

ME Curriculum Conversion

2012-2103 BSME Curriculum Rollout

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Introduction: Reason for the Curriculum Revision

The Woodruff School of Mechanical Engineering is introducing a new BSME Curriculum starting summer 2012. The 2012-2013 BSME Curriculum contains 15 hours of free electives, increases the total required hours from 126 to 129, and allows students to pursue Concentration Areas. The increased flexibility is designed to give students more opportunities to do things such as study abroad, earn a minor or certificate, take classes outside of ME or pursue one of the newly formed concentrations.

Can I Move to the 2012-2013 Curriculum?

- Students who started at Georgia Tech Spring 2012 and earlier have the option to move to the 2012-2013 Curriculum or stay on the current curriculum. To move to the 2012-2013 Curriculum students must taking classes at Georgia Tech summer 2012 or later and graduate summer 2012 or later. Students may continue to use the 2011-2012 Curriculum if they started taking classes at GT before Summer 2012.
- Any student who changes their major to ME effective summer 2012 and beyond is automatically required to move to the 2012-2013 Curriculum and must complete all of the 2012-2013 Curriculum requirements. Keep in mind that any change of major forms submitted after phase 2 registration closes become effective the following semester.
- All students who start at Georgia Tech summer 2012 and later are required to use the 2012-2013 Curriculum.
- **Catalog Year (Same as Curriculum Year)**

- Every student is assigned a Catalog Year when they change their major or when they start at Georgia Tech. The Catalog Year is the same as the curriculum that you are assigned.
- Each Catalog Year runs from summer through spring. Ex: A student who changes their major during summer 2012, fall 2012 or spring 2013 is assigned a Catalog Year of 2012-2013 which means that he/she is on the 2012-2013 Curriculum. Any change of major forms submitted after phase 2 registration closes become effective the following semester.
- Students can move to later Catalog Year as long as they are taking classes at Georgia Tech during that Catalog Year.
- If you are not sure of your Catalog Year, you can find it listed on your DegreeWorks Audit.

Should I Move to the 2012-2013 Curriculum?

The following is a very general evaluation of who should consider moving to the 2012-2013 Curriculum. Every student should take the time to evaluate the curriculum comparison charts and see whether it is better to move to the 2012-2013 Curriculum. Your academic advisor can verify your decision for you, but you need to do the research. In general, we recommend the following students consider moving:

- Transfer students who started fall 2011 and later who have extra transfer credits that are not being used.
- Students who are interested in adding a minor that is not on our list of approved minors that allow substitutions for the ME electives.
- Students who are planning to attend a study abroad or exchange program and will take extra classes.
- Students who are interested in pursuing a concentration area.
- Students with a D in COE 2001, PHYS 2211 or more than 3 D's in ME classes, should not move to the 2012-2013 Curriculum unless they are willing to repeat these classes.
- Students who want to use 9 hours of research towards their degree should not move to the 2012-2013 Curriculum.

How do I Move to the 2012-2013 Curriculum?

Students who plan to move to the new curriculum must fill out a Change of Major Form to change their Catalog Year to 2012-2013. The Catalog Year is the same as the curriculum year. You should drop the form off at the front desk in the ME Office of Student Services, MRDC room 3112. We are open Monday - Friday from 8-12 and 1-5. We will sign the form and you can pick it up one business day later. You are then responsible for turning it into the registrar's office in the Tech Tower. Students who are off campus can email the form to your ME advisor and we will return the form to you through email. If you move to the new curriculum, you must change your catalog year before you Apply to Graduate.

Concentration Areas

Concentrations are a new feature of the 2012-2013 Curriculum and are only available in the 2012-2013 Curriculum. Some features of the concentrations are:

- Concentrations are optional, not required.
- Concentrations are 15 hours of classes and the classes satisfy the Design Elective, the ME Elective and 9 hours of free electives.
- Concentrations are different than minors because they allow students to specialize in a particular area within ME.
- Concentrations do not currently show up on your transcript, but we are hoping that will change in the future. The concentrations do not show up on your diploma.

New Classes in the 2012-2013 Curriculum

Three new classes will be offered during 2013.

- ME 3017 System Dynamics (3 hrs) replaces ME 3015 System Dynamics & Controls (4 hrs)
- ME 4056 ME Systems Lab (3 hrs) replaces ME 4053 ME Systems Lab (2 hrs)
- ME 4210 Design, Materials & Manufacture (3 hrs) replaces ME 4210 Manufacturing Processes & Engineering (3 hrs)

ME 3015 to ME 3017 Substitution and Transition

- **ME 3015/3017 Transition:** ME 3015 (4 hours) will be offered through fall 2012. ME 3017 (3 hours) will be offered starting spring 2013.
- **Pre-Requisite Changes:** The pre-requisites for ME 3017 are the same as ME 3015.
- **Substitutions:** Regardless of the curriculum you are on the following is true:

$$\text{ME 3017 (3)} + \text{ME 4056 (3)} = \text{ME 3015 (4)} + \text{ME 4053 (2)}$$

