Course 3A
Program Proposal

Effective April, 2019 (Version 1.2)

DMSE DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING

Student Information

Name

Email

Planned Graduation Date (i.e. June 2019)

Submit by the first semester of the junior year. Mark all proposed subjects below. For subjects you have finished and count towards 3A, mark as both "proposed" and "completed". Do not mark in-progress subjects as "completed". **For elective subjects supporting program goals, attach subject descriptions from the MIT bulletin**. When ready to submit, send to dmse-ugoffice@mit.edu or deliver to 6-107.

Program Goals *Describe your 3A curricular goals in 1-2 sentences*

Five subjects from DMSE Core (at least 60 units)

No.	Subject Title	Units	Proposed	Completed
3.012	Fundamentals of Materials Science and Engineering	15	❑	❑
3.016	Computational Methods for Materials Scientists and Engineers [2] (or, both 3.016A & 3.016B)	12	❑	❑
or	18.03 Differential Equations [1]	12	❑	❑
3.022	Microstructural Evolution in Materials	12	❑	❑
3.024	Electronic, Optical, and Magnetic Properties of Materials	12	❑	❑
3.032	Mechanical Behavior of Materials	12	❑	❑
3.034	Organic and Biomaterials Chemistry [3]	12	❑	❑
3.042	Materials Project Laboratory (CI-M)	12	❑	❑
3.044	Materials Processing	12	❑	❑

Required Laboratory Subject

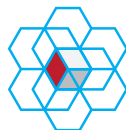| No.	Subject Title	Units	Proposed	Completed
3.014	Materials Laboratory (CI-M)	12	❑	❑

Two Required CI-M Subjects *Can overlap with core, restricted elective, or elective subjects, refer to attached list*

No.	Subject Title	Units	Proposed	Completed
3.014	Materials Laboratory (CI-M)	12	❑	❑
			❑	❑

Three DMSE restricted elective subjects (36 units) *Refer to attached list*

No.	Subject Title	Units	Proposed	Completed
			❑	❑
			❑	❑
			❑	❑

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Elective subjects supporting program goals (72 units)

No.	Subject Title	Units	Proposed	Completed
			❏	❏
			❏	❏
			❏	❏
			❏	❏
			❏	❏
			❏	❏
			❏	❏
			❏	❏
	Total Elective Units			

Frequently Asked Questions

What are "program goals" and how should I describe them?

These are curricular goals, such as "study in biomaterials in preparation for medical school" or "computational materials and data science."

What counts as "elective subjects supporting program goals"?

These should be advanced subjects graded on a letter basis, not a GIR, offered outside of Course 3, totalling 72 units.

Can I apply Course 3 subjects to my "elective subjects supporting program goals"?

Usually not. Ideally, your three DMSE restricted elective subjects already support your program goals.

Signature

_____

Student Signature   *Date*

❏ **First Proposal**   ❏ **Revised Proposal**

Decision

❏ **Approved**   ❏ **Not Approved**

Notes on Decision

_____

Chair, DMSE Undergraduate Committee   *Date*

Once approved, please make sure you are declared as Course 3A on websis.

Course 3 / 3A
Restricted Elective Subjects

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DMSE DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING

Restricted Elective Subjects

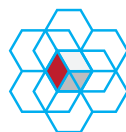| No.	Subject Title	Units
3.004	Principles of Engineering Practice	12
3.016	Computational Methods for Materials Scientists and Engineers [1,2]	12
3.017	Modelling, Problem Solving, Computing, and Visualization	12
3.021	Introduction to Modeling and Simulation	12
3.034A	Organic and Biomaterials Chemistry [3]	12
3.046	Themodynamics of Materials	12
3.048	Advanced Materials Processing	12
3.052	Nanomechanics of Materials and Biomaterials	12
3.053J	Molecular, Cellular, and Tissue Biomechanics	12
3.054	Cellular Solids: Structure, Properties, Applications	12
3.055J	Biomaterials Science and Engineering	12
3.063	Polymer Physics	12
3.064	Polymer Engineering	12
3.07	Introduction to Ceramics	12
3.071	Amorphous Materials	12
3.072	Symmetry, Structure and Tensor Properties of Materials	12
3.074	Imaging of Materials	12
3.080	Strategic Materials Selection	12
3.081	Industrial Ecology of Materials	12
3.086	Innovation and Commercialization of Materials Technology	12
3.087	Materials, Societal Impact, and Social Innovation	12
3.14	Physical Metallurgy	12
3.15	Electrical, Optical, and Magnetic Materials and Devices	12
3.152	Magnetic Materials	12
3.153	Nanoscale Materials	12
3.154J	Materials Performance in Extreme Environments	12
3.155J	Micro-Nano Processing Technology (CI-M)	12
3.156	Photonic Materials and Devices	12
3.171	Structural Materials and Manufacturing	12
3.18	Materials Science and Engineering of Clean Engineering	12
3.19	Sustainable Chemical Metallurgy	12

[1] 18.032 Differential Equations is also an acceptable option.
[2] These subjects may count as part of the required subjects or as restricted electives, but not both.
[3] Students can take 3.034 as a required subject or 3.034A as a restricted elective, but cannot count both subjects toward their major.

Required Subject

No.	Subject Title	Units
3.014	Materials Laboratory	12

Choose one of the following as the second CI-M subject

No.	Subject Title	Units
2.009	The Product Engineering Process	12
2.671	Measurement and Instrumentation	12
3.042	Materials Project Laboratory	12
3.155J	Micro/Nano Processing Technology	12
7.02J	Introduction to Experimental Biology and Communication	18
10.26	Chemical Engineering Projects Laboratory	15
10.28	Chemical-Biological Engineering Laboratory	15
10.29	Biological Engineering Projects Laboratory	15
10.467	Polymer Science Laboratory	15