

# CIVIL ENGINEERING FLOWCHART

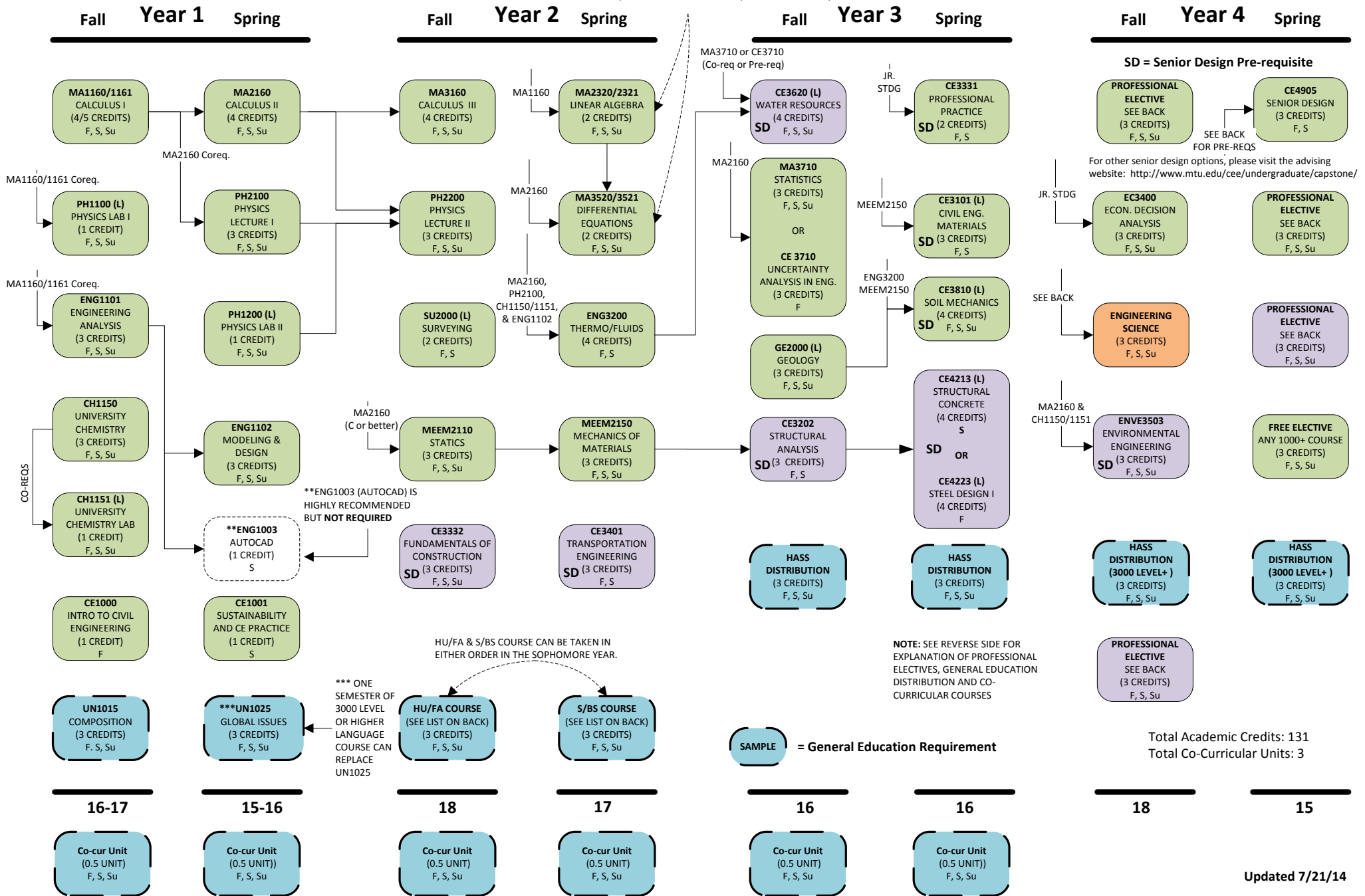
## General

### Academic Year 2014-15

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Adjustments may be required due to curriculum changes.

