FAQs for the Co-terminal Master’s Degree Program in Applied and Engineering Physics

1. Is there a co-terminal degree in Applied and Engineering Physics?
   • YES. It is administered by the Department of Applied Physics.

2. Who is eligible to apply?
   • All applicants must have earned a minimum of 120 units toward graduation as shown on the undergraduate unofficial transcript. This includes allowable Advanced Placement (AP) and transfer credit. (see https://registrar.stanford.edu/students/coterminal-degree-programs for additional university requirements.

   • Applicants must submit to the Applied Physics Department a complete application package through https://www.applyweb.com/stanterm/index.ftl

   • Application for Admission
   • Preliminary Program Proposal Form
   • Two letters of recommendation from members of the Stanford faculty
   • Statement of Purpose¹
   • Unofficial transcript
   • Supplemental form²

¹no more than two pages please
²supplemental form available on departmental website at https://web.stanford.edu/dept/app-physics/cgi-bin/academic-programs/

In order to succeed in our co-terminal program, we believe that each student must have formal technical courses in mathematics at the level of MATH 41, 42, 51-53 and physics at the level of PHYSICS 41, 43, 45 as well as exposure to topics in elementary quantum mechanics. In order to fulfill the prerequisite for elementary quantum mechanics, we require that students must have taken one of the following: PHYSICS 130, CHEM 173, MATSCI 157 or equivalent.

3. Do I need to take the GRE?
   • No, you do not. It is optional. You may include the scores on the supplemental application if you wish.
4. Is there any financial aid that co-terminal applicants can apply for?
   - The Applied Physics Department does not have any financial aid for co-terminal students. However students can contact a Financial Aid Counselor in the Financial Aid Office to discuss their situation. [https://financialaid.stanford.edu/aid/special/co_term.html](https://financialaid.stanford.edu/aid/special/co_term.html)

5. When can I start?
   - Students may begin their co-terminal quarter in the autumn, winter or spring quarters. But please keep in mind that many courses are only offered once a year and prerequisites for courses must be carefully reviewed in order to assemble a feasible co-terminal preliminary program proposal.
   
   - Co-terminal applications for a given quarter are due four weeks before the last day of the previous quarter. Exact dates are posted on Explore Degrees each year.

6. Is there a minimum GPA for degree conferral?
   - Yes, the university requirement of a 3.0 GPA.

7. Are there sample programs available?
   Yes. They are available on the departmental website.

8. What are the requirements for completion of the degree?
   - A total of 45 units is required for the Applied and Engineering Physics Co-terminal master’s degree

   a. BREADTH (16 units)
   The following four courses are required.

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Physics 201</td>
<td>4</td>
<td>Electrons and Photons</td>
</tr>
<tr>
<td>Applied Physics 203</td>
<td>4</td>
<td>Atoms, Fields and Photons</td>
</tr>
<tr>
<td>Applied Physics 204</td>
<td>4</td>
<td>Quantum Materials</td>
</tr>
<tr>
<td>Applied Physics 205</td>
<td>4</td>
<td>Introductory Biophysics</td>
</tr>
</tbody>
</table>

   b. DEPTH (9 units minimum)
   Three engineering courses in a depth area. At least one must be at the 300 level and the other courses must be at the 200 level or above to provide depth in one area. To be approved by the co-terminal academic advisor.

   c. LAB (3-4 units)
   One laboratory or methods course from the following is required.
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Physics 207</td>
<td>4</td>
<td>Laboratory Electronics</td>
</tr>
<tr>
<td>Applied Physics 232</td>
<td>4</td>
<td>Advanced Imaging Lab in Biophysics</td>
</tr>
<tr>
<td>Applied Physics 345</td>
<td>4</td>
<td>Advanced Numerical Methods for Data Analysis and Simulation</td>
</tr>
<tr>
<td>Electrical Engineering 234</td>
<td>3</td>
<td>Photonics Laboratory</td>
</tr>
<tr>
<td>Electrical Engineering 251</td>
<td></td>
<td>High Frequency Circuit Design Laboratory</td>
</tr>
<tr>
<td>Electrical Engineering 312</td>
<td>3</td>
<td>Integrated Circuit Fabrication Laboratory</td>
</tr>
<tr>
<td>Materials Science &amp; Engineering 322</td>
<td>3</td>
<td>Transmission Electron Microscopy Laboratory</td>
</tr>
<tr>
<td>Materials Science &amp; Engineering 331</td>
<td>3</td>
<td>Atom-based Computational Methods for Materials</td>
</tr>
</tbody>
</table>

d. **SEMINAR (3 units)**
The seminar requirement can be fulfilled by either (i) taking one formal seminar course for credit each term or (ii) attending a minimum of 8 informal or formal research seminars during each of the three terms. Students who attend 8 informal research seminars must submit a list of the seminars with a paragraph describing the content, signed by their academic advisor.

e. **APPROVED TECHNICAL ELECTIVES (6 units minimum that brings up the total units to 45)**
https://web.stanford.edu/dept/app-physics/cgi-bin/aep-approved-technical-electives/

f. **Other details**
- at least 36 units must be letter graded units
- at least 36 units must be at or above the 200 level.
- at least 21 units must be letter graded technical courses at the 200 level
- up to 6 units of Directed Studies in Applied Physics (APPPHYS 290) or equivalent independent study course may be counted toward this requirement (Performance courses such as athletics, choir or photography are not allowed.)
- at least 30 units must be in technical areas (Research, Literature, Directed Studies and Seminar courses cannot be included among these 30 units)

9. **Who should I contact for questions related to the co-terminal degree?**

For more information, please contact Prof. Yuri Suzuki (ysuzuki1@stanford.edu) or Patrice O’Dwyer (podwyer@stanford.edu).