploma Engineers can be made available before the Mining industry for their service.

Marks distribution for the theoretical and practical papers

Semester	Theoretical	Practical	Total
1.	550	250	800
2.	450	350	800
3.	400	400	800
4.	400	500	900
5.	400	400	800
6.	400	500	900
Total	2600	2400	5000

Curricular Structure of Semester III,IV ,V and VI

Curricular Structure of Semester III, IV ,V and VI

WEST BENGAL STATE COUNCIL OF TECHNICAL EDUCATION											
TEACHING AND EXAMINATION SCHEME FOR DIPLOMA IN ENGINEERING COURSES											
COURSE NAME-MINE SURVEYING											
DURATION OF COURSE- 6 SEMESTERS											
SEMESTER- THIRD				SEMESTER DURATION-9 WEEKS							
SR. No.	SUBJECT	CREDITS	PERIODS			EVALUATION SCHEME					
			L	TU	PR	Internal Scheme			ESE	PR	Total Marks
						TA	CT	Total			
1	Environmental Engineering	4	4			10	20	30	70		100
2	Basic Surveying-I	4+2=6	4		4	10	20	30	70	100	200
3	Basic Surveying-II	4+2=6	4		4	10	20	30	70	100	200
4	Methods of Mining	4	4			10	20	30	70		100
5.	Computer Aided Design and Drafting	3			6					100	100
6	Professional Practice-I	2			3					100	100
	Grand Total	25	16		17	40	80	120	280	400	800
STUDENT CONTACT HOURS PER WEEK:33 HOURS											
Theory and Practical period of 60 minutes each.											
L-Lecture, TU-Tutorials, PR- Practical, TA-Teacher's Assessment, CT-Class Test ,ESE-End Semester Exam											

Note:

1. As per statutory provision of Director General of Mines Safety (DGMS) students have to undergo two months of Industrial Training after the completion of Part-I (Sem-II) examination. Therefore, Industrial Training has been kept under the subject- **Professional Practice-I** and its syllabus has been framed accordingly.
- 2 Due to the two months of continuous Industrial Training, length of the session of Part-II (Semester-3rd) is reduced to eight to nine weeks. Therefore, weekly no. of periods for some important subjects has been increased to cover the syllabus properly.
- 3 **Total Marks-100** has been allotted to **Professional Practice-I** keeping in view the DGMS approval and importance of the Industrial Training for students of Mining Survey Dept.

WEST BENGAL STATE COUNCIL OF TECHNICAL EDUCATION											
TEACHING AND EXAMINATION SCHEME FOR DIPLOMA IN ENGINEERING COURSES											
COURSE NAME-MINE SURVEYING											
DURATION OF COURSE- 6 SEMESTERS											
SEMESTER-FORTH, SEMESTER DURATION- SIXTEEN WEEKS											
Sl. No.	SUBJECT	CREDITS	PERIODS			EVALUATION SCHEME					
			L	TU	PR	Internal Scheme			ESE	PR	Total Marks
						TA	CT	Total			
1	MINING TECHNOLOGY	3+2=5	4		3	10	20	30	70	100	200
2.	BASIC SURVEYING-III	4+2=6	4		3	10	20	30	70	100	200
3.	ADVANCE SURVEYING-I	3+2=5	3		3	10	20	30	70	100	200
4	MINING GEOLOGY	3+2=5	4		3	10	20	30	70	100	200
5.	DEVELOPMENT OF LIFE SKILL-II	2	1		2					50	50
5	PROFESSIONAL PRACTICE-II	2			3					50	50
	Grand Total	25	16		17	40	80	120	280	500	900
STUDENT CONTACT HOURS PER WEEK:33 HOURS											
Theory and Practical period of 60 minutes each.											
L-Lecture, TU-Tutorials, PR-Practical, TA-Teacher's Assessment, CT-Class Test ,ESE-End Semester Exam											

WEST BENGAL STATE COUNCIL OF TECHNICAL EDUCATION											
TEACHING AND EXAMINATION SCHEME FOR DIPLOMA IN ENGINEERING COURSES											
COURSE NAME-MINE SURVEYING											
DURATION OF COURSE- 6 SEMESTERS											
SEMESTER- FIFTH,						SEMESTER DURATION-NINE WEEKS					
SR. No.	SUBJECT	CREDITS	PERIODS			EVALUATION SCHEME					
			L	TU	PR	Internal Scheme			ESE	PR	Total Marks
						TA	CT	Total			
1	Advance Surveying-II	4+2=6	4	1	4	10	20	30	70	100	200
2	Modern Surveying	5+2=7	4	1	4	10	20	30	70	100	200
3	Mine Surveying-I	4+2=6	4		4	10	20	30	70	100	200
4	Land Laws and Mine Legislation	4	4			10	20	30	70		100
5	Professional Practice-III	2			3					100	100
	Grand Total	25	16	02	15	40	80	120	280	400	800
STUDENT CONTACT HOURS PER WEEK:33 HOURS Theory and Practical period of 60 minutes each. L-Lecture,TU-Tutorials,PR-Practical, TA-Teacher's Assessment, CT-Class Test ,ESE-End Semester Exam											

Note:

1. As per statutory provision of Directorate General of Mines Safety (DGMS) students have to undergo two months of Industrial Training after the completion of Part-II (Sem-IV) examination. Therefore, Industrial Training has been kept under the subject- **Professional Practice-III** and its syllabus has been framed accordingly.
2. Due to the two months of continuous Industrial Training, length of the session of Part-III (Semester-v) is reduced to **eight to nine weeks**. Therefore, weekly no. of periods for some important subjects has been increased to cover the syllabus properly.
3. **Total Marks-100** has been allotted to **Professional Practice-III** keeping in view the DGMS approval and importance of the Industrial Training for students of Mining Survey Dept.

WEST BENGAL STATE COUNCIL OF TECHNICAL EDUCATION											
TEACHING AND EXAMINATION SCHEME FOR DIPLOMA IN ENGINEERING COURSES											
COURSE NAME-MINE SURVEYING											
DURATION OF COURSE- 6 SEMESTERS											
SEMESTER- SIXTH						SEMESTER DURATION- 16 WEEKS					
SR. No.	SUBJECT	CREDITS	PERIODS			EVALUATION SCHEME					
			L	TU	PR	Internal Scheme			ESE	PR	Total Marks
						TA	CT	Total			
1	Advance Surveying-III	3	4			10	20	30	70		100
2	Mine Surveying-II	4	4	1		10	20	30	70		100
3	Mine Surveying-III	4+2=6	4		3	10	20	30	70	50	150
4	Estimation and Contract	3	4			10	20	30	70		100
5	Computer Application in Surveying	2			4					100	100
6	Professional Practice-IV	2			3					50	50
7	Project	3			6					200	200
8	Viva Voce	2								100	100
	Grand Total	25	16	1	16	40	80	120	280	500	900
STUDENT CONTACT HOURS PER WEEK:33 HOURS Theory and Practical period of 60 minutes each. L-Lecture, TU-Tutorials, PR-Practical, TA-Teacher's Assessment, CT-Class Test ,ESE-End Semester Exam											