Aviation Technology Pathway

Aviation technology includes the design, production, repair, and maintenance of all types of aircraft. Employees with aviation technology degrees are highly sought after for careers in the aviation industry, manufacturing, and maintenance, repair and overhaul, in northern Illinois and nationwide.

Potential Careers in Transportation Technology (RPS 205)
- Airplane Pilot/Co-Pilot
- Air Traffic Controller
- Avionics Technician
- Cargo and Freight Agent
- Customs Inspector
- Environmental Manager
- Facility Engineer
- Industrial Equipment Mechanic
- Industrial and Packaging Engineer
- International Logistics Specialist
- Safety Analyst
- Storage and Distribution Manager
- Urban and Regional Planner

Potential Careers in Aviation Maintenance (Rock Valley College)
- Aviation engine mechanic
- Airframe mechanic
- Sheet metal construction and repair
- Reciprocating and turbine engine repair

Graduates with a Bachelor of Science, Aviation Management Technology (NIU) find careers at companies like
- Lockheed Martin
- McDonnell Douglas
- Hamilton Sundstrand (UTC Aerospace Systems)
- Chicago’s O’Hare and Midway
- Ingersoll
- Motorola
- Siemens
- Underwriters Labs
- Woodward

Did you know...

584,000 new maintenance technicians will be needed to maintain the world fleet over the next 20 years. 
Source: The 2014 Boeing Pilot & Technician Outlook

$55,980 – median salary of an aircraft mechanic
Source: Bureau of Labor Statistics

Rock Valley College has a state-of-the-art Aviation Maintenance Educational Facility, scheduled to open Fall 2015 at Chicago Rockford International Airport.

All required 300-400 courses in NIU’s Aviation Management Technology program are offered online.

See back panel for more specific program requirements >>

Your pathway to completion

4 Semesters
Coursework at Rockford Public Schools – EMITT Academy Transportation Technology Pathway

6 Semesters
Coursework at Rock Valley College
Associates Degree (AAS) – Aviation Maintenance, including completion of FAA Airframe and Power Plant Certificates

2 Semesters
Coursework at Northern Illinois University
Bachelor of Science, NIU Aviation Management Technology Requires Associates Degree (AAS) – Aviation Maintenance

General Contact Information
## Aviation Technology Pathway Model

The table below shows the courses that, if taken in this sequence, should result in completion of the program in the least amount of time while evenly distributing the course load. Some courses are prerequisites for the courses that follow in the sequence and are subject to change. Please consult your institution’s advising staff for the latest program requirements when registering for courses.

Missing coursework will hinder a students’ progress in the program. To progress seamlessly from one institution to the next, students should obtain a degree from the first institution. All plans of study should meet local and state high school graduation requirements, general education requirements, and prerequisites for advanced courses.

To read this table -
Each column represents a single grade year or semester as noted. Summer coursework may be necessary for some students. All information was taken from online materials published by each institution on its website in February, 2015.

### RPS 205 - EMITT Academy Transportation Technology

<table>
<thead>
<tr>
<th>Grade 9</th>
<th>Grade 10</th>
<th>Grade 11</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Seminar</td>
<td>Orientation to Transportation</td>
<td>Automotive Technology I</td>
<td>Automotive Technology II</td>
</tr>
</tbody>
</table>

### RVC - Aviation Maintenance Technology

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aircraft Fuel Systems (AVM-249)*</td>
<td>Aircraft Auxiliary Systems (AVM-244)</td>
<td>Airframe Inspection (AVM-252)</td>
<td>General Chemistry laboratory (CHEM 111)</td>
<td>Supervision in Industry (ENG-404)</td>
<td>Basic Physics and Laboratory (PHYS 150A)</td>
</tr>
<tr>
<td>Assembly &amp; Rigging (AVM-250)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### NIU - Bachelor of Science, Aviation Management Technology

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigonometry (MATH 155)</td>
<td>Plant location, Layout and Materials Handling (TECH 492)</td>
<td>Industrial Project Management (TECH 497)</td>
<td>Workshop in Technology (TECH 497)</td>
</tr>
<tr>
<td>Basic Statistics (STAT 208)</td>
<td>Energy Management (TECH 494)</td>
<td>Disaster Preparedness (TECH 432)</td>
<td>Elective 1</td>
</tr>
<tr>
<td>General Chemistry (CHEM 110)</td>
<td>Industrial Quality Control (TECH 394)</td>
<td>Human Factors in Industrial Accident Prevention (TECH 434)</td>
<td>Elective 2</td>
</tr>
</tbody>
</table>

### Recommended Electives:
- Exploring Engineering, Aerospace, Introduction to Industrial Tech and Engineering
- Recommended out of school experiences in workplaces, weekend and summer activities:

**For more information about Rockford Public School’s – EMITT Academy Transportation Technology program, contact Dave Carson, Executive Director, College and Career Readiness, 815-966-3123**

**For more information about the Rock Valley College Aviation Maintenance Technology program, contact Mark Adolphson, Academic Chair, Aviation Technology, 815-921-3015**

**For more information about NIU’s Bachelor of Science, Aviation Management Technology Program, contact Stacey Deegan, Program Advisor, 815-753-9943**
Did you know...

