Department of Mathematics and Science

Mission

The mission of the Mathematics and Science Department is to provide a broad technical education that will prepare students for further study and careers involving mathematics, science and engineering.

Vision

The vision of the Mathematics and Science Department is to offer a group of rigorous courses that will provide students with a solid foundation in calculus, chemistry, engineering and physics, including both theory and practical applications. The department aims to prepare students for (1) a seamless transition to another four-year university with junior standing in mathematics, engineering or a science-related major, or (2) entry into the technical work force.

Goals

The goals of the Mathematics and Science curricula are to

- Develop the student’s ability to apply knowledge of calculus, chemistry, engineering and physics;

- Advance the student’s analytical thinking and problem solving skills;

- Instill in students the ability to use the techniques, skills, materials, modern equipment and tools necessary for technical practice; and

- Enhance the student’s teamwork and communication skills essential to success in a technical career.

Associate of Science Degree in Mathematics and Science

The curriculum in the Associate of Science Degree in Mathematics and Science is designed with a two-fold purpose:

- To prepare the student to enter a four-year University to obtain a Bachelor’s degree for professional careers in related fields; and

- To provide the student with the knowledge and skills to enter the workforce.

Requirements

In order to meet the academic requirements for graduation with an Associate of Science Degree in Mathematics and Science from the National Hispanic University, the student must complete a minimum of 69 units of college credit, including:

- A minimum of 32 units of General Education to satisfy the GE Breadth requirement

- 4 units of NHU Core Courses

- All required Mathematics and Science Courses (or their equivalent), 33 units

- Attain an overall grade point average of “C” (2.0) or higher.

General Plan

NHU Core Courses 4 units
General Education Courses 32 units
Mathematics and Science Courses 33 units
Total 69 units

NHU Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCI 100</td>
<td>3 units</td>
</tr>
<tr>
<td>Computer Applications for Scientists &amp; Engineers</td>
<td></td>
</tr>
<tr>
<td>INF 100</td>
<td>1 unit</td>
</tr>
<tr>
<td>Information Literacy</td>
<td></td>
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</tbody>
</table>

General Education Courses

Area A: Communication In The English Language and Critical Thinking (9 units)

Oral Communication

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPC 100</td>
<td>3 units</td>
</tr>
<tr>
<td>Public Speaking</td>
<td></td>
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</tbody>
</table>

Written Communication

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 100</td>
<td>3 units</td>
</tr>
<tr>
<td>English Composition and Reading</td>
<td></td>
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</tbody>
</table>

Critical Thinking

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 201</td>
<td>3 units</td>
</tr>
<tr>
<td>Critical Thinking, Reading, and Writing Across the Curriculum</td>
<td></td>
</tr>
</tbody>
</table>

OR

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHL 200</td>
<td>3 units</td>
</tr>
</tbody>
</table>
Introduction to Logic

Area B: Physical Universe and Its Life
Forms: (8 units)

Life Science
  BIO 100  4 units
  General Biology

Mathematics
  MAT 120  4 units
  Calculus and Analytic Geometry I

Area C: Arts, Literature, Philosophy, and Foreign Languages: (6 units)

Arts
  ART 100  3 units
  Art Appreciation

Letters & Humanities
  PHL 100  3 units
  Introduction to Philosophy

  OR
  ENG 250  3 units
  Contemporary Multicultural Literature

Area D: Social, Political and Economic Institutions and Behavior
(6 units)

Comparative Systems
  HIS 100  3 units
  U.S. History I

Social Issues
  HIS 201  3 units
  U.S. History II

Area E: Life-Long Understanding and Self Development (3 units)

UNI 100  3 Units
  First Year Seminar

  OR
  ANT 125  3 units
  Human Understanding and Development

Mathematics and Science Courses

  CHE 150A  5 Units
  General Chemistry for Scientists and Engineers I

  CHE 150B  4 units
  General Chemistry for Scientists and Engineers II

  PHY 150A  4 units
  General Physics I (Mechanics)

