Mechanical Engineering – Suggested Co-op Plan for Transfers with VCCS AS Degree Starting

Student gets paid work experience for 1-2 summers plus Fall or Spring in an engineering-related job.

**Notes:** Courses in white boxes assumed to be done prior to entering VT.
- Arrows denote prerequisites. Please check for updates in the undergraduate catalog. You are welcome to meet with an ME advisor to discuss your course plans.
- Pathways vs. CLE electives based on date of entrance, not graduation. ADG degree satisfies these elective requirements.
- Must earn C- or higher in ME2004 & ME2134 to meet prerequisite & graduation requirements.
- Approved design elective may count towards ME major elective credits.
- **Required senior courses are offered only once per year; ME4015 & ME4016 must be taken in order during the same academic year, beginning in Fall.

**Continued enrollment requirements:** see ME website for more information, www.me.vt.edu.
- 2.000 minimum in-major GPA (all “ME” & “NSEG” courses)
- 2.000 minimum extended-in-major GPA (“ME”, “NSEG” courses & ESM2104, 2204, & 2304)
- 2.000 minimum overall GPA (all courses)
- By 45 attempted required hours completion of: ESM2104, MATH2204 & MATH2114
- By 60 attempted required hours completion of: MATH2204, & ME2004 (C-)
- By 72 attempted required hours completion of: ME2134 (C-), MATH2304 or ME3024, and ME3524
- By 93 attempted required credits completion ME4015 and ME4124

**Pathways Concept 3 (3) (or CLE area 3*)
- CHEM 1035 (3) Chemistry
- CHEM 1045 (1) Chem Lab
- Co: CHEM 1035

**Pathways Concept 3 (3) (or CLE area 3*)
- PHYS 2305 (4) Physics I
- Pre: MATH1225 or MATH2226

**Pathways Concept 7 (3) (or CLE area 7*)
- PHYS 2306 (4) Physics II
- Pre: PHYS 2305, MATH2226

**Approved design elective may count towards ME major elective credits.

**Pathways Concept 2 (3) (or CLE area 2*)
- ECE 2054 (3)
- Pre: ENGE1215 (C-)

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**Soph 1 (15 cr)
- **ME2134 (4) Thermodynamics (C-)
  Pre: CHEM1035, MATH2204 & PHYS2306; Co: MATH2214 or ME2124 (C-)
- ME2124 (C-) & ME3124 (3)

**Junior 1 (15 cr)
- ME3414 (4) Fluid Mechanics (w/lab)
  Pre: MATH 2114, 2214 & 2204, ME2004 (C-); Co: ME2134 or ME2124 (C-) & ME3404 (3)

**Junior 2 (15 cr)
- ME3304 (3) Heat & Mass Transfer
  Pre: ME2124 (C-) or 2134(C-), ME3404 or 3414, ME2004 (C-), MATH 2214

**Senior 1 (12 cr)
- **ME4124 (3) CAD Thermal/Fluid Design
  Pre: (ME2134(C-) or ME3124), (ME3404 or 3414), ME3304

**Senior 2 (6 cr)
- **ME 4015 (5) Senior Capstone Design
  Pre: (ME3024 or 2024), ME2034, (ME3034 or 4006), ME3304, ME3524, ME3534, (ME3624 or 3614) & ME4005

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**Senior Capstone Design
- Pre: ME 4015 (continuation of same ME 4015 project from Fall)

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**ME Major Elective (3)
- ME Major Elective (3)
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Still not sure about a major? See: www.careercornerstone.org for help choosing an engineering, math, or science major.
Co-op Schedules Transfer Students with AS Degree:
See the color-coded degree path sheet on the previous page for which courses should be taken in each term.

Students gain a year of engineering-related work experience while spreading out their courses into an additional semester. Median hourly rates for our co-op students were over $19/hour in 2018. Some students also received housing allowances or free housing and overtime pay.

In general, co-op students who work multiple terms with the same employer tend to:
- earn a higher hourly rate compared to summer interns who work for a single term only,
- participate in longer-term, more complex projects than interns
- get a broader experience with a company than an intern,
- possibly rotating between departments or job functions, and
- have a job offer from their employer before they start their senior year

Employers expect all engineering students to have related work experience before they start a full time job after graduation. Co-op students tend to get higher starting salaries and more job offers than students who do internships only or who have no work experience at all.

Students care more about how long it takes them to graduate and how high their grades are, but above a minimum GPA (sometimes as low as a 3.0), employers care more about prior work experience than grades, so don’t underestimate the need for experience!

Note: Transfer students who were unable to meet entrance requirements to switch into Mechanical Engineering at the end of their first semester at Virginia Tech should consult with an academic advisor to see what options are available for them.

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**Co-op schedule with first work term spring of first year**

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Sophomore</td>
<td>Work</td>
<td>Work</td>
</tr>
<tr>
<td>3</td>
<td>Junior 1</td>
<td>Junior 2</td>
<td>Work</td>
</tr>
<tr>
<td>4</td>
<td>Senior 1</td>
<td>Senior 2</td>
<td></td>
</tr>
</tbody>
</table>

**Co-op schedule with first work term fall of second year**

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Sophomore</td>
<td>Junior 1</td>
<td>Work</td>
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<tr>
<td>3</td>
<td>Work</td>
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</tr>
<tr>
<td>4</td>
<td>Senior 1</td>
<td>Senior 2</td>
<td></td>
</tr>
</tbody>
</table>

Be sure to add any course shown with white fill on the previous page that you haven’t already completed before coming to Virginia Tech.

Pathways/CLE humanity electives should be complete with a VCCS AS degree. (Contact the Dean’s Office in 212 Hancock with questions.)

Note that “Junior 2” courses must be taken during a Spring semester or over the summer (not recommended).