Analysts project 1,000,000 manufacturing vacancies by the year 2020.
Source: The 2014 Boeing Pilot & Technician Outlook

The average US Manufacturing worker earns more than $77,000…almost 25% more than other sectors.
Source: National Association of Manufacturers

The fastest-growing jobs in the Rockford area are in the manufacturing of transportation equipment, electrical equipment, appliances, and components.
Source: Regional P-20 Network Emerging Jobs Report

All required 300-400 courses in NIU’s Applied Manufacturing Technology program are offered online.

See back panel for more specific program requirements >>

Applied Manufacturing Technology Pathway

Applied Manufacturing Technology includes the planning, management, and processing of materials into intermediate or final products as well as professional and technical support activities such as production planning and control, maintenance and manufacturing process engineering. Demand for skilled employees is growing rapidly in this field.

Manufacturing Technology Occupations in Highest Demand (P-20 Network, 2015)

- Chemical engineer
- Electrical engineer
- Electronics engineer
- Health, safety, environmental assurance
- Industrial engineer
- Labor relations manager
- Logistician
- Maintenance and repair workers
- Manufacturing engineer
- Mechanical engineer
- Operations manager
- Quality control technician
- Production manager
- Team assembler
- Health, safety, environmental assurance
- Industrial engineer
- Labor relations manager
- Logistician
- Maintenance and repair workers
- Manufacturing engineer
- Mechanical engineer
- Operations manager
- Quality control technician
- Production manager
- Team assembler

Potential Careers in Manufacturing Engineering Technology (Rock Valley College)

- Product design
- 3-D CAD modeling
- Process planning
- Production scheduling
- Quality technician
- Automated production
- Technical sales
- CNC programming and operation
- Automated production
- Technical sales
- CNC programming and operation

Graduates with a Bachelor of Science, Applied Manufacturing Technology (NIU), find careers at companies like

- AON
- Caterpillar
- Chrysler
- Conner-Winfield
- Hamilton Sundstrand
- UTC Aerospace Systems
- Ideal Industries
- Ingersoll
- Motorola
- Siemens
- Underwriters Labs
- Woodward

Your pathway to completion

4 Semesters
Coursework at Rockford Public Schools – EMITT Academy Manufacturing Operations Pathway

6 Semesters
Coursework at Rock Valley College
Associates Degree – Manufacturing Engineering Technology

2 Semesters
Coursework at Northern Illinois University
Bachelor of Science in Technology, Applied Manufacturing Technology (online)
The table below shows the courses that, if taken in this sequence, should result in completion of the program in the least amount of time while evenly distributing the course load. Some courses are prerequisites for the courses that follow in the sequence and are subject to change. Please consult your institution’s advising staff for the latest program requirements when registering for courses.

Missing coursework will hinder a student’s progress in the program. To progress seamlessly from one institution to the next, students should obtain a degree from the first institution. All plans of study should meet local and state high school graduation requirements, general education requirements, and prerequisites for advanced courses.

To read this table -
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**Applied Manufacturing Technology Pathway**

The table below shows the courses that, if taken in this sequence, should result in completion of the program in the least amount of time while evenly distributing the course load. Some courses are prerequisites for the courses that follow in the sequence and are subject to change. Please consult your institution's advising staff for the latest program requirements when registering for courses.