  PHY 150B  4 units
  General Physics II (Electricity & Magnetism)

  PHY 150C  4 units
  General Physics III (Heat & Light)

  PHY 150D  4 units
  General Physics IV (Atomic Physics)

  MAT 121  4 units
  Calculus and Analytic Geometry II

  MAT 122  4 units
  Calculus and Analytic Geometry III

Associate of Science Degree in Mathematics and Science with Engineering Emphasis

The curriculum in the Associate of Science Degree in Mathematics and Science with Engineering Emphasis is designed with a two-fold purpose:

- To prepare the student to enter a four-year University to obtain a Bachelor’s degree for professional careers in related fields, and
- To provide the student with the knowledge and skills to enter the workforce.

Requirements

In order to meet the academic requirements for graduation with an Associate of Science Degree in Mathematics and Science with Engineering Emphasis from the National Hispanic University, the student must complete a minimum of 73 units of college credit, including:

- A minimum of 33 units of General Education to satisfy the GE Breadth requirement
- 4 units of NHU Core Courses
- All required Mathematics, Science and Engineering Courses (or their equivalent), 36 units
- Attain an overall grade point average of “C” (2.0) or higher.

General Plan
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHU Core Courses</td>
<td></td>
</tr>
<tr>
<td>General Education Courses</td>
<td>33</td>
</tr>
<tr>
<td>Mathematics, Science and Engineering Courses</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
</tr>
</tbody>
</table>

### NHU Core Courses

- **Computer Applications for Scientists & Engineers**
  - INF 100
  - Information Literacy
  - 3 units

### General Education Courses

#### Area A: Communication In The English Language and Critical Thinking (9 units)

- **Oral Communication**
  - SPC 100
  - 3 units
  - Public Speaking

- **Written Communication**
  - ENG 100
  - 3 units
  - English Composition and Reading

- **Critical Thinking**
  - ENG 201
  - 3 units
  - Critical Thinking, Reading, and Writing Across the Curriculum

- **OR**
  - PHL 200
  - 3 units
  - Introduction to Logic

#### Area B: Physical Universe and Its Life Forms: (10 units)

- **Physical Science**
  - CHE 150A
  - 5 Units
  - General Chemistry for Scientists and Engineers I

- **Mathematics**
  - MAT 120
  - 4 units
  - Calculus and Analytical

#### Area C: Arts, Literature, Philosophy, and Foreign Languages (9 units)

- **Arts**
  - ART 100
  - 3 units
  - Art Appreciation

- **Letters & Humanities**
  - PHL 100
  - 3 units
  - Introduction to Philosophy

#### Area D: Social, Political and Economic Institutions and Behavior (6 units)

- **Comparative Systems**
  - HIS 100
  - 3 units
  - U.S. History I

- **Social Issues**
  - HIS 201
  - 3 units
  - U.S. History II

#### Area E: Life-Long Understanding and Self Development (3 units)

- **OR**
  - UNI 100
  - 3 Units
  - First Year Seminar

- **OR**
  - ANT 125
  - 3 Units
  - Human Understanding and Development

### Mathematics, Science and Engineering Courses

- **PHY 150A**
  - 4 units
  - General Physics I (Mechanics)

- **PHY 150B**
  - 4 units
  - General Physics II (Electricity & Magnetism)

- **PHY 150C**
  - 4 units
  - General Physics III (Heat & Light)

- **MAT 121**
  - 4 units
  - Calculus and Analytic Geometry II

- **MAT 122**
  - 4 units
  - Calculus and Analytic Geometry III

- **MAT 220**
  - 4 units
  - Differential Equations

- **EGR 100**
  - 3 units
  - Introduction to Engineering

- **EGR 200**
  - 2 units
  - Engineering Mechanics-Statics

- **EGR 225**
  - 3 units
  - Introduction to Materials

- **EGR 250**
  - 4 units
  - Introduction to Circuit Analysis