General Information

Mumford Institute of Technology offers Engineering Science Diploma.

Engineering Science Diploma a two-year University Curriculum designed to prepare the students with keen interest in Engineering and provides them thorough preparation in mathematics, physical sciences and the arts. This curriculum will equip the graduate with the confidence to pursue any of the Engineering specialization of his or her choice.

Engineering Science Diploma

The Engineering Science program is a general science curriculum that assures that graduates have the requisite skills and knowledge in reading, writing, and communication that are necessary to function effectively in work and Engineering environment. Graduates in this program may continue to earn University baccalaureate degree in any of the engineering fields in another two or more years. 73 credits are required to earn the Engineering Science Diploma.

Program Objectives:

Within two or more years after graduation:

- Students in Engineering Science program are expected to be graduates of a four-year baccalaureate University program in Engineering or pursuing additional formal education
- Gainfully employed in Engineering and attaining increasing levels of responsibility in their chosen career
- Must be respectful of cultural diversity and must be practicing professional and ethical responsible manner

Required Core courses

A. Mathematical and Quantitative Reasoning
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 101-01</td>
<td>Analytic Geometry and Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>Math 101-01</td>
<td>Analytic Geometry and Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>Math 203-02</td>
<td>Analytic Geometry and Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>Math 203-03</td>
<td>Differential Equations and selected topics in advanced calculus</td>
<td>3</td>
</tr>
<tr>
<td>Math 203-36</td>
<td>Probability and Statistics</td>
<td>3</td>
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</table>

### B. Chemistry

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 103-01</td>
<td>General Chemistry for Engineers I</td>
<td>3</td>
</tr>
<tr>
<td>Chem 104-01</td>
<td>General chemistry for Engineers II</td>
<td>3</td>
</tr>
<tr>
<td>Organic</td>
<td>Chemistry I</td>
<td>3</td>
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</tbody>
</table>

### C. Physics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phys 107-01</td>
<td>General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>Phys 108-01</td>
<td>General Physics II</td>
<td>3</td>
</tr>
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### D. English

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Engl 101-01</td>
<td>Freshman Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Engl 101-01</td>
<td>Freshman Composition II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Scientific and technical Writing</td>
<td>3</td>
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</tbody>
</table>

### E. Engineering

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Engr 204-02</td>
<td>Engineering Circuit Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>EE 205-02</td>
<td>Circuit analysis Lab.</td>
<td>1</td>
</tr>
<tr>
<td>EE241-02</td>
<td>Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>EE 206-02</td>
<td>Digital Logic Design</td>
<td>1</td>
</tr>
<tr>
<td>EE 206-02-1</td>
<td>Digital Logic Design Lab</td>
<td>3</td>
</tr>
<tr>
<td>Engr 101-01</td>
<td>Engineering Graphics (Design)</td>
<td>1</td>
</tr>
<tr>
<td>Engr 102-01</td>
<td>Engineering Orientation</td>
<td>3</td>
</tr>
<tr>
<td>Engr 103-01</td>
<td>Introduction to Computers for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>Engr 210-02</td>
<td>Thermodynamics</td>
<td>3</td>
</tr>
</tbody>
</table>
• Econ 101-10      Engineering Economics         (3 Credits)

F. History

• African History (African perspective)         (3 Credits)
• World History                                (3 Credits)

G. Arts

• Philosophy                                    (3 Credits)
• Psychology                                    (3 Credits)

Two–Year Engineering

Curricula

First – Year Program

Pre-Engineering Courses

Biology 90      Introduction to Biology         ( 0 cr.)

The strategy of life: The basic properties of living systems with emphasis on human beings as functioning biological entities. Prereq. Math 80

English       University Skills 1               ( 0 cr.)

This course is designed to prepare the students for successful performance in university courses. Assignment to this course is based on the level of competence indicated by the student’s high school English record.

English       University Skills 2               ( 0 cr.)

Evaluation of individual reading and study skills in English. Instruction and practice is based on individual basic reading comprehension, vocabulary, and study skills to university content areas.
Chemistry 90  Introduction to Chemistry  (0 cr.)
The fundamental principles of chemistry and their applications to social issues.
Problem solving in chemistry.  Prereq. Math 80, Coreq. Math 90

Math 80  Fundamentals of Algebra and Geometry  (0 cr.)
Linear equations and graphs, functions, the point-slope equation, linear in qualities,
polynomial functions, rational expressions, radicals, quadratic equations,
sequences, series, and the binomial theorem. Prereq. Math 70

Math 90  Intermediate Algebra and Trigonometry  (0 cr.)
Rational expressions, rational exponents and radicals, conic sections and systems

Math 100  Pre-calculus  (3 cr.)
Intervals, inequalities, introduction to functions, polynomial and rational functions,
exponential and logarithmic functions, trigonometric functions and formulas.
Prereq. Math 90

Physics 100  Introductory Physics  (0 cr.)
This course is with two themes:

- How nature works the interplay of space, time, matter, and energy;
- Structures are born, live out their life cycles, and die. These include us, the
  stars, and perhaps the universe. This theme may be called scientific story of
  genesis. Prereq. Math 80, Coreq. Math 90

First-Year (Freshman year)

First-Term

Math 101-01  Analytic Geometry and Calculus I  (3 cr.)
Chem 103-01  General Chemistry for Engineers  (3 cr.)
Engl 101-01  Freshman Composition I  (3 cr.)
Phys 107-01  General Physics 1  (4 cr.)
Engr 101-01  Engineering Graphics (Design)  (1 cr.)
Engr 102-01  Engineering Orientation  (3 cr.)

17 cr.

Second –Term
Math 102-01  Analytic Geometry and Calculus II  (3 cr.)
Chem 104-01  General chemistry for Engineers II  (3 cr.)
Engl 101-01  Freshman Composition II  (3 cr.)
Engr 101-01  Introduction to Computers for Engineers  (3 cr.)
Econ 101-10  Engineering Economics  (3 cr.)
Engl 102-01  Freshman Composition II  (3 cr.)
His 101-01  African History  (3 cr.)

21 cr.

Second-Year Program (Sophomore Year)
First-Term
Math 203-02  Analytic Geometry and Calculus III  (3 cr.)
Engr 204-02 Engineering Circuit Analysis 1  (3 cr.)
EE 205-02  Circuit analysis Lab. 1  
EE 206-02  Digital Logic Design  
EE 207-02  Digital Logic Design Lab  
Engr 210-02 Thermodynamics  
Csc 102-02  Introduction to Computing - C++  

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Second-Term

Math 291-02 Methods in Differential Equations  
Math 292-02 linear Algebra  
Phys 108-02 general Physics II  
EE241-02  Electronics I  
EE241-02-1 Electronics Lab  
EE 210-02  Engineering Circuit analysis II  
EE 211-02  Circuit analysis Lab. 2  

18 cr.