### Materials Science and Engineering 2019–2020 Program Sheet

*Final version of completed and signed program sheet due to the department no later than one month prior to the last quarter of senior year.*

*Follow all requirements as stated for the year of the program sheet used.*

**Name:**

**SU ID #:**

**Phone:**

**Email:**

**Today's Date:**

**Month/Yr B.S. expected:**

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### Mathematics and Science Requirements

<table>
<thead>
<tr>
<th>Dept</th>
<th>Course</th>
<th>Title</th>
<th>Transfer/AP Approval</th>
<th>Unit</th>
<th>Grade</th>
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<tbody>
<tr>
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<td>✓ if Transfer</td>
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</table>

**Mathematics (20 units minimum)**

- MATH 51 or CME 100/ENGR 154 (required)
- MATH 52 or CME 104/ENGR 155B (required)
- MATH 53 or CME 102/ENGR 155A (required)

One additional course, see approved list at ughb.stanford.edu/courses

**Mathematics Unit Total (20 units minimum)**

**Science (20 units minimum; see note 1. Approved list at ughb.stanford.edu/courses)**

**Science Unit Total (20 units minimum)**

**Math and Science (40 units minimum)**

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### Technology in Society Requirement

(1 course required; approved list at ughb.stanford.edu/courses)

A TiS course must be on the SoE-approved list the year you take it.

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### Engineering Fundamentals

(Two courses required; see note 2)

- ENGR 50/50E/50M Introduction to Materials Science (required)

One additional course, see approved list at ughb.stanford.edu/courses

**Engineering Fundamentals (7 units minimum)**

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### NOTES

* All courses taken for the major must be taken for a letter grade if that option is offered by the instructor.
* This form is available in Excel and PDF formats at http://ughb.stanford.edu/ under Program Sheets; you must use a program sheet from a year you are enrolled at Stanford. The printed form must be signed by the advisor and, if required, by the departmental representative. Changes must be initialed in ink.
* Read all emails from your major department; this is the SoE’s only method of conveying key information to you.
* Minimum Grade Point Average (GPA) for all courses in Engr Fundamentals and MatSci Depth (combined) is 2.0.
* Transfer and AP credits in Math, Science, Engineering Fundamentals, & TiS must be approved by the SoE Dean's Office. Transfer credits in MatSci Depth must be approved by the Advisor. Transfer credit information and petitions are available at http://ughb.stanford.edu/ under Petitions.
* Units may not be counted in more than one category.

1. Must include a full year (15 units) of physics or chemistry, with at least one quarter of study (5 units) in the other subject.
2. If two of ENGR 50, 50E, or 50M are taken, one may be used for ENGR Funds and the other for MSE Fundamentals.
Materials Science and Engineering Depth (53 units minimum) (see note 3)

<table>
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<tr>
<th>Dept</th>
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</thead>
<tbody>
<tr>
<td>MATSCI</td>
<td>142</td>
<td>Quantum Mechanics of Nanoscale Materials (required)</td>
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</tr>
<tr>
<td>MATSCI</td>
<td>143</td>
<td>Materials Structure and Characterization (required)</td>
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<tr>
<td>MATSCI</td>
<td>144</td>
<td>Thermodynamic Evaluation of Green Energy Technologies (required)</td>
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<tr>
<td>MATSCI</td>
<td>145</td>
<td>Kinetics of Nanomaterials Synthesis (required)</td>
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Materials Science Fundamentals Unit Total (24 units)

MSE Depth (choose four laboratory courses for 16 units; 4 units must be WIM)

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</tr>
</thead>
<tbody>
<tr>
<td>MATSCI</td>
<td>161/164</td>
<td>Satisfies WIM requirement - can take both for depth if desired</td>
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</tbody>
</table>

Materials Science Depth Unit Total (16 units)

Focus Area (4 courses for a minimum of 13 units; select from one of the ten Focus Areas) (see note 4)

Focus area is:

Focus Area Unit Total (13 units minimum)

Materials Science and Engineering (53 units minimum)

Program Approvals

**Advisor**

Printed Name: ___________________________  Date: ________________

Signature: _________________________________

**Departmental**

Printed Name: ___________________________  Date: ________________

Signature: _________________________________

**School of Engineering** (No action required -- office use only)

Printed Name: ___________________________  Date: ________________

Signature: _________________________________

NOTES

(3) A full list of course options and requirements can be found in the "Bachelor's" section of the Stanford Bulletin - see exploredegrees.stanford.edu/schoolofengineering/materialsscienceandengineering/

(4) If the focus area option contains only 12 units, but the combined unit total in major (SoE Fundamentals, MSE Fundamentals, MSE Depth, MSE Focus Area) is at 60 or more, it will be allowed and no petition is necessary.