ASSOCIATE DEGREE Courses

General Education
30 credits of General Education required from the MN transfer curriculum from a minimum of these six areas:

Area 4: Math & Logic Curriculum (3 credits minimum)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1102</td>
<td>Finite Math - MATH 1102</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1104</td>
<td>Finite Math - MATH 1104</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1106</td>
<td>Trigonometry - MATH 1106</td>
<td>3</td>
</tr>
</tbody>
</table>

Area 5: History & Social Sciences Curriculum (3 credits minimum)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 2221</td>
<td>Mass Communications - JOIR</td>
<td>3</td>
</tr>
<tr>
<td>POLI 1101</td>
<td>Political Science - POLI 1101</td>
<td>3</td>
</tr>
</tbody>
</table>

Area 9: Ethical/Civic Responsibility Curriculum (3 credits minimum)

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 2221</td>
<td>Mass Communications - JOIR</td>
<td>3</td>
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<tr>
<td>POLI 1101</td>
<td>Political Science - POLI 1101</td>
<td>3</td>
</tr>
</tbody>
</table>

Bachelor of Manufacturing Management Degree (BMM)

Upper Division 40 credits

Program Core Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 2101</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2201</td>
<td>Calculus I - MATH 2201</td>
<td>4</td>
</tr>
<tr>
<td>MATH 2202</td>
<td>Calculus II - MATH 2202</td>
<td>4</td>
</tr>
<tr>
<td>MATH 2203</td>
<td>Calculus III - MATH 2203</td>
<td>4</td>
</tr>
<tr>
<td>MATH 2204</td>
<td>Calculus IV - MATH 2204</td>
<td>4</td>
</tr>
</tbody>
</table>

Total: 120 Credits for BMM Degree

This program is offered in partnership with University of Minnesota - Crookston.

University of Minnesota Crookston
At least 30 from the University of Minnesota
Total: 120 Credits for BMM Degree

Last updated October 15, 2009
### Manufacturing Career Ladder

**Certificate Programs Courses**

**Lean Manufacturing/Continuous Improvement** 17 Credit Certificate
- Introduction to Cellular Manufacturing - MANF 2311 3 credits
- Principles of Lean Manufacturing - MANF 2530 2 credits
- Total Quality Systems and SPC in a Mfg Environment - MANF 2505 2 credits
- Value Stream Mapping - MANF 2530 2 credits
- Production and Operation Management - MANF 2510 2 credits
- Facilitating Teams in a Manuf. Environ. - MANF 2540 3 credits
- Elective Courses (choose one of the following)
  - Principles of Supervision in a Manufacturing Environment - MANF 2500 2 credits
  - Business Computer Skills - CPTR 1104 3 credits

**Production and Inventory Management** 16 Credit Certificate
- Basic Supply Chain Management - PRIM 2500 2 credits
- Master Planning of Resource - PRIM 2510 2 credits
- Detailed Scheduling and Planning - PRIM 2520 2 credits
- Execution and Control of Operation - PRIM 2530 2 credits
- Strategic Management of Resources - PRIM 2540 2 credits
- Technical Report Writing - ENGL 2207 2 credits
- Value Stream Mapping - MANF 2530 2 credits
- Principles of Lean Manufacturing - MANF 2520 2 credits

**Supervisory Leadership** 18 Credit Certificate
- Business Communications - BUSN 1140 3 credits
- Principles of Management - BUSN 2210 3 credits
- Supervision - MKTG 2210 3 credits
- Interpersonal Communications - SPCH 1103 3 credits
- Elective Courses (choose one of the following)
  - Human Relations - SSCI 1101 3 credits
  - Leadership - BUSN 2200 3 credits
  - Legal Environment of Business - BUSN 2218 3 credits
  - Global Business - MKTG 2220 3 credits

**Associate of Science Degree**

**Manufacturing Emphasis**
- Lean Manufacturing/Continuous Improvement 30 Credits
- Production and Inventory Management 16 Credits
- Supervisory Leadership 18 Credits

**General Education**
- 30 credits of General Education required from the MN transfer curriculum from a minimum of these six areas:
  - Area 1 - Communications (9 cr)
  - Area 2 - Critical Thinking (3 cr)
  - Area 3 - Natural Science (6 cr)
  - Area 4 - Math & Logic (3 cr)
  - Area 5 - History & Social Science (9 cr)
  - Area 9 - Ethical/Civic Respons. (3 cr)

**WHAT'S REQUIRED OF ME:**
- Complete all courses in the program
- Participate in and complete all classwork
- Earn a grade of “C” or better for Polaris to sponsor tuition reimbursement.

**WHO'S ELIGIBLE:**
- All Full-Time Polaris employees can enroll in this credit-based certificate and degree program.

**Bachelors of Manufacturing Management Degree**
- Total= 120 Credits for BMM Degree
- Northland College ● Center for Outreach & Innovation ● East Grand Forks, MN 800-451-3441 ● Thief River Falls, MN 800-959-6282
- www.northlandcollege.edu/business_industry