
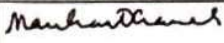
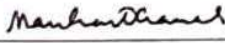
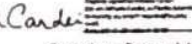
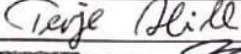
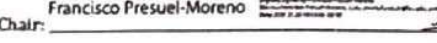
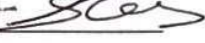


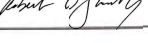


|  |   |  |                |             |
|--|---|--|----------------|-------------|
| <br><b>FLORIDA ATLANTIC UNIVERSITY</b>  | <h2 style="margin:0;">New Combined Degree Program Request</h2>  | UUPC Approval _____<br>UGPC Approval _____<br>UFS Approval _____<br>Banner Posted _____<br>Catalog _____ |                |             |
| <b>New Combined Degree Program Request</b><br>BA,BS in Biological and Physical Sciences/MS in Mechanical Engineering<br>Proposed Program: _____ CIP: _____ Effective Date (Term/Year): <u>Fall</u> / <u>2021</u> (e.g. Fall/2020)                |   |  |                |             |
| <b>Proposed Combined Program Information</b>   | <b>Undergraduate</b>  | <b>Graduate</b>  |                |             |
| Degree Level (e.g. B.A., B.S., M.A., M.S., etc.)   | B.A. or B.S.  | MS   |                |             |
| Program Name (e.g. Physics, Engineering, etc.)   | Biological and Physical Sciences  | Mechanical Engineering   |                |             |
| College  | Wilkes Honors College   | Engineering and Computer Science   |                |             |
| Department   | NA  | Ocean and Mechanical Engineering   |                |             |
| Program Description (provide a brief description of the program, including thesis or non-thesis option)  | This is a combined program with B.A. or B.S. in Biological and Physical Sciences to MS in Mechanical Engineering. Students complete the prerequisite courses while pursuing the bachelor's degree. Up to 9 graduate credits can be double-counted in the bachelor and MS  |  |                |             |
| <b>Curriculum Requirements</b>   |   |  |                |             |
| <b>GPA Requirements:</b> Departments must establish a minimum undergraduate GPA for students to be admitted to a combined program. <i>Note: Please attach explanation.</i><br><br>Cumulative GPA of at least 3.25 at the end of the junior year. | <b>List courses to be shared:</b> Up to twelve (12) credit hours of graduate courses (5000 level or above course work) may be shared between the graduate and undergraduate degree for a combined program. <i>Note: Please attach explanation:</i> <ul style="list-style-type: none"> <li>Academic justification for shared credits and catalog language</li> <li>List the undergraduate course that will be replaced by graduate courses.</li> </ul> |  |                |             |
| Faculty Submitting Request   | <b>Name</b>   | <b>Signature</b>   | <b>Email</b>   | <b>Date</b> |
|  | Dr. Manhar Dhanak   |                      | dhanak@fau.edu | 1/21/2021   |
| <b>Approved by</b>   |   | <b>Date</b>  |                |             |
| Department Chair:   | William O'Brien   | 1/21/2021  |                |             |
| College Dean:   |    | 1/22/2021      2/19/2021   |                |             |
| College Curriculum Chair:   |    | 1/22/2021      2/19/2021   |                |             |
| UUPC Chair: _____  |   |  |                |             |
| Undergraduate Studies Dean: _____  |   |  |                |             |
| UGPC Chair:   |   | Apr 4, 2021  |                |             |
| UGC Chair:    |   | Apr 5, 2021  |                |             |
| Graduate College Dean:    |   | Apr 5, 2021  |                |             |
| UFS President: _____   |   |  |                |             |
| Provost: _____   |   |  |                |             |

Email this form and supporting documents to [mjennin@fau.edu](mailto:mjennin@fau.edu) seven (7) business days before the UUPC meeting.

For questions, contact the Graduate College at [ugpc@fau.edu](mailto:ugpc@fau.edu)

Created: 09/04/2018

## Academic Justification

The Wilkes Honors College (WHC) and the College of Engineering and Computer Science (COECS) propose a new combined program, where students will complete the BA or BS degree in Biological and Physical Sciences in the WHC and then continue with an MS degree in Mechanical Engineering in the COECS. The program requires at least 120 credits in the bachelor's degree and at least 30 credits in the MS degree. The students will take the prerequisite courses while pursuing the bachelor's degree, ensuring a smooth transition into the MS in Mechanical Engineering program.

The combined program preserves and enhances the quality of both degrees. Students in any concentration in the WHC can apply to this program, but they will have to take prerequisite courses, see Table 1. This combined program is open to talented students who have a cumulative FAU GPA of 3.25 or better, and an average GPA of 3 or better in all courses listed in Table 1. Students can apply to the MS program at the end of their junior year (e.g. after completing at least 90 credits). Bachelor students who take graduate courses (5000 – level or higher) in the department of Ocean and Mechanical Engineering (OME) may count up to 9 credits of approved graduate coursework (5000 level or higher) toward both their bachelor's and master's degrees as long as the combined program totals a minimum of 150 credits. These graduate courses will replace the upper-level elective courses in the bachelor's program.

