May 11, 2011

MEMORANDUM

TO: Darryll Pines  
    Dean, A. James Clark School of Engineering

FROM: Elizabeth Beise  
       Associate Provost for Academic Planning and Programs

SUBJECT: Proposal to modify the curriculum of the PhD in Aerospace Engineering (PCC log no. 10048)

At its meeting on May 6, 2011, the Senate Committee on Programs, Curricula and Courses approved your proposal to modify the curriculum of the PhD in Aerospace Engineering. A copy of the approved proposal is attached.

The changes are effective Fall 2011. The School should ensure that the changes are fully described in the Graduate Catalog and in all relevant descriptive materials, and that all advisors are informed.

MDC/

Enclosure

cc: David Salness, Chair, Senate PCC Committee  
    Sarah Bauder, Office of Student Financial Aid  
    Reka Montfort, University Senate  
    Erin Howard, Data Administration  
    Donna Williams, Institutional Research & Planning  
    Anne Turkos, Archives  
    Linda Yokoi, Office of the Registrar  
    Thomas Castonguay, Graduate School  
    William Fourney, A. James Clark School of Engineering  
    Mark Lewis, Aerospace Engineering
THE UNIVERSITY OF MARYLAND, COLLEGE PARK
PROGRAM/CURRICULUM/UNIT PROPOSAL

- Please email the rest of the proposal as an MS Word attachment to pcc-submissions@umd.edu.
- Please submit the signed form to the Office of the Associate Provost for Academic Planning and Programs, 1119 Main Administration Building, Campus.

College/School:
Please also add College/School Unit Code-First 8 digits: 01203200
Unit Codes can be found at: https://bypprod.umd.edu/html_Report_units.htm

Department/Program: Aerospace Engineering
Please also add Department/Program Unit Code-Last 7 digits: 1320301

Type of Action (choose one):

- Curriculum change (including informal specializations)
- Renaming of program or formal Area of Concentration
- Addition/deletion of formal Area of Concentration
- Suspend/delete program

Italics indicate that the proposed program action must be presented to the full University Senate for consideration.

Summary of Proposed Action:
Reduction in the coursework credit requirement from 42 to 36 for ENAE Ph.D. program

APPROVAL SIGNATURES - Please print name, sign, and date. Use additional lines for multi-unit programs.

1. Department Committee Chair Sung W. Lee, Chair, Graduate Committee, Aere. Engr.
   [Signature] Feb 15, 2011

2. Department Chair Mark J. Lewis Dept. of Aerospace Engr.
   [Signature] 2/15/2011

3. College/School PCC Chair David Bigio, Dept. of Mechanical Engr.
   [Signature] 2/15/2011

4. Dean Darryll Pines, Dean, A.J. Clark School of Engineering
   [Signature]

5. Dean of the Graduate School (if required)
   [Signature] 7/13/11

6. Chair, Senate PCC
   [Signature] 5/6/11

7. University Senate Chair (if required)

8. Senior Vice President for Academic Affairs & Provost
   [Signature] 5/11/11
1. Proposed change in minimum coursework requirements for PhD degree

The Department of Aerospace Engineering proposes that minimum coursework requirements for PhD degree be reduced from current 42 credits to 36 credits to give students more time to devote to research:

Current requirements (42 credits):
   - Major – 18 credits
   - Minor – 6 credits
   - Math/Science – 9 credits
   - Other – 9 credits

Proposed requirements (36 credits):
   - Major – 18 credits
   - Minor – 6 credits
   - Math/Science – 9 credits
   - Other – 3 credits

Note that the requirements for major, minor and math/science courses remain unchanged. Also, all other requirements on qualifying exams, research and dissertations remain unchanged.

2. Background

Following informal discussions among the faculty members in the Department of Aerospace Engineering, the Graduate Committee (Drs. Lee, Leishman, Sedwick and Yu) formulated a proposal to change the minimum course requirements from current 42 credits to 36 credits. The proposed change is to allow students more time to devote to research, with the expectation that this will enhance the quality of research products. This proposed change is also consistent with the departmental goal of raising the national ranking of the graduate program to 5th place from the current ranking of 9th place as a part of the strategic plan of the department.

The proposal was presented to the entire faculty for review and comments in October 2010. Subsequently, a faculty meeting was held November 11th to discuss the proposed change. Some of the faculty who could not attend the meeting provided written comments. As expected there exist philosophical differences among the faculty on how to best educate PhD students. Some faculty believe that more time on research is a better way while others believe that requiring more coursework will help students get better prepared for research.

Faculty voted on the proposed change in December 2010. The result was 18 in favor of the change and 3 against.
The proposed change will allow us to accommodate the views held by a large number of faculty members who believe more time on research is better. Note that the proposed change is for minimum course requirements. A faculty may require that his or her students take more courses if the student lacks necessary background.

Course requirements (in number of courses) for PhD in aerospace engineering at peer and leading institutions

Note: Credits per course vary from school to school. Accordingly, the number of courses is listed here for comparison with our current and proposed requirements.

MIT: 10 courses including MS
Purdue: 13 courses including MS
UIUC: 14 courses including MS
Georgia Tech: 16 courses including MS
**University of Maryland**: 14 (current), 12 (proposed)

Coursework requirements (in credits) in all departments of the A.J. Clark School of Engineering

Aerospace Engineering – 42 (36 proposed)
Bioengineering – 27 (including 2 credit rotation and 1 credit seminar)
Chemical and Biomolecular Engineering – 27
Civil and Environmental Engineering – None after MS
Electrical and Computer Engineering – 36
Fire Protection Engineering – No PhD program
Material Science and Engineering – 27 (including 3 credit seminar)
Mechanical Engineering – 36

Note: Our current requirement of 42 credits is the highest in the A.J. Clark School. This change would reduce the course requirement to be on par with Mechanical Engineering, and Electrical and Computer Engineering, which are the two programs with the greatest level of required coursework after Aerospace Engineering.

3. Implementation

The proposed change will be implemented in the semester immediately following its approval. Students who have submitted coursework plans under the old requirements will be given the option of submitting revised plans under the new requirements in consultation with their advisors.