

## UMaT MINING ENGINEERING COURSE STRUCTURE

### Undergraduate Courses and Course Schedules

- T - Teaching Hours
- P - Hours for Practicals, Tutorial, Laboratory Work, Fieldwork, etc.
- C - Credit Hours

#### Year One Semester One

Course No.	Course Name	T	P	C
MN 141	Basic French I	1	1	
MN 151	Applied Electricity	2	2	1
MN 153	Linear Algebra and Trigonometry	2	2	3
MN 155	Technical Drawing	1	3	3
MN 157	Communication Skills I	2	1	2
MN 159	Introduction to Computing	1	2	2
MN 161	Physical and Structural Geology	2	1	2
MN 167	Basic Mechanics	2	2	2
MN 171	Elements of Mining	2	0	3
				2
<b>Totals</b>		<b>15</b>	<b>14</b>	<b>20</b>
<b>Credit Hours</b>		<b>20</b>		

#### Year One Semester Two

Course No.	Course Name	T	P	C
MN 142	Basic French II	1	1	1
MN 150	Calculus	2	1	2
MN 152	Strength of Materials	2	2	3
MN 154	Physical and Analytical Chemistry	2	1	2
MN 156	Engineering Drawing	2	2	3
MN 158	Communication Skills II	2	1	2
MN 160	Mineralogy and Petrology	2	2	3
MN 162	Applied Electronics	2	1	2
MN 178	Rock Physics	2	2	3
<b>Totals</b>		<b>17</b>	<b>13</b>	<b>21</b>
<b>Cumulative Credit Hours</b>		<b>41</b>		

**Year Two Semester One**

<b>Course No.</b>	<b>Course Name</b>	<b>T</b>	<b>P</b>	<b>C</b>
MN 251	Literature in English	1	1	1
MN 255	Mathematical Methods	2	1	2
MN 259	Geology of Ghana	2	1	2
MN 267	Thermodynamics	2	2	3
MN 271	Machine Elements	2	1	2
MN 273	Construction Materials	2	2	3
MN 275	Drilling and Explosives Engineering	2	1	2
MN 277	Economic and Exploration Geology	2	1	2
MN 279	Mineral Processing and Analysis	2	1	2
<b>Totals</b>		<b>17</b>	<b>11</b>	<b>19</b>
<b>Cumulative Credit Hours</b>		<b>60</b>		

**Year Two Semester Two**

<b>Course No</b>	<b>Course Name</b>	<b>T</b>	<b>P</b>	<b>C</b>
MN 250	Mathematical Analysis	2	1	2
MN 252	Engineering Practice	0	4	1
MN 254	Soil Mechanics	2	2	3
MN 256	Critical Thinking and Integrated Thought	2	0	2
MN 262	Land Surveying	2	4	3
MN 264	Fluid Mechanics	2	2	3
MN 270	Extractive Metallurgy	2	1	2
MN 272	Surface and Underground Blast Designs	2	1	2
MN 274	Alluvial and Ocean Mining	2	1	2
<b>Totals</b>		<b>16</b>	<b>16</b>	<b>20</b>
<b>Cumulative Credit Hours</b>		<b>80</b>		

**Year Three Semester One**

<b>Course No</b>	<b>Course Name</b>	<b>T</b>	<b>P</b>	<b>C</b>
MN 351	Artificial Intelligence and Robotics	1	2	2
MN 353	Mine Surveying	1	2	2
MN 357	Rock Mechanics	2	2	3
MN 359	Materials Handling	2	2	3
MN 361	Probability and Statistics	2	1	2
MN 363	Numerical Analysis	2	1	2
MN 365	Environmental Management	2	2	3
MN 377	Underground Mine Development	2	1	2
MN 379	Mine Safety and Emergency Management	1	2	2
<b>Totals</b>		<b>15</b>	<b>15</b>	<b>21</b>
<b>Cumulative Credit Hours</b>		<b>101</b>		

**Year Three Semester Two**

<b>Course No</b>	<b>Course Name</b>	<b>T</b>	<b>P</b>	<b>C</b>
MN 350	Mineral Resource Estimation	2	1	2
MN 354	Business Entrepreneurship	2	0	2
MN 356*	Fieldtrip and Technical Report Writing	1	4	1
MN 370	Computer Applications in Mining I	1	4	2
MN 372	Underground Mining Systems	2	2	3
MN 374	Surface Mining Systems	2	2	3
MN 376	Surface Mine Planning and Design	2	1	2
MN 378	Mine Ventilation	2	1	2
MN 380	Mine Drainage	2	1	2
MN 382	Mine Machinery	2	1	2
<b>Totals</b>		<b>18</b>	<b>17</b>	<b>21</b>
<b>Cumulative Credit Hours</b>		<b>122</b>		

**Year Four Semester One**

<b>Course No.</b>	<b>Course Name</b>	<b>T</b>	<b>P</b>	<b>C</b>
MN 451	Research Methods and Ethics in Science	2	0	2
MN 453	Mineral Project Evaluation	2	2	3
MN 455	Geographical Information Systems	1	3	2
MN 459	Operations Research	2	2	3
MN 461	Principles of Economics	2	0	2
MN 467	Instrumentation and Control	2	2	3
MN 471	Underground Mine Planning and Design	2	1	2
MN 473	Computer Applications in Mining II	1	4	2
<b>Totals</b>		<b>14</b>	<b>14</b>	<b>19</b>
<b>Cumulative Credit Hours</b>		<b>141</b>		

**Year Four Semester Two**

<b>Course No</b>	<b>Course Title</b>	<b>T</b>	<b>P</b>	<b>C</b>
MN 450	Project Work	0	12	4
MN 452	Colloquium/Seminar	1	1	1
MN 456	Mining Laws and Regulations	2	1	2
MN 458	Organisational Leadership and Management	2	0	2
MN 460	Corporate Social Responsibility	2	0	2
MN 466	Law of Contract and Tort	2	0	2
MN 470	Underground Construction	2	2	3
MN 472	Small Scale Mining Technology	2	1	2
MN 476	Underground Support Design	2	2	3
<b>Totals</b>		<b>15</b>	<b>17</b>	<b>21</b>
<b>Cumulative Credit Hours</b>		<b>162</b>		