**Table 1. Prerequisite courses to be completed during the bachelor's degree**

| <b>MS in Mechanical Engineering</b>                                    |                         |                                     |
|--|-------------------------|-------------------------------------|
| <b>Mechanical Engineering prerequisites</b>                            | <b>College taken in</b> | <b>Prerequisites</b>                |
| MAC 2311 Calculus with Analytic Geometry 1                             | HC or Cos               |                                     |
| MAC 2312 Calculus with Analytic Geometry 2                             | HC or CoS               | MAC 2311                            |
| MAC 2313 Calculus with Analytic Geometry 3                             | HC or CoS               | MAC 2312                            |
| MAP 3305 Engineering Mathematics or<br>MAP 2302 Differential Equations | HC or CoS               | MAC 2312                            |
| EGN 3311 Statics   | COECS online            | PHY 2048                            |
| EGN 3321 Dynamics  | COECS online            | EGN 3311                            |
| EGN 3331 Strength of Materials   | COECS online            | EGN 3311                            |
| EGN 3343 Engineering Thermodynamics                                    | COECS online            | PHY 2048 or equivalent,<br>MAC 2312 |
| EML 3701 Fluid Mechanics   | COECS online            | EGN 3311, EGN 3343                  |

## CATALOG SPECIFICATIONS

### **B.A or B.S. in Biological and Physical Sciences to M.S. in Mechanical Engineering Degree Program**

The Wilkes Honors College (WHC) and the College of Engineering and Computer Science (COECS) offer a combined Bachelor of Arts or Bachelor of Science in Biological and Physical Sciences to Master of Science in Mechanical Engineering degree program. The Bachelor of Arts or Bachelor of Science degree will be completed and received from the WHC. Students will do the Master of Science in Mechanical Engineering in the Department of Ocean and Mechanical Engineering (OME) at FAU and will receive the master's degree from the COECS.

Students may count up to 9 credits of approved graduate coursework (5000 level or higher) toward both their bachelor's and master's degrees. These graduate courses will replace the upper-level elective courses in the bachelor's program. The combined program totals a minimum of 150 credits:

1. The student must take a minimum 120 credits for the bachelor's degree; and
2. The student must take a minimum of 30 credits in 5000 level or higher courses for the master's program.

Students must complete the prerequisite coursework for the master's degree while pursuing the bachelor's degree at the WHC. This combined program provides an attractive way for students to continue their graduate work. Students complete the undergraduate program first. The combined program can be completed in approximately five years.

#### **Admission Requirements**

The GRE requirement is waived for this combined program. To be eligible for the combined program, the bachelor's students in the WHC should:

1. Have a cumulative FAU GPA of 3.25 or better at the end of their junior year. Note that the cumulative FAU GPA of at least 3.25 must be maintained until the completion of the bachelor's degree in the WHC.
2. Formally apply to the combined program, completing the admissions process at least one semester prior to the beginning of the M.S. portion of their program.

Students in the combined program must maintain continuous enrollment to remain in good standing. Students must also meet all the degree requirements of the graduate program they have chosen, including prerequisite courses.

#### **Degree Requirements**

To be eligible for the combined B.A or B.S. in Biological and Physical Sciences to M.S. in Mechanical Engineering Degree Program, students must fulfill the following requirements:

1. Completion of the requirements for the B.A or B.S. in Biological and Physical Sciences in the WHC, and other requirements stipulated by the University and College
2. Completion of all requirements for the M.S. in Mechanical Engineering program in the OME department, on either the thesis or non-thesis option.

**Mechanical Engineering Flightplan - BA or BS degree in Biological and Physical Sciences (e.g. Interdisciplinary Mathematics or Physics)**

|                                     |         |
|-------------------------------------|---------|
| Enter with credit in:               | credits |
| ENC 1101, ENC 1102                  | 6       |
| POS 1041                            | 3       |
|                                     |         |
| <b>Year One (including summer):</b> |         |
| IDS 1022 Forum                      | 1       |
| CHM 2045/L                          | 4       |
| EGN 1002                            | 3       |
| MAC 2311                            | 4       |
| COP 2000/2220                       | 3       |
| Hum-A                               | 3       |
| SBA-B                               | 3       |
| MAC 2312                            | 4       |
| STA 2023                            | 3       |
|                                     |         |
| <b>Year Two (including summer):</b> |         |
| GC-A                                | 3       |
| Hum-B                               | 3       |
| PHY 2048/L                          | 5       |
| PHY 2049/L                          | 5       |
| MAC 2313                            | 4       |
| SPN 1120                            | 4       |
| EGN 3311                            | 3       |
| SPN 1121                            | 4       |
|                                     |         |
| <b>Year Three:</b>                  |         |
| 2 Team-taught courses               | 4       |
| Humanities Distribution Elective    | 3       |
| GC-B                                | 3       |
| MAP 3305 or MAP 2302                | 3       |
| EGN 3321                            | 3       |
| EGN 3331                            | 3       |
| EGN 3343                            | 3       |
| Upper level elective                | 3       |
| Upper level elective                | 3       |
| Internship (summer)                 | 3       |

|                                      |                              |
|--------------------------------------|------------------------------|
|                                      |                              |
| <b>Year 4</b>                        |                              |
| Honors Thesis                        | 6                            |
| Team-taught course                   | 1                            |
| Social Science Distribution Elective | 3                            |
| EML 3701                             | 3                            |
| Upper level elective                 | 3                            |
| Upper level elective                 | 3                            |
| Upper level elective                 | 3                            |
| Upper level elective                 | 3                            |
|                                      |                              |
|                                      | 124                          |
|                                      | (includes 9 credits from AP) |