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**To read this table** - 
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<table>
<thead>
<tr>
<th>RPS 205 - EMITT Academy Manufacturing Operations Pathway</th>
<th>RVC - Manufacturing Engineering Technology</th>
<th>NIU - Bachelor of Science, Applied Manufacturing Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 9</td>
<td>Semester 1</td>
<td>Semester 2</td>
</tr>
<tr>
<td><strong>Freshman Seminar</strong></td>
<td><strong>Beginning Algebra Part II (MTH-092); prerequisite MTH 091</strong></td>
<td><strong>Industrial Quality Control (TECH 391)</strong></td>
</tr>
<tr>
<td><strong>Intro to Industrial Technology and Engineering</strong></td>
<td><strong>Manufacturing Processes I (MET-110)</strong></td>
<td><strong>Industrial Project Management (TECH 496)</strong></td>
</tr>
<tr>
<td><strong>Introduction to Engineering Design (only at East, Guilford; Project Lead the Way)</strong></td>
<td><strong>CNC Machine Setup/Operations/Programming (MET-111)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Machine Tool I (only at Jefferson)</strong></td>
<td><strong>Hydraulics, Pneumatics and PLCs (MET-146)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Machine Tool II (only at Jefferson)</strong></td>
<td><strong>DC/AC Circuits and Electronics I (EET-141)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Intermediate Algebra Part II (MTH 094 2 credits) or Combined Beg &amp; Intermediate Algebra (MTH 096S 6 credits)</strong></td>
<td><strong>Robotics and Automated Systems (EET-254)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fabrication I (only at Auburn, Guilford)</strong></td>
<td><strong>Orientation to Manufacturing (only at Jefferson)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fabrication II (only at Guilford)</strong></td>
<td><strong>Machine Design (MET-221) for MD emph. OR Manufacture Methods, Process Plan &amp; Sys (MET-247) for AP emphasis</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fabrication II &amp; III (only at Auburn)</strong></td>
<td><strong>Mechanisms (MET-220) for MD emph. OR CNC/CAM Operations I (MET-226) for AP emphasis</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Composition I (ENG-101)</strong></td>
<td><strong>Mechanics (MET-217)</strong></td>
<td><strong>Facilities Management Technology (TECH 406)</strong></td>
</tr>
<tr>
<td><strong>Materials and Processes (MET-105)</strong></td>
<td><strong>Strength of Materials (MET-218)</strong></td>
<td><strong>Manufacturing Distribution Applications (TECH 492)</strong></td>
</tr>
<tr>
<td><strong>Composition II (ENG-103) or Introduction to</strong></td>
<td><strong>Applied Physics (MET-162)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Plane Trigonometry (MTH-125) or College Algebra &amp; Trigonometry (MTH-132)</strong></td>
<td><strong>Apprenticeship Projects (MET-249)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Emphasis in Mechanical Design or Automated Production should be chosen by the end of Semester 4</strong></td>
<td><strong>Technology Electives (Choose 2)</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Recommended out of school experiences** in workplaces, weekend and summer activities:

**For more information about Rockford Public Schools – EMITT Academy Manufacturing Operations Pathway, contact Dave Carson, Executive Director, College and Career Readiness 815-966-3123**

**For more information about the Rock Valley College Manufacturing Engineering Technology program, contact Ron Geary, Vice President, Career and Technical Education/Outreach 815-921-3101**

**For more information about NIU's Bachelor of Science, Applied Manufacturing Technology program, contact Stacey Deegan, Technology Program Advisor 815-753-9943**
Nursing Pathway Model for Exemplary Students

Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. Advocacy, promotion of safety, research, participation in shaping health policy and in patient and health systems management, and education are also key nursing roles. Strong demand for nurses will continue.

Potential Careers in Nursing
- Registered nurse
- Licensed practical nurse
- Nurse practitioner
- Medical and health services management
- Nurse
- Medical and health services management

Where Nurses Work
- General and surgical hospitals
- Doctor's offices
- Nursing care facilities
- Outpatient facilities
- Home health services
- Pharmaceutical companies

Recent nursing school graduates enjoy some of the highest starting salaries among their peers in other industries
- $86,470 – Personal Care Services
- $79,530 – Federal Executive Branch (OES Designation)
- $74,940 – Pharmaceutical and Medical Manufacturing
- $74,930 – Colleges, Universities, and Professional Schools
- $74,180 – Medical Equipment and Supplies Manufacturing

Did you know...
The job outlook for Registered Nurses is projected to grow at a rate of 19% between 2012 and 2022 (faster than average growth rate of occupations - 11%).

Registered Nurses receive an annual median pay of $65,470 per year with an Associate's degree

NIU's Bachelor of Science in Nursing (BSN) program ranks 21 out of the top 50 schools offering BSN degrees that "offer the best combination of cost and return on investment so you can know you're getting a degree that is worth your time and tuition."

