**Willamette University Pre-Engineering Program**

**Affiliated Universities:**


2) University of Southern California (Los Angeles, California): [http://viterbi.usc.edu/admission/transfer/threetwo.htm](http://viterbi.usc.edu/admission/transfer/threetwo.htm)

3) Washington University (St. Louis, Missouri): [http://engineering.wustl.edu/DualDegreeProgram.aspx](http://engineering.wustl.edu/DualDegreeProgram.aspx)

**What is it?** Students earn a Bachelor of Arts from Willamette (WU) and a Bachelor of Science in Engineering from one of the affiliated engineering schools (AES).

**What are the options?**

<table>
<thead>
<tr>
<th>3-2 engineering program with Columbia, USC, Washington U.</th>
<th>4-2 undergraduate program with Columbia</th>
<th>4-2 graduate program with Columbia</th>
<th>3-3 accelerated Master's track</th>
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</thead>
<tbody>
<tr>
<td>3 years at WU 2 years at AES</td>
<td>4 years at WU 2 years at Columbia</td>
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<td>3 years at WU 3 years at AES</td>
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<td>BA from WU BS from AES</td>
<td>BA from WU, BS from Columbia</td>
<td>BA from WU, Master's from Columbia</td>
<td>BA from WU BS, Master's from AES</td>
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<tr>
<td>BS is the professional degree (allows getting certified and working as engineer).</td>
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<td>Master's is the preferred choice if interest in academia or R&amp;D in industry.</td>
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<td>Students are eligible for federal financial aid throughout the full five years.</td>
<td>Students are only eligible for federal financial aid during their time at WU.</td>
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<td>No TA or RA scholarships (unlike in most other STEM graduate programs).</td>
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<tr>
<td>Guaranteed admission with Columbia if all requirements fulfilled.</td>
<td>No guaranteed admission.</td>
<td>No guaranteed admission.</td>
<td>No guaranteed admission.</td>
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<td>Only available in certain fields of engineering.</td>
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<tr>
<td>In principle any major, but some majors will not accept transfer credit back to WU. Physics aligns nicely.</td>
<td>Any major, STEM majors strongly preferred.</td>
<td>Major in physics, chemistry, or math required.</td>
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<td>Must fulfill all general education requirements at Willamette and make significant progress toward their major.</td>
<td>Note: Very different application. Contact admissions at Columbia early on!</td>
<td></td>
<td>Very demanding and generally not recommended.</td>
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</table>
WHAT CAN YOU DO?

- Contact Professor Watkins, rwatkins@willamette.edu
- Meet with one of the engineering advisers (Profs. Altman, Kleinert, Watkins in physics) regularly and early (freshman year!).
- Check engineering school websites for up-to-date information and requirements.
- Decide which engineering major you want to pursue (requirements are different for different majors).
- Note that if you fulfill all of their requirements, admission is pretty much guaranteed. Over the last 26 years we only had one student who was not admitted because they did not meet all the requirements.
- Re-negotiate scholarships: WU scholarships do not transfer to the AES.

GENERAL PROGRAM REQUIREMENTS:

Note that every engineering major has slightly different requirements. Below are the typical requirements for all engineering majors.

- Students must make significant progress toward their major (typically all courses except senior year courses) and make arrangements with their major advisers to transfer credit back from the AES. In physics, minimum requirement is six physics courses (Intro Physics I & II, Modern Physics, Mechanics, ATEP + 1 more).
- Students must complete their general education program (MOIs).
- Math requirements: Calculus through Differential equations.
- Physics requirements: Physics I and II, sometimes Modern Physics
- Chemistry requirements: Chemistry I and II
- Computer Science requirements: one programming language course. Most engineering majors accept or even require Matlab, but some prefer Java.
- Typical GPA requirements: currently 3.0 for USC, 3.25 for Washington University, and 3.30 for Columbia (overall and for pre-engineering courses).
- Must pass the pre-engineering courses with at least a B on the first try. Never take pre-engineering courses pass/fail.
- Must take (almost) all required courses at WU.
- In addition, most engineering schools prefer if you take a course in Statics, Dynamics, and Materials before applying to their program. Willamette does not offer these course; you have to take them over the summer e.g. from a community college. Make sure to check with the engineering school to ensure that these courses satisfy their requirements and will transfer. USC requires all three courses prior to your arrival. The civil engineering major at all engineering schools generally also requires that you have taken all three courses prior to your arrival.
- Columbia University specific requirements: In addition, one course in Economics.
- Washington University specific requirements: In addition, at least 6 semester hours of social science courses and 6 semester hours of humanities courses. Two of these courses must be from the same department with one course at the upper level [300-400]. Note that one Willamette credit is equivalent to 4 semester hours.
- University of Southern California specific requirements: Note that you won’t find out whether or not you are accepted into the program until June 1st! While USC does not require a course in Econ, they like to see it on your transcript. Take it if you can!

ALTERNATIVES:

- Physics Bachelors are very employable; see e.g. www.aps.org and click on Careers in Physics.
- The University of Oregon offers a great program (Master's Industrial Internship Program, http://internship.uoregon.edu/) that prepares students for a career in industry (1-year program resulting in a master's degree and 9-months industrial internship experience).