New Accelerated Program Development Form
Bachelor's to Master's

Accelerated Programs allow academically qualified students to complete an undergraduate Bachelor's degree and a graduate master's degree on an accelerated timeline, graduating sooner than in traditional programs.

Development Process:
1) Review the Accelerated Program Guidelines
2) Contact the Undergraduate Studies' office or Graduate School for consultation
3) Complete this form and create the Catalog Copy
4) Submit through internal college processes for approval
5) Submit to Undergraduate Council for review and approval
6) Submit to Graduate School for Graduate Council approval

For questions, contact either Undergraduate Studies' cynthia@usf.edu or the Graduate School at cdh@usf.edu

<table>
<thead>
<tr>
<th>APPROVALS</th>
<th>Approval of the Accelerated Degree Program: BS/MS in the program (Major) of Mechanical Engineering/Biomedical Engineering (e.g. BS/MS in Biology)</th>
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</thead>
<tbody>
<tr>
<td>Name (Printed)</td>
<td>Signature</td>
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<tr>
<td>Faculty Name and Email</td>
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<tr>
<td>Dr. Robert Frisina</td>
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<tr>
<td>Dept. Chair, ME</td>
<td>Dr. Rajiv Dubey</td>
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<tr>
<td>Dept. Chair, Medical Engineering</td>
<td>Dr. Robert Frisina</td>
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<td>School Committee Chair or other required approval (if applicable)</td>
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<td>College Committee Chair</td>
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<td>College Dean/designees, EN</td>
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<td>Undergraduate Council (UGC) Chair/designees</td>
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<tr>
<td>Undergraduate Studies' Dean/designees</td>
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<td>Graduate Council (GC) Chair/designees</td>
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<tr>
<td>Graduate School Dean/designees</td>
<td>Dr. Ruth Bahr</td>
</tr>
<tr>
<td>ACCELERATED PROGRAM INFORMATION</td>
<td>UNDERGRADUATE</td>
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<tr>
<td>Degree’s (e.g. B.A., B.S., M.A., M.S., M.U.R.P., etc.)</td>
<td>BSME</td>
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<tr>
<td>Program Names (a.k.a. “Major”) (e.g. Biology, Math, etc.)</td>
<td>Mechanical Engineering</td>
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<td>College(s)</td>
<td>Engineering</td>
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<td>Department(s) (if applicable)</td>
<td>Mechanical Engineering</td>
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<td>Proposed Effective Date for first admissions</td>
<td>August 2017</td>
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**Program Description** (provide a brief description of the program. Do not include requirements, just what the program is about, highlights, etc.)

This program would allow a Mechanical engineering major to double count 3 ME electives when they take 3 master level BME courses (6000 level and up). Therefore, entering the BME Master’s program as an accelerated student. see specifics below

**Is this a single pathway option (e.g. thesis only) or a multi-path option (e.g. thesis and non-thesis, etc.)?**

This is a multi-path option, thesis or non-thesis.

### Curriculum Requirements

**GPA Requirements**

Programs must establish a minimum undergraduate GPA requirement of at least 3.33 overall and a minimum GPA requirement of 3.50 in the major, having taken a minimum of 15 hours in the undergraduate major, for students to be admitted to an accelerated program. **Note what your Program requirements will be (may be more restrictive, but not less than what’s noted above)**

Students must have a minimum of a “B” (3.00) in each graduate course. Consequences for not obtaining at least a “B” in each graduate course must be noted in the Departmental Accelerated Program requirements. **Note what the Program’s policy will be for students who earn less than a “B” in a graduate course (University Policy allows for courses with “C” or higher count toward graduate degree requirements, with an overall and program GPA requirement of 3.00)**

**Policy for where a student earns less than a “B” in a graduate Course:** The new accelerated program will allow 1 grade below a B (B+, C+, C) in 1 of the double counted courses. The student must still maintain a 3.0 GPA to remain in good standing in the BME Master’s Program.

