

DEPARTMENT Aeronautics & Astronautics

DATE SUBMITTED 06/10/02

DATE EFFECTIVE Fall 2002 3

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

PURPOSE

- | | |
|---|---|
| <input type="checkbox"/> 1. Deletion of a course | <input type="checkbox"/> 8. Change in semesters offered |
| <input type="checkbox"/> 2. New course with supporting documents | <input type="checkbox"/> 9. Change