CEAS. 24-046-MAE

REQUEST TO COLLEGE CURRICULUM COMMITTEE FOR CURRICULAR IMPROVEMENTS

DEPARTMENT: Mechanical and Aerospace Engineering **PROPOSED EFFECTIVE SEMESTER: Fall 2015**
COLLEGE: Engineering & Applied Sciences
PROPOSED IMPROVEMENTS

Academic Program
- ☐ New degree*
- ☐ New major*
- ☐ New curriculum*
- ☐ New concentration*
- ☐ New certificate
- ☐ New minor
- ☐ Revised major
- ☐ Revised minor
- ☐ Admission requirements
- ☐ Graduation requirements
- ☐ Deletion ☐ Transfer
- ☐ Other (explain**)

Substantive Course Changes
- ☐ New course
- ☐ Pre or Co-requisites
- ☐ Deletion (required by others)
- ☐ Course #, different level
- ☒ Credit hours
- ☐ Enrollment restriction
- ☐ Course-level restriction
- ☐ Prefix ☐ Title and description (attach current & proposed)
- ☐ General education (select one)

Not Applicable

- ☐ Other (explain**)

Misc. Course Changes
- ☒ Title
- ☐ Description (attach current & proposed)
- ☐ Deletion (not required by others)
- ☐ Course #, same level
- ☐ Variable credit
- ☐ Credit/no credit
- ☐ Cross-listing
- ☐ COGE reapproval
- ☐ Other (explain**)

**** Other:**

Title of degree, curriculum, major, minor, concentration, or certificate:
Existing course prefix and #: AE4660 **Proposed course prefix and #: Credit hours:3**
Existing course title: Aero Propulsion Systems
Proposed course title: Aerospace Propulsion I
Existing course prerequisite & co-requisite(s):
Proposed course prerequisite(s)
If there are multiple prerequisites, connect with "and" or "or". To remove prerequisites, enter "none."
Proposed course co-requisite(s)
If there are multiple corequisites, they are always joined by "and."
Proposed course prerequisite(s) that can also be taken concurrently:
Is there a minimum grade for the prerequisites or corequisites?
Major/minor or classification restrictions:
For 5000 level prerequisites & corequisites: Do these apply to: (circle one) undergraduates graduates both
Specifications for University Schedule of Classes:
a. Course title (maximum of 30 spaces): AE4660 Aero Propulsion Systems
b. Multi-topic course: ☐ No ☐ Yes
c. Repeatable for credit: ☐ No ☐ Yes
d. Mandatory credit/no credit: ☐ No ☐ Yes
e. Type of class and contact hours per week (check type and indicate hours as appropriate)
1. ☐ Lecture 3. ☒ Lecture/lab/discussion 3 5. ☐ Independent study
2. ☐ Lab or discussion 4. ☐ Seminar or ☐ studio 6. ☐ Supervision or practicum

CIP Code (Registrar's use only):

Chair/Director [signature] Date 10/7/2014

Chair, College Curriculum Committee Date

Dean Date: Graduate Dean: Date

Curriculum Manager: Return to dean ☐ Date Forward to: Date

Chair, COGE/ PEB / FS President Date

FOR PROPOSALS REQUIRING GSC/USC REVIEW:

* ☐ Approve ☐ Disapprove	Chair, GSC/USC	Date
* ☐ Approve ☐ Disapprove	Provost	Date

1. **Explain briefly and clearly the proposed improvement.**

   This proposed improvement is to change (a) the course title from **Aero Propulsion Systems** to **Aerospace Propulsion I** and (b) the course credit hours from four (4) to three (3).

2. **Rationale. Give your reason(s) for the proposed improvement. (If your proposal includes prerequisites, justify those, too.)**

   With the recently approved and effective change of the program name from Aeronautical Engineering to Aerospace Engineering, a new course AE4670 Aerospace Propulsion Systems, 3 credit hours, has been added to the program curriculum. Since both courses are required courses in the Aerospace Engineering curriculum, the proposed name change provide a clear identification of this required course in the area of aerospace propulsion, and the order in which the course shall be take. The change of the credit hours for AE4660 Aero Propulsion Systems reflects the need to elimnate the duplicative materials that are more appropriately covered in the new space propulsion course.

3. **Effect on other colleges, departments or programs. If consultation with others is required, attach evidence of consultation and support. If objections have been raised, document the resolution. Demonstrate that the program you propose is not a duplication of an existing one.**

   None.

4. **Effect on your department's programs. Show how the proposed change fits with other departmental offerings.**

   This change will have a positive effect on the Department as it will eliminate redundancy and focus resources used.

5. **Effects on enrolled students: Are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time. If a required course will be offered during summer only, provide a rationale.**

   No negative effects.

6. **Student or external market demand. What is your anticipated student audience? What evidence of student or market demand or need exists? What is the estimated enrollment? What other factors make your proposal beneficial to students?**

   The student will pay one credit hour less of tuition with no change in the knowledge offered.

7. **Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? How often will course(s) be offered? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? (Attach additional pages, as necessary.)**

   The change will reduce classroom hour demand in the engineering building and more focused use of teaching resources.

8. **General education criteria. For a general education course, indicate how this course will meet the criteria for the area or proficiency. (See the General Education Policy for descriptions of each area and proficiency and the criteria. Attach additional pages as necessary. Attach a syllabus if (a) proposing a new course, (b) requesting certification for baccalaureate-level writing, or (c) requesting reapproval of an existing course.)**

   Not Applicable.

9. **List the learning outcomes for the proposed course or the revised or proposed major, minor, or concentration. These are the outcomes that the department will use for future assessments of the course or program.**

   There is no effect on student learning outcomes in the area of propulsion in the aerospace engineering program.

10. **Describe how this curriculum change is a response to assessment outcomes that are part of a departmental or college assessment plan or informal assessment activities.**

Not applicable.

11. **(Undergraduate proposals only) Describe, in detail, how this curriculum change affects transfer articulation for Michigan community colleges. For course changes, include detail on necessary changes to transfer articulation from Michigan community college courses. For new majors or minors, describe transfer guidelines to be developed with Michigan community colleges. For revisions to majors or minors, describe necessary revisions to Michigan community college guidelines. Department chairs should seek assistance from college advising directors or from the admissions office in completing this section.**

The current catalog description is:

AE 4660 - Aeronautical Propulsion Systems

Thermodynamics and fluid dynamics of aeronautical rotating turbomachines, including axial turbines, compressors, mixed flow, and centrifugal machines. Analytical and computational methods will be used to design and determine performance of aircraft propulsion systems.

Prerequisites & Corequisites: Prerequisites: ME 2320; and either (ME 3560 or AE 3710).

Credits: 4 hours

Restrictions: This course restricted to majors in aerospace engineering or aeronautical engineering.

When Offered: Fall

The proposed catalog description is:

AE 4660 - Aerospace Propulsion I

Thermodynamics and fluid dynamics of aeronautical rotating turbomachines, including axial turbines, compressors, mixed flow, and centrifugal machines. Analytical and computational methods will be used to design and determine performance of aircraft propulsion systems.

Prerequisites & Corequisites: Prerequisites: ME 2320; and either (ME 3560 or AE 3710).

Credits: 3 hours

Restrictions: This course restricted to majors in aerospace engineering.

When Offered: Fall