**List courses to be shared**

Typically, up to twelve (12) hours of graduate credit may be shared between the graduate and undergraduate degree. Although, with Graduate Council and Graduate School approval, programs may offer accelerated programs with more shared credits.

List the undergraduate courses that will be replaced by graduate courses

**Ex:**

- BIO 2100, satisfied by BIO 6245
- BIO 2200, satisfied by BIO 6600

**List courses to be replaced by the 3 master level BME courses would be 3 Technical/Design/Science Electives.**

1) Year 4: Fall semester: ME Technical/Design/Science Elective
2) Year 4: Spring semester: ME Technical/Design/Science Elective
3) Year 4: Spring semester: ME Technical/Design/Science Elective

**Program of Study**

Attach a representative example. Be certain it matches the degree

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*Accelerated Program Proposal Development Form GS – CHC-2-28-12*
Programs must complete a Program of Study, develop a plan for academic advising, and tracking of students, including notation of potential financial aid impact.

**PROGRAM OF STUDY**

Note the requirements for both undergraduate and graduate programs, as published in the respective Catalog.

**Undergraduate Degree Requirements:**

List the current degree requirements for the Undergraduate Degree. **Total minimum hours: 119**

**Total Major Hours: 104 Hours**

Note: Department prefers students take EGN 3615 to fulfill one of the FKL Social and Behavioral Sciences Elective requirement, otherwise it will fulfill one of the Upper-Level (Technical/Design) Departmental Electives.

**Major Core Courses - 92 Hours**

**Math and Science (27 credit hours)**

- MAC 2281 Engineering Calculus I or MAC 2311 Calculus I
- MAC 2282 Engineering Calculus II or MAC 2312 Calculus II
- MAC 2283 Engineering Calculus III or MAC 2313 Calculus III
- MAP 2302 Differential Equations
- CHS 2440 General Chemistry for Engineers or CHM 2045 General Chemistry I
- CHS 2440L General Chemistry for Engineers Laboratory or CHM 2045 General Chemistry I Laboratory
- PHY 2048 General Physics I
- PHY 2048L General Physics I Laboratory
- PHY 2049 General Physics II
- PHY 2049L General Physics II Laboratory

**Basic Engineering (19 credit hours)**

- EGN 3000 Foundations of Engineering
- EGN 3000L Foundations of Engineering Laboratory
- EGN 3311 Statics
- EGN 3321 Dynamics
- EGN 3615 Engineering Economics with Social and Global Implications
- EGN 3365 Materials Engineering I
- EGN 3373 Introduction to Electrical Systems I
- EGN 3343 Thermodynamics I
- EGN 3443 Probability & Statistics for Engineers

**Specialization (43 credit hours)**

- EML 3035 Programming Concepts for Mechanical Engineers
- EML 3500 Mechanics of Solids
- EML 3022 Computer Aided Design and Engineering (CAD)
- EML 3041 Computational Methods
- EML 3262 Kinematics and Dynamics of Machinery
- EML 3701 Fluid Systems
- EML 4325 Mechanical Manufacturing Processes
• EML 3303 Mechanical Engineering Lab I
• EML 4123 Heat Transfer
• EML 4501 Machine Design
• EML 4106C Thermal Systems and Economics
• EML 4220 Vibrations
• EML 4302 Mechanical Engineering Laboratory II
• EML 4312 Mechanical Controls
• EML 4551 Capstone Design (CPST)

Technical Writing (3 credit hours)

• ENC 3246 Communication for Engineers (WRIN)

Major Elective Courses - 12 Hours

12 hours of Upper-Level Departmental Electives (Technical Design Elective) from the list below:

• BMF 4332 Cell and Tissue Engineering
• BMF 4440 Introduction to Bioastronautics
• EAS 4121 Hydro and Aerodynamics
• EGN 4366 Materials Engineering II
• EML 4141 Thermal Management of Electronic Systems
• EML 4230 Introduction to Composite Materials
• EML 4246 Tribology
• EML 4310 Microcontrollers
• EML 4326 Advanced Materials Processing
• EML 4414 Power Plant Engineering
• EML 4419 Propulsion I
• EML 4421 Internal Combustion Engines
• EML 4450 Alternative & Renewable Energy
• EML 4503 Sustainable Design and Materials
• EML 4552 Senior Mechanical Design
• EML 4575 Principles of Fracture Mechanics
• EML 4593 Haptics
• EML 4601 Air Conditioning Design
• EML 4702 Fluid Dynamics II
• EML 4703 Mechanics of Compressible Fluids
• EML 4905 Independent Study
• EML 4930 Special Topics in Mechanical Engineering
• OSE 4601 Optical Product Technology

Shared: 2/5 of the required courses replaces 6 hours of undergrad technical electives

Graduate Degree Requirements:

List the current degree requirements for the Graduate Degree as listed in the Graduate Catalog, highlighting which Graduate Courses will be applied to the undergraduate degree (recommend to copy/paste as presented). Copy should include:

- Total Program Minimum Hours Required
- Specific course requirements, noting which graduate courses will replace which undergraduate courses.
- Concentration Requirements (if applicable)
- Elective Requirements
- Comprehensive Exam Requirements (if the thesis is used in lieu of the exam, note this accordingly)
- Is a thesis, special-project, or internship required?
- Total number of thesis hours required (if applicable)
- Other requirements
- What the policy is for situations where a student earns less than a “B” in a graduate class.

Accelerated Program Proposal Development Form
GS – CHC-2-28-12
**Degree: Master of Science in Biomedical Engineering (M.S.B.E.)**

- Program (Major): Biomedical Engineering (EBI)
- CIP Code: 14.0501
- Major/College Code: EBMEN
- Total Program Hours: 30
- Specific Course Requirements - 5 electives, and these 5 required courses:
  - GMS 6440 Basic Medical Physiology or BME 6409 Engineering Physiology
  - GMS 6605 Basic Medical Anatomy
  - PHC 6051 Biostatistics II
  - BME 6000 Biomedical Engineering I
  - BME 6931 Biomedical Engineering II


Thesis is not required for non-Thesis Masters students

6 credits of Thesis required, for Thesis students

For the BME Master's program, students can get a C, C+ or B-, as long as their GPA stays above 3.0. GPA below 3.0 results in Probation, or eventually can result in Dismissal.

Note 1: Any 2 or 3 of the BME courses listed above or the electives can be double-counted.

Note 2: This proposed Mechanical Engineering Major/BME accelerated program is modeled after our current, approved BME accelerated programs.

**Proposed Accelerated Program of Study**

1) A Mechanical Engineering Major would pursue the normal 8 semester sequence attached from the current USF Undergrad Catalog, but 3 of the ME Department Technical/Design/Science Elective courses would be replaced with 3 BME Masters, 6000 level and up, courses which are double counted. Then, upon their BS graduation, they would complete the USF Accelerated Program Progression Form, and enter the BME Master's Program. They would have 7 graduate courses remaining, so they can finish their BME Masters in only 2 semesters or 1 calendar year (Instead of the usual 3 semesters); and save tuition dollars on 3 graduate level courses.

2) Academic Advising: Once declaring an interest in the Accelerated Mechanical Engineering/BME Program, the student would have an undergrad Mechanical Engineering Advisor and a BME Program Advisor (currently the BME Program Director).

3) Tracking of Students: The Accelerated Student will meet with both the undergrad and BME Advisors each semester to ensure successful completion of the Program requirements.

4) Possible Impact on Financial Aid: The regular undergrad financial aid is generally not affected. When the student is planning to graduate with the BS, the financial aid can be affected after that. When completing the Application Form for the Accelerated Mechanical Engineering/BME Program, the applicant will be required to take their entire course/semester plan to the USF Financial Aid office and discuss the financial aid implications with them in detail.

Thank you for considering our proposal.