- F INDICATES COURSE IS OFFERED FALL SEMESTER
- S INDICATES COURSE IS OFFERED SPRING SEMESTER
- Su INDICATES COURSE IS OFFERED SUMMER SEMESTER
- (L) INDICATES A COURSE WHICH INCLUDES A LAB  
MUST BE SCHEDULED IN ADDITION TO THE LECTURE

NOTE: LINEAR ALGEBRA & DIFFERENTIAL EQUATIONS CAN BE TAKEN DURING THE SAME SEMESTER (MA2321 & MA3521) OR SEPARATE SEMESTERS (MA2320 & MA3520)



### Engineering Science Elective List (3 credits)

BE2700	BIOMEDICAL SIGNALS & SYSTEMS
CM2110	FUND. OF CHEM ENGRG 1
CM2200	INTRO TO MINERALS AND MATERIALS
EE3010	CIRCUITS AND INSTRUMENTATION
MY2100	INTRO TO MATERIALS SCI & ENGRG
MEEM2201	THERMODYNAMICS
MEEM2700	DYNAMICS
SSE3730	SYSTEMS DYNAMICS AND DESIGN

### Senior Design (SD) Pre-reqs (complete 7 of the following)

CE3101, CE3202, CE3331, CE3332,  
CE3401, CE3620, CE3810,  
ENVE3503, CE4213 or CE4223

**UNDERGRADUATE CATALOG:** <http://www.mtu.edu/catalog/undergraduate/course-descriptions/>

**HASS DISTRIBUTION LIST:** <http://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/>

**CO-CURRICULAR LIST:** <http://www.mtu.edu/registrar/faculty-staff/advisors/gen-ed/>

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### Professional Electives

**(UNDERGRADUATE CATALOG: <http://www.mtu.edu/catalog/undergraduate/course-descriptions/>)**

- ANY 3000, 4000, OR 5000 LEVEL COURSE IN CIVIL AND ENVIRONMENTAL ENGINEERING.
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### GENERAL EDUCATION REQUIREMENTS

#### A. CORE COURSES (12 CREDITS)

1. **UN1015** (COMPOSITION)
2. **UN1025** (GLOBAL ISSUES)
3. **HU/FA** (HUMANITIES/FINE ARTS) \*
4. **S/BS** (SOCIAL/BEHAVIORAL SCIENCES) \*\*

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SS2600  
SS2700

#### B. HASS DISTRIBUTION COURSES (12 CREDITS)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_ (3000+)
4. \_\_\_\_\_ (3000+)

