

# Mechanical Engineering and History, BSME

The combined mechanical engineering and history major is designed to help students develop skills across different intellectual domains. A solid grounding in history helps students better understand the political, cultural, and economic context in which technologies are developed and deployed. Indeed, history offers a myriad of case studies that highlight both the transformative potential and the unintended consequences of new technologies and technological processes. By studying different phases of the past and different societies in the past, students will gain a broad perspective that gives them the range and flexibility required in many work situations. History also provides a terrain for moral contemplation. Greater sensitivity to historical context also helps students see beyond commonly accepted narratives valorizing individual entrepreneurs and appreciate the different ways in which innovation, disruption, official support, and even contingency give rise to new technologies. Finally, by writing effective papers and engaging in productive discussions at the heart of history courses, students also cultivate skills in critical analysis and persuasive communication that could be employed in any future careers.

## Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

## Universitywide Requirements

All undergraduate students are required to complete the Universitywide Requirements (<https://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/>).

## NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (<https://catalog.northeastern.edu/undergraduate/university-academics/nupath/>).

NUPath requirement Interpreting Culture (IC) is not explicitly satisfied by required courses. Students are responsible for satisfying this requirement with electives.

## Engineering Requirements

Code	Title	Hours
<b>Required Engineering</b>		
ME 2340 and ME 2341	Introduction to Material Science and Lab for ME 2340	5
ME 2350	Statics	4
ME 2355 and ME 2356	Mechanics of Materials and Lab for ME 2355	5
ME 2380 and ME 2381	Thermodynamics and Recitation for ME 2380	4
ME 3455 and ME 3456	Dynamics and Lab for ME 3455	5
ME 3475 or ME 3480	Fluid Mechanics International Applications of Fluid Mechanics	4
ME 4505 and ME 4506	Measurement and Analysis with Thermal Science Application and Lab for ME 4505	5
<b>Senior Capstone Design Project</b>		
MEIE 4701	Capstone Design 1	1
MEIE 4702	Capstone Design 2	5
<b>Technical Electives</b>		
Complete two of the following:		8
ME 4508	Mechanical Engineering Computation and Design	
ME 4550	Mechanical Engineering Design	
ME 4555	System Analysis and Control	
ME 4570	Thermal Systems Analysis and Design	
<b>Supplemental Credit</b>		
2 semester hours from the following course count toward the engineering requirement:		2
GE 1501	Cornerstone of Engineering 1 <sup>1</sup>	

3 semester hours from the following course count toward the engineering requirement:

3

GE 1502	Cornerstone of Engineering 2 <sup>1</sup>
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## History Requirements

Code	Title	Hours
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
HIST 2220	History of Technology	4
<b>Research Methods</b>		
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1
<b>Introductory History</b>		
Complete one course from HIST 1001 to HIST 1999 (excluding HIST 1200 and HIST 1201).		4
<b>History Elective</b>		
Complete two HIST courses at any level in any field.		8
<b>Pre-1800 History Elective</b>		
Complete one of the following:		4
HIST 1100	Law and History	
HIST 1180	African History	
HIST 1185	Introduction to Middle Eastern History	
HIST 1187	Introduction to Latin American History	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1272	Europe in the Middle Ages, 500–1500	
HIST 1285	Introduction to Russian Civilization	
HIST 1389	History of Espionage 1: Antiquity to World War II	
HIST 2000	Native American Resistance: Past and Present	
HIST 2311	Colonialism/Imperialism	
HIST 2330	Colonial and Revolutionary America	
HIST 2370	Renaissance to Enlightenment	
HIST 2375	The Tudors, the Stuarts, and the Birth of Modern Britain	
HIST 2390	Africa and the World in Early Times	
HIST 3334	Assassinations in World History	
<b>Intermediate History</b>		
Complete minimum of one HIST course numbered 2000 to 2999 (Excluding HIST 2301 and HIST 2302).		4
<b>Advanced History</b>		
Complete minimum one HIST course numbered 3000 to 4999 (Excluding HIST 4701).		4

## Supporting Courses: Mathematics/Science

Complete all mathematics/science courses with a minimum of 30 semester hours.

Code	Title	Hours
<b>Required Mathematics/Science</b>		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5

**Supplemental Credit**

1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1501	Cornerstone of Engineering 1 <sup>1</sup>	

**Professional Development**

Code	Title	Hours
<b>Professional Development</b>		
GE 1000	First-Year Seminar	1
ENCP 2000	Introduction to Engineering Co-op Education	1
ENCP 3000	Professional Issues in Engineering	1

**Additional Required Courses**

1 semester hour from the following course counts toward the professional development requirement:		1
GE 1501	Cornerstone of Engineering 1 <sup>1</sup>	
1 semester hour from the following course counts toward the professional development requirement:		1
GE 1502	Cornerstone of Engineering 2 <sup>1</sup>	

**Writing Requirements**

Code	Title	Hours
A grade of C or higher is required in each course:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

**Integrative Courses**

Code	Title	Hours
This course is already required above and also fulfills the integrative requirement.		
HIST 2220	History of Technology	

**Required General Elective**

Code	Title	Hours
Complete 4 semester hours of academic, nonremedial, nonrepetitive courses.		4

**Major GPA Requirement**

Minimum 2.000 GPA required in ME courses

Minimum 2.000 GPA required in all HIST courses

**Program Requirement**

141 total semester hours required

<sup>1</sup> Students can substitute Engineering Design (GE 1110) and Engineering Problem Solving and Computation (GE 1111) for Cornerstone of Engineering 1 (GE 1501) and Cornerstone of Engineering 2 (GE 1502) in approved situations.

**Plan of Study****Sample Plans of Study****Four Years, One Co-op in Spring/Summer 1**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1151 (ND)		4 GE 1502 (ER)		4 Vacation		0 Vacation	0
CHEM 1153	0	HIST 1200		1			
ENGW 1111 (WF)	4	HIST 1201		4			
GE 1000	1	MATH 1342 (FQ)		4			
GE 1501	4	PHYS 1151 (ND)		3			
MATH 1341 (FQ)	4	PHYS 1152 (AD)		1			
		PHYS 1153		1			
	17		18		0		0

**Year 2**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENCP 2000		1 HIST 2301		4 Vacation		0 ME 3475 or 3480	4
MATH 2321 (FQ)	4	HIST 2302 (WD)		1		Introductory history course	4
ME 2340 (WI)	4	MATH 2341		4			
ME 2341	1	ME 2355		4			
ME 2350	4	ME 2380		4			
PHYS 1155 (ND)	3	ME 2381		0			
PHYS 1156 (AD)	1	ME 2356		1			
PHYS 1157	1						
	<b>19</b>			<b>18</b>		<b>0</b>	<b>8</b>

**Year 3**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 2220 (SI, DD)		4 Co-op		Co-op		MEIE 4701 (EI, CE, WI)	1
ME 3455	4					ME technical elective	4
ME 3456	1					Intermediate history course	4
ME 4505 (AD)	4						
ME 4506	1						
Pre-1800 history elective	4						
	<b>18</b>			<b>0</b>		<b>0</b>	<b>9</b>

**Year 4**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENCP 3000		1 Advanced history course		4			
ENGW 3302 or 3315 (WD)	4	General elective		4			
MEIE 4702 (EI, CE, WI)	5	Intermediate history course		4			
Intermediate history course	4	ME technical elective		4			
Intermediate history course	4						
	<b>18</b>			<b>16</b>			

**Total Hours: 141****Five Years, Three Co-ops in Spring/Summer 1****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1151 (ND)		4 GE 1502 (ER)		4 Vacation		0 Vacation	0
CHEM 1153	0	HIST 1200		1			
ENGW 1111 (WF)	4	HIST 1201		4			
GE 1000	1	MATH 1342 (FQ)		4			
GE 1501	4	PHYS 1151 (ND)		3			
MATH 1341 (FQ)	4	PHYS 1152 (AD)		1			
		PHYS 1153		1			
	<b>17</b>			<b>18</b>		<b>0</b>	<b>0</b>

**Year 2**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENCP 2000		1 Co-op		0 Co-op		0 Vacation	0
MATH 2321 (FQ)	4						
ME 2350	4						
PHYS 1155 (ND)	3						
PHYS 1156 (AD)	1						
PHYS 1157	1						
HIST 2301	4						
HIST 2302 (WD)	1						
	<b>19</b>			<b>0</b>		<b>0</b>	<b>0</b>

### Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341		4 Co-op		Co-op		ME 2380	4
ME 2340 (WI)		4				ME 2381	0
ME 2341		1				Intermediate history course	4
ME 2355		4					
ME 2356		1					
Introductory history course		4					
	18		0		0		8

### Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENCP 3000		1 Co-op		Co-op		ME 3475 or 3480	4
HIST 2220 (SI, DD)		4				MEIE 4701 (EI, CE, WI)	1
ME 3455		4				General elective	4
ME 3456		1					
ME 4505 (AD)		4					
ME 4506		1					
Pre-1800 history elective		4					
	19		0		0		9

### Year 5

Fall	Hours	Spring	Hours
ENGW 3302 or 3315 (WD)		4 Advanced history course	4
MEIE 4702 (EI, CE, WI)		5 Intermediate history course	4
Intermediate history course		4 ME technical elective	4
Intermediate history course		4 ME technical elective	4
	17		16

**Total Hours: 141**