

# Bachelor of Science in Engineering as Recommended by the Department of Mechanical Engineering/Course 2-A

## Mechanics: Modeling, Experimentation, and Computation Track

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General Institute Requirements (GIRs)	Subjects
Science Requirement	6
Humanities, Arts, and Social Sciences Requirement	8
Restricted Electives in Science and Technology (REST) Requirement [can be satisfied by 2.001 and 18.03 in the Departmental Program]	2
Laboratory Requirement [can be satisfied by 2.671 in the Departmental Program]	1
<b>Total GIR Subjects Required for SB Degree</b>	<b>17</b>

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### Communication Requirement

2 subjects designated as Communication Intensive in Humanities, Arts, and Social Sciences (CI-H); and  
2 subjects designated as Communication Intensive in the Major (CI-M).

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### PLUS Departmental Program

*Subject names below are followed by credit units, and by prerequisites if any (corequisites in italics).*

#### Required Departmental Core Subjects

2.001 Mechanics and Materials I, 12, REST; 8.01, 18.02, 18.03  
2.003J Dynamics and Control I, 12, REST; 8.01, 18.03  
2.005 Thermal-Fluids Engineering I, 12, REST; 8.02, 18.03  
2.009 The Product Engineering Process, 12; 2.001, 2.003, 2.005, 2.670  
2.670 Mechanical Engineering Tools, 6  
18.03 Differential Equations, 12, REST; 18.02\*  
2.671 Measurement and Instrumentation, 12, LAB, CI-M; 2.003, 8.02

#### Additional Mechanical Engineering Core Subjects for This Track

2.002 Mechanics and Materials II, 12; 2.001  
2.004 Dynamics and Control II, 12; 2.003, 8.02  
2.006 Thermal-Fluids Engineering II, 12; 2.005, 18.03  
2.672 Project Laboratory, 6, 1/2-LAB; 2.001, 2.003, 2.006, 2.671

#### Specialization in Mechanics: Modeling, Experimentation & Computation

2.088J plus at least 2 additional subjects drawn from the following list totaling at least 42 units (substitutions by petition)

2.088J Introduction to Modeling & Simulation, 12, 18.03

#### Computational Mechanics & Mechanics of Solid Materials

2.092 Computer Methods in Dynamics, 12; 2.001, 2.003  
2.06J Mechanical Vibration, 12; 2.003  
18.330 Introduction to Numerical Analysis, 12; 18.02, 18.03

#### Fluid Mechanics & Transport Phenomena

2.016 Introduction to Marine Hydrodynamics 12; 2.005  
2.41 Advanced Thermal Fluids Engineering, 12; 2.006  
2.51 Intermediate Heat and Mass Transfer, 12; 2.006

#### Nonlinear Dynamics

18.353J Nonlinear Dynamics I: Chaos, 12; 18.03, 8.02  
18.354J Nonlinear Dynamics II: Continuum Systems, 12; 18.353J

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Departmental Program units that also satisfy the GIRs (36)

Unrestricted Electives 48

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**Total Units Beyond the GIRs Required for SB Degree 186**

*No subject can be counted both as part of the 17-subject GIRs and as part of the 186 units required beyond the GIRs. Every subject in the student's departmental program will count toward one or the other, but not both.*

For an explanation of credit units, or hours, please refer to the Subject Key in Part 3 of this catalogue.

\* Alternative prerequisites are listed in the subject description.