#### C. CO-CURRICULAR ACTIVITIES (3 UNITS)

PE/FA/AR/AF \_\_\_\_\_  
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ED3510+3511 COMMUNICATING SCIENCE  
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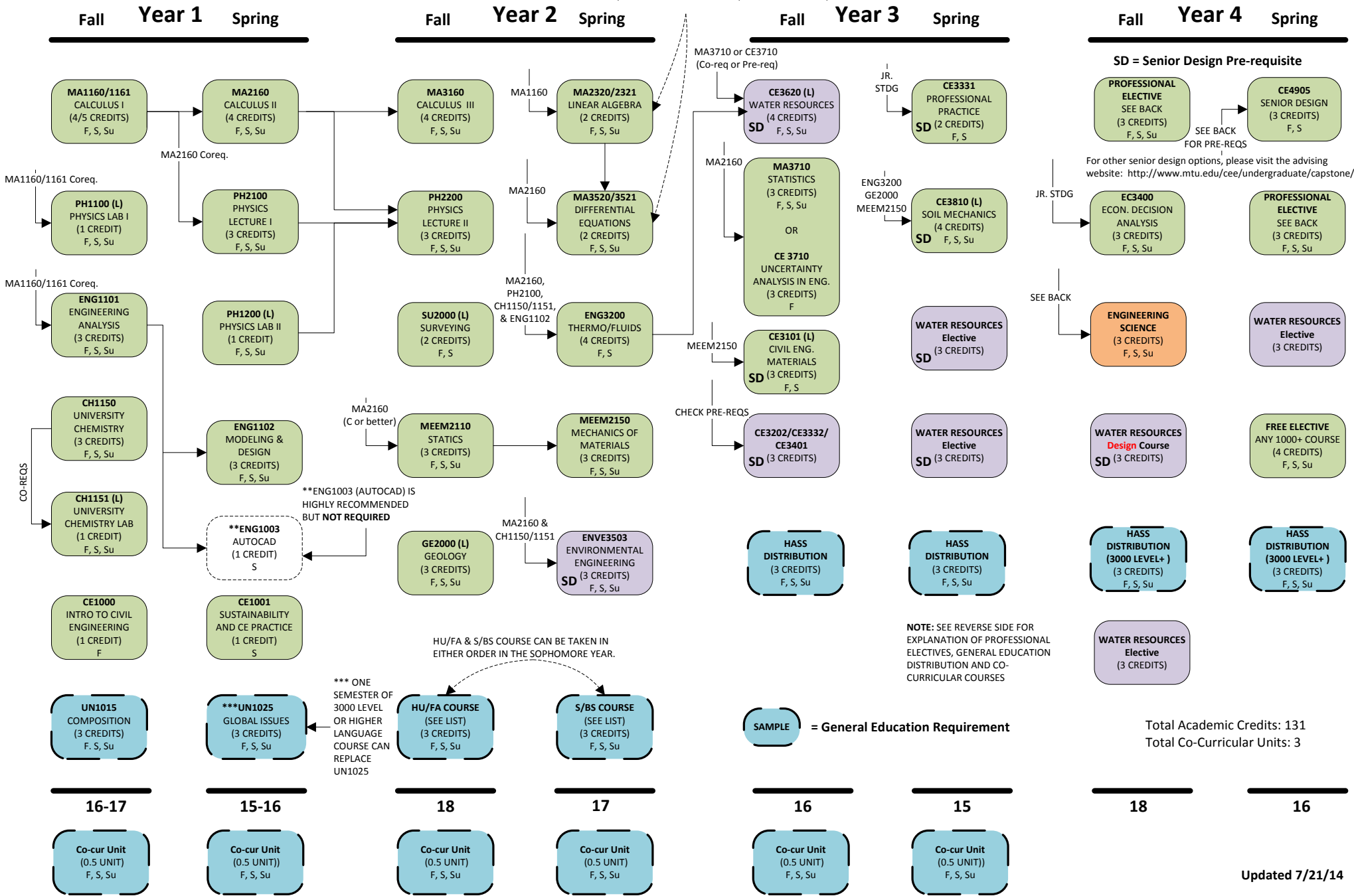
## Water Resources

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## Water Resource Requirements

Choose 1 course from the following

<b>CE3202</b>	<b>STRUCTURAL ANALYSIS</b>	<b>3 credits</b>
<b>CE3332</b>	<b>FUND. OF CONSTRUCTION</b>	<b>3 credits</b>
<b>CE3401</b>	<b>TRANSPORTATION ENGRG</b>	<b>3 credits</b>

### WATER RESOURCES DESIGN COURSE (select 1)

<b>CE4620</b>	<b>RIVER/FLOODPLAIN HYDRAULICS</b>	<b>3 credits</b>
<b>CE4640</b>	<b>STORMWATER MANAGE. &amp; LID</b>	<b>3 credits</b>
<b>CE4665</b>	<b>STREAM RESTORATION</b>	<b>3 credits</b>

### WATER RESOURCES ELECTIVES (select 4)

<b>CE4620</b>	<b>RIVER/FLOODPLAIN HYDRAULICS</b>	<b>3 credits</b>
<b>CE4640</b>	<b>STORMWATER MANAGE. &amp; LID</b>	<b>3 credits</b>
<b>CE4665</b>	<b>STREAM RESTORATION</b>	<b>3 credits</b>
<b>CE5620</b>	<b>STOCHASTIC HYDROLOGY</b>	<b>3 credits</b>
<b>CE5666</b>	<b>WR PLANNING &amp; MANAGEMENT</b>	<b>3 credits</b>
<b>ENVE4502</b>	<b>WASTE TREATMENT</b>	<b>3 credits</b>
<b>ENVE4503</b>	<b>WATER TREATMENT</b>	<b>3 credits</b>
<b>ENVE4505</b>	<b>SURFACE WATER QUALITY</b>	<b>3 credits</b>
<b>ENVE4507</b>	<b>WATER DISTRIBUTION/COLLECT.</b>	<b>3 credits</b>
<b>GE3850</b>	<b>GEOHYDROLOGY</b>	<b>3 credits</b>
<b>GE4800</b>	<b>GROUNDWATER ENGRG</b>	<b>3 credits</b>

### Senior Design (SD) Pre-reqs (complete 7 of the following)

CE3101, CE3331, (CE3202 or CE3332 or CE3401),  
CE3620, CE3810, ENVE3503, WATER RESOURCES  
DESIGN COURSE, & 2 WATER RESOURCES ELECTIVES

### Engineering Science Elective List (3 credits)

BE2700	BIOMEDICAL SIGNALS & SYSTEMS
CM2110	FUND. OF CHEM ENGRG 1
CM2200	INTRO TO MINERALS & MATERIALS
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## GENERAL EDUCATION REQUIREMENTS

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### **B. HASS DISTRIBUTION COURSES (12 CREDITS)**

1. \_\_\_\_\_
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3. \_\_\_\_\_ (3000+)
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### **C. CO-CURRICULAR ACTIVITIES (3 UNITS)**

<b>PE/FA/AR/AF</b> _____	<b>PE/FA/AR/AF</b> _____
<b>PE/FA/AR/AF</b> _____	<b>PE/FA/AR/AF</b> _____
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#### **RECOMMENDED HASS DISTRIBUTION COURSES:**

ED3510+3511	COMMUNICATING SCIENCE
FA2600	THE TECHNIQUE OF ACTING
HU2830	INTRO TO SPEECH COMM.
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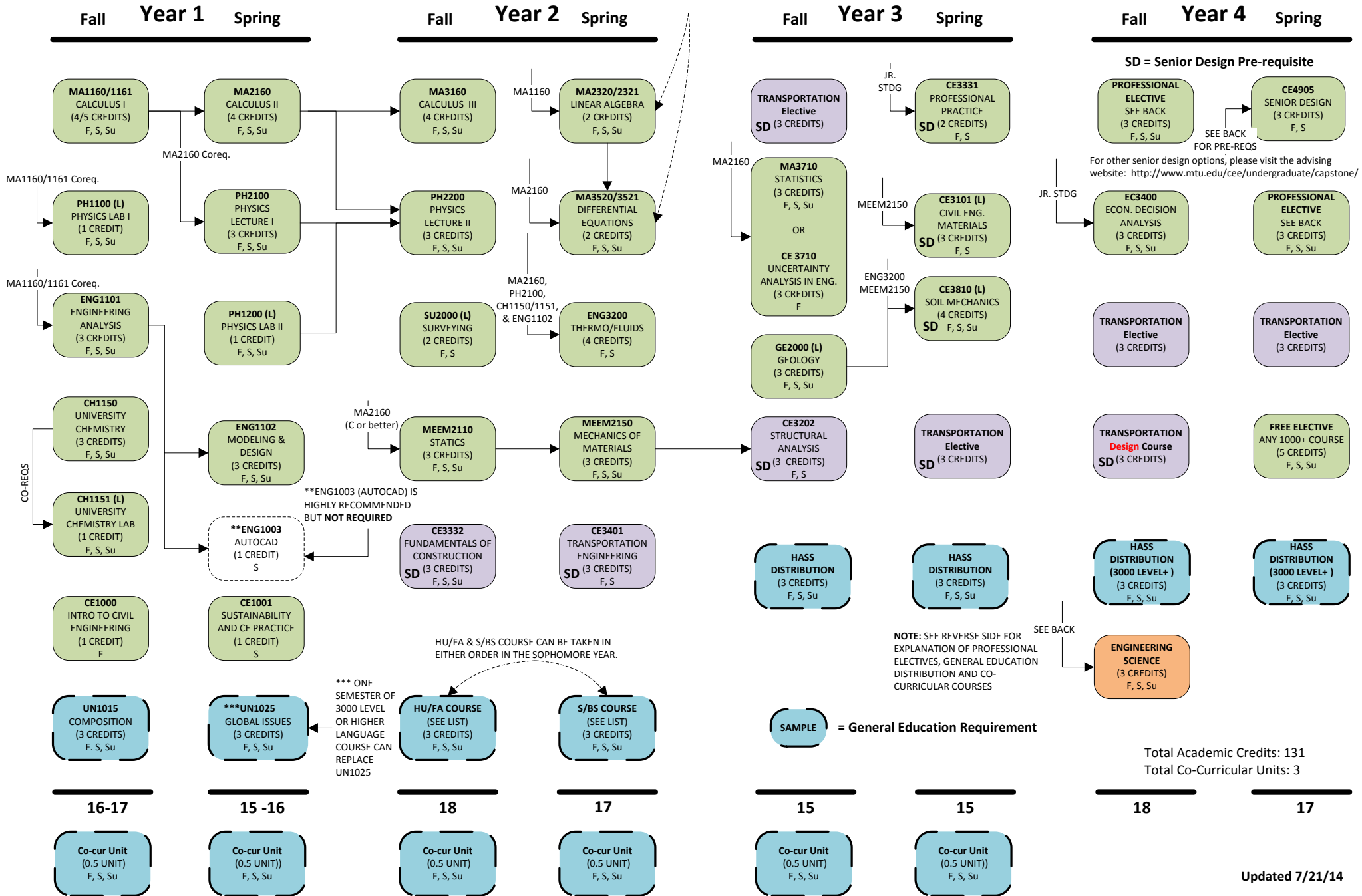
## Transportation

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## Transportation

### TRANSPORTATION DESIGN COURSE (Select 1)

CE4401	PAVEMENT DESIGN	3 credits
CE4407	TRANSPORTATION DESIGN	3 credits

### TRANSPORTATION ELECTIVES (select 4)

CE4401	PAVEMENT DESIGN	3 credits
CE4402	TRAFFIC ENGINEERING	3 credits
CE4403	TRAFFIC SAFETY	3 credits
CE4404	RAILROAD ENGINEERING	3 credits
CE4406	AIRPORT DESIGN	3 credits
CE4407	TRANSPORTATION DESIGN	3 credits
CE4410	TRANSPORTATION PLANNING	3 credits
CE4411	INTELLIGENT TRANS. SYSTEMS	3 credits
CE4422	SUSTAINABLE TRANS. ENGRG	3 credits

Senior Design (SD) Pre-reqs (complete 7 of the following)  
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TRANSPORTATION DESIGN COURSE, & 2  
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### B. HASS DISTRIBUTION COURSES (12 CREDITS)

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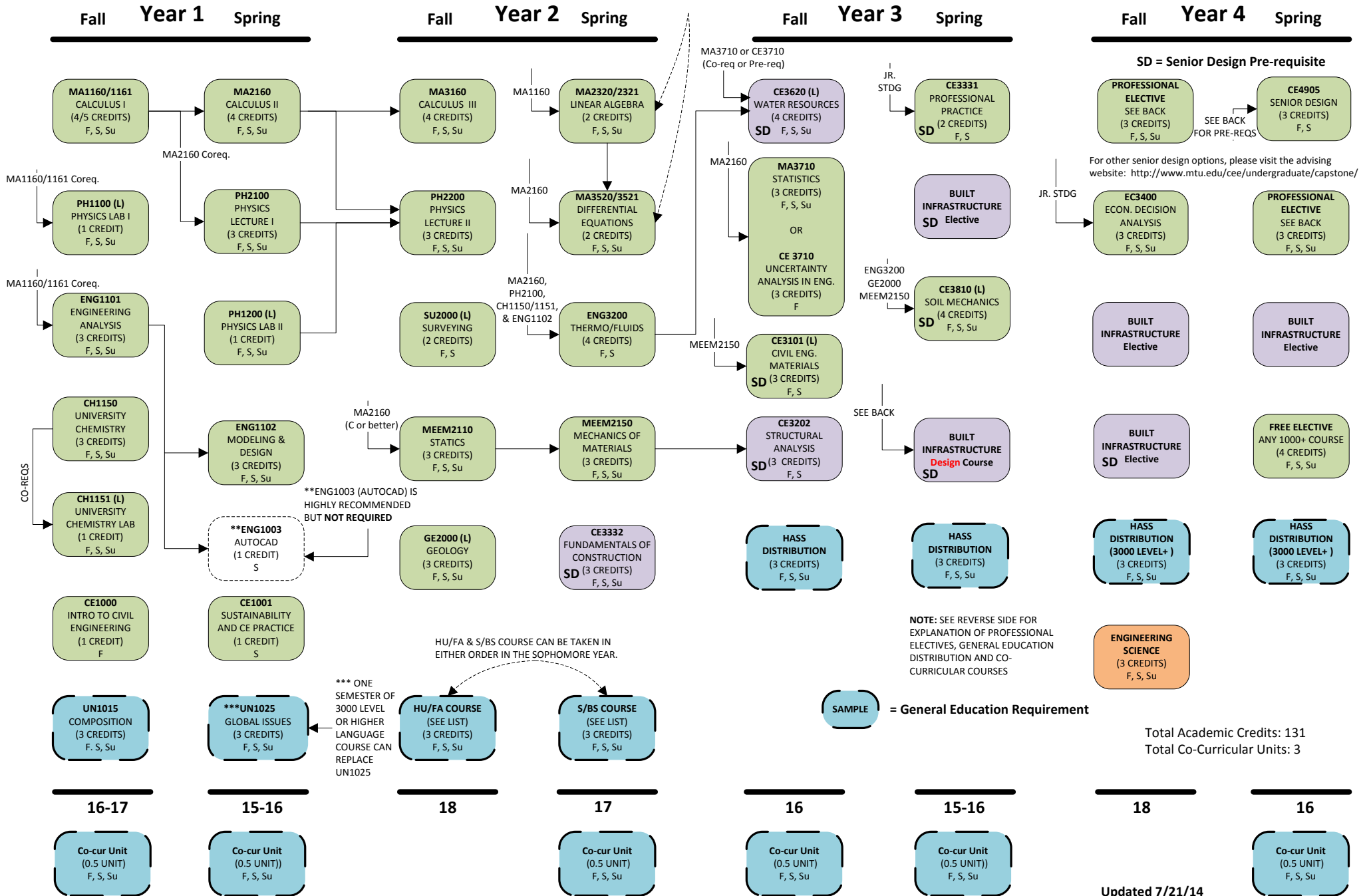
# CIVIL ENGINEERING FLOWCHART

## Built Infrastructure Academic Year 2014-15

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## **BUILT INFRASTRUCTURE**