The only exceptions to this are for students in the middle of the transition period. Those exceptions are listed below.
- **2011-2012 Curriculum Substitutions:** The following substitutions are allowed for the 2011-2012 and Earlier Curricula

Class Required on 2011-2012 Catalog	Allowable Substitution	Other
ME 3015 (4 hours)	ME 3017 (3 hours) + Free Elective @ 1000 level (1 hour)	N/A

- **2012-2013 Curriculum Substitutions:** The following substitutions are allowed for the 2012-2013 Curriculum

Class Required on 2012-2013 Catalog	Allowable Substitution	Other
ME 3017 (3 hours)	ME 3015 (4 hours)	The extra hour from ME 3015 can be used as a 3000 level free elective

ME 4053 to ME 4056 Substitution and Transition

- **ME 4053/4056 Transition:** ME 4053 (2 hours) will be offered through summer 2013. ME 4056 (3 hours) will be offered starting fall 2013.
- **Pre-Requisite Changes:**
 - *ME 4053 Pre-reqs:* ME 3057, ME 3345, ME 3015 (or ME 3017) and ISYE/Math 3770
 - *ME 4056 Pre-reqs:* ME 3057, ME 3345, ME 3017 (or ME 3015) and ISYE/Math 3770
- **Substitutions:** Regardless of the curriculum you are on the following is true:

$$\text{ME 3017 (3)} + \text{ME 4056 (3)} = \text{ME 3015 (4)} + \text{ME 4053 (2)}$$

The only exceptions to this are for students in the middle of the transition period. Those exceptions are listed below.

- **2011-2012 Curriculum Substitutions:** The following substitutions are allowed for the 2011-2012 and Earlier Curricula

Class Required on 2011-2012 Catalog	Allowable Substitution	Other
ME 4053 (2 hours)	ME 4056 (3 hours)	The extra hour from ME 4056 can be used as a 4000 level free elective

- **2012-2013 Curriculum Substitutions:** The following substitutions are allowed for the 2012-2013 Curriculum

Class Required on 2012-2013 Catalog	Allowable Substitution	Other
ME 4056 (3 hours)	ME 4053 (2 hours) + Free Elective @ 1000 level (1 hour)	N/A

ME 4210 to ME 3210 Substitution and Transition

- **ME 4210/3210 Transition:** ME 4210 (3 hours) will be offered through spring 2013. ME 3210 (3 hours) will be offered starting summer 2013.
- **Pre-Requisite Changes:** As a result of this change, the following pre-reqs will be changed:
 - *ME 3210 Pre-reqs:* MSE 2001 and ME 2110
 - *ME 4210 Pre-reqs:* ME 3345, COE 3001, ISYE/Math 3770
 - *ME 4182 Pre-reqs:* COE 3001, ME 3345, ISYE/Math 3770, ME 3210 **, ME 3017, ME 2110 and the Design Elective

** Starting summer 2013 ME 3210 is a pre-req for ME 4182 (Capstone Design). ME 4210 was a co-requisite with ME 4182. To accommodate this change we will allow ME 3210 to be taken as a co-req with ME 4182 through spring 2014. Starting summer 2014, we will enforce ME 3210 as a pre-req to ME 4182.
- **Substitutions:** ME 3210 will be a direct substitute for ME 4210 regardless of your catalog year. The following is always true:

$$\text{ME 4210 (3)} = \text{ME 3210 (3)}$$

MATH 3770 to MATH 3670 Substitution and Transition

- **MATH 3770 to MATH 3670 Transition:** MATH 3770 (3 hours) will be offered through spring 2014. MATH 3670 (3 hours) will be offered starting summer 2014.
- **Pre-Requisite Changes:** No specific pre-reqs will change in the curriculum. MATH 3670 is a direct substitute for MATH 3770.
 - *MATH 3770 Pre-reqs:* MATH 2401
 - *MATH 3670 Pre-reqs:* MATH 2401
- **Substitutions:** MATH 3670 will be a direct substitute for MATH 3770 regardless of your catalog year. The following is always true:
$$\text{MATH 3670 (3) = MATH 3770 (3)}$$

2011-2012 BSME Curriculum versus the 2012-2013 BSME Curriculum: Summary

Below is a general summary of what changed from the old curriculum to the new curriculum.

- The science elective on the old curriculum is replaced by a 3 hour free elective (1000+ level) on the new curriculum.
- One ME elective on the old curriculum is replaced by a 3 hour free elective (1000+ level) on the new curriculum.
- An additional 3 hour free elective (2000+ level) is added to the new curriculum.
- Ethics options were changed to include many more classes on the new curriculum.
- The Major GPA is calculated differently.
- Two classes are changed on the new curriculum: ME 3015 is replaced by ME 3017 and ME 4053 is replaced by ME 4056.