See back panel for more specific program requirements >>

Your pathway to completion

4 Semesters
Coursework at U-46 – Barlett, Elgin, Larkin, South Elgin, or Streamwood High Schools
Health Sciences Cluster, Therapeutic Services Pathway, Registered Nursing Program

4–6 Semesters
Coursework at Elgin Community College
Associates Degree – Nursing

*See grid on following page for more information about the transition from RN to BSN

3 Semesters
Coursework at Northern Illinois University
RN to BS in Nursing
Completion of general education course requirements may require an additional semester.
Nursing Pathway Model for Exemplary Students

The table below shows the courses that, if taken in this sequence, should result in completion of the program in the least amount of time while evenly distributing the course load. Some courses are prerequisites for the courses that follow in the sequence and are subject to change. Please consult your institution's advising staff for the latest program requirements when registering for courses.

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To read this table - Each column represents a single grade year or semester as noted. Summer coursework may be necessary for some students. All information is taken from online published materials by each institution on its website in February of 2015.

<table>
<thead>
<tr>
<th>U-46 Health Sciences, Therapeutic Services Pathway, Nursing Program</th>
<th>ECC - Associates Degree Nursing</th>
<th>NIU - RN to BS in Nursing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade 9</strong></td>
<td><strong>Prerequisites</strong></td>
<td><strong>Semester 1</strong></td>
</tr>
<tr>
<td>Honors English</td>
<td>Honors English</td>
<td>Nursing Fundamentals (NUR 115)</td>
</tr>
<tr>
<td>Honors Algebra or higher math</td>
<td>Honors chemistry</td>
<td>Introduction to Pharmacology (NUR 116)</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>AP psychology or Principles of Biology (Dual Credit for ECC BIO 110)</td>
<td>Introduction to Psychology (PSY 100) or AP Psychology score of 4 or 5</td>
</tr>
<tr>
<td>PE/Health</td>
<td>PE/Drivers Ed</td>
<td>Socialization into Nursing Program (HPE 101)</td>
</tr>
<tr>
<td>Orientation to Health Occupations</td>
<td>AP US History</td>
<td>Professional Aspects of Nursing (NUR 122)</td>
</tr>
<tr>
<td><strong>Grade 10</strong></td>
<td><strong>Semester 2</strong></td>
<td><strong>Semester 3</strong></td>
</tr>
<tr>
<td>Honors English</td>
<td>Honors Algebra 2 or higher math</td>
<td>Caring for Women &amp; Children (NUR 122)</td>
</tr>
<tr>
<td>Honors biology</td>
<td>Honors chemistry</td>
<td>Complex Health Challenges II (NUR 214)</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>AP Psychology</td>
<td>Human Anatomy and Physiology (BIO 240)</td>
</tr>
<tr>
<td>Orientation to Health Occupations</td>
<td>AP US History</td>
<td>Professional Socialization (NURS 224)</td>
</tr>
<tr>
<td><strong>Grade 11</strong></td>
<td><strong>Semester 4</strong></td>
<td><strong>Semester 5</strong></td>
</tr>
<tr>
<td>Honors English</td>
<td>Honors AP English</td>
<td>Integrative Nursing Experience (NUR 222)</td>
</tr>
<tr>
<td>Honors or AP English</td>
<td>AP English (writing course)</td>
<td>Nursing Leadership (NURS 420)</td>
</tr>
<tr>
<td>Honors or AP English</td>
<td>AP English (writing course)</td>
<td>Nursing Leadership (NURS 420)</td>
</tr>
<tr>
<td>Honors biology</td>
<td>Honors chemistry</td>
<td>Nursing Leadership (NURS 420)</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>AP Psychology</td>
<td>Nursing Leadership (NURS 420)</td>
</tr>
<tr>
<td>Orientation to Health Occupations</td>
<td>AP US History</td>
<td>Nursing Leadership (NURS 420)</td>
</tr>
</tbody>
</table>


Program admission and degree completion requirements require different coursework at subsequent institutions. AP scores of 4 or 5 in the suggested content areas can greatly reduce time to degree completion.

Recommended out of school experiences in workplaces, weekend and summer activities

*Before the RN to BS NIU Degree*
- Achieve/maintain licensure as RN in the state of Illinois
- If not directly from ECC, currently employed as an RN or have worked as a RN within the past 5 years and have a current license or have taken a refresher course and have a current license

For more information about Health Sciences, Therapeutic Services Pathway, Nursing Program, contact
Carol DePue
Career and Technical Education Coordinator
847-888-5000 x5310

For more information about the Elgin Community College Associate Degree-Nursing program, contact
Ann Amaefule
Director of Nursing Program
847-214-7304

For more information about NIU’s RN to BS in Nursing program, contact
Jan Strom
School of Nursing and Health Studies Chair
815-753-6550