### **BUILT INFRASTRUCTURE DESIGN COURSE** (select 1)

CE4213	STRUCTURAL CONCRETE DESIGN	4 credits
CE4223	STEEL DESIGN 1	4 credits
CE4820	FOUNDATION ENGINEERING	3 credits

### **BUILT INFRASTRUCTURE ELECTIVES** (select 4)

CE4020	COMPUTER APPLICATIONS	3 credits
CE4201	MATRIX STRUCTURAL ANALYSIS	3 credits
CE4213	STRUCTURAL CONCRETE DESIGN	4 credits
CE4223	STEEL DESIGN 1	4 credits
CE4233	STRUCTURAL TIMBER DESIGN	3 credits
CE4333	ESTIMATING, PLANNING, CONST.	3 credits
CE4344	CONSTRUCTION SCHEDULING	3 credits
CE4820	FOUNDATION ENGINEERING	3 credits
CE4830	GEOSYNTHETICS	3 credits
CE4850	ROCK ENGINEERING	3 credits
CE5212	PRESTRESSED CONCRETE DESIGN	3 credits
CE5213	CONCRETE/MASONRY BLDG SYS	3 credits

**Senior Design (SD) Pre-reqs (complete 7 of the following)**  
CE3101, CE3331, CE3332, CE3202, CE3620, CE3810,  
**BUILT INFRASTRUCTURE DESIGN COURSE, & 2 BUILT  
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