General Comparison of Curricula		
Class	2011-2012 Curriculum	2012-2013 Curriculum
Total Credits	126	129
Science Elective	One of BIOL 1510, BIOL 1520, CHEM 1212K, PHYS 2213, CHEM 1311, EAS 1600 or EAS 1601	Not required
Free Electives	6 hours at the 2000+ level	15 hours required. This includes 6 hours at the 1000+ level and 9 hours at the 2000+ level.
Ethics	One of PHIL 3105, PHIL 3109, PHIL 3127, PHIL 4176, HTS 2084 or INTA 2030	A three hour course selected from the registrar's approved ethics list
Concentrations	No concentrations exist	Optional concentrations are available
Research/Special Problems as Class Credit	3 hours maximum of ME 4699 or ME 4903 can be used as ME Electives. Up to 6 hours of 2699/4699/4903 from any department can be used as free electives	No research can be used as an ME elective. Up to 6 hours of 2699/4699/4903 from any department can be used as free electives.
System Dynamics: ME 3015	ME 3015 (4 hours) or the approved substitution: ME 3017(3) + Free Elective (1)	ME 3017 (3 hours) or the approved substitution: ME 3015 (4)
ME Systems Lab: ME 4053	ME 4053 (2 hours) or the approved substitution: ME 4056 (3)	ME 4056 (3 hours) or the approved substitution: ME 4053 (2) + Free Elective (1)

2011-2012 BSME Curriculum versus the 2012-2013 BSME Curriculum: Details

The charts below compare the 2012-2013 to the 2011-2012 Curriculum. Students cannot combine requirements for the different catalog year; they must satisfy all of the requirements for one or the other. Students must meet all requirements for the catalog year they decide to follow. The only exceptions to this are the ME 3015 and ME 4053 class substitutions which are reviewed in the New Classes in the 2012-2013 Curriculum section of this document.

Comparison of GPA and Grade Requirements		
Class	2011-2012 Curriculum	2012-2013 Curriculum
Major GPA: Classes Included	All ME and COE classes	All ME and COE classes required by name and number plus ECE 3710, ECE 3741, ISYE 3025, MSE 2001, Design Elective and ME Elective. ME classes used for free electives are not include.
Major GPA: GPA Required	2.0 or higher (truncated GPA)	2.0 or higher (truncated GPA)
Major GPA: C or Better Rule	No additional requirements	All classes must be passed with a C or better with the exception of 9 hours which can be a D
Overall GPA Requirement	2.0 or higher (truncated GPA)	2.0 or higher (truncated GPA)
C or Better Rule	A grade of C or better is required in MATH 1501, MATH 1502, MATH 2401, MATH 2403	A grade of C-or-better is required in MATH 1501, MATH 1502, MATH 2401, MATH 2403, PHYS 2211, and COE 2001. The C or better is required before taking any other ME courses for which those courses are pre-requisites.
Pass/Fail Classes Allowed?	No pass/fail classes are allowed. All classes must be taken letter grade, including all electives.	No pass/fail classes are allowed. All classes must be taken letter grade, including all electives.

Comparison of Class Requirements		
Class	2011-2012 Curriculum	2012-2013 Curriculum
Total Credits	126	129
Science Elective	One of BIOL 1510, BIOL 1520, CHEM 1212K, PHYS 2213, CHEM 1311, EAS 1600 or EAS 1601	None required
System Dynamics: ME 3015	ME 3015 (4 hours) or the approved substitution listed in this document	ME 3017 (3 hours) or the approved substitution listed in this document
ME Systems Lab: ME 4053	ME 4053 (2 hours) or the approved substitution listed in this document	ME 4056 (3 hours) or the approved substitution listed in this document
ME Electives: Hours Required	6 hours required	3 hours required
ME Electives: Class Requirements	Any ME course at the 3000-level or above, excluding ME 3141, 3720, 3743, 3744, 4741, 4742, & 4753	Any ME course at the 3000-level or above, excluding ME 3141, 3720, 3743, 3744, 4699, 4741, 4742, 4753 & 4903
ME Elective: Approved Substitutions	Students who complete an ME approved minor can substitute minor classes for ME electives	No substitutions allowed for the ME elective
Research/Special Problems as ME Electives	3 hours maximum of ME 4699 or ME 4903 can be used as a ME Elective	No research or special problem from any department can be used as an ME elective
Free Electives: Hours Req'd	6 Hours Required	15 Hours Required
Free Electives: Level Requirements	6 hours at the 2000 level or above	6 hours at the 1000 level or above plus 9 hours at the 2000 level or above *
Research/Special Problems as Free Electives	6 hours maximum of 2699/4699/4903. The course can be from any department.	6 hours maximum of 2699/4699/4903. The course can be from any department.
Minor Classes as Free Electives	Minor classes can be used for free electives as long as they meet the free elective level requirements	Minor classes can be used for free electives as long as they meet the free elective level requirements
Ethics	One of PHIL 3105, PHIL 3109, PHIL 3127, PHIL 4176, HTS 2084 or INTA 2030	A three hour course selected from the registrar's approved ethics list

Concentration Areas	No concentration areas exist	Optional concentration areas are available
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* Notes: Four of the nine 2000 level free electives may be satisfied with one of: BIOL 1510, BIOL 1520 or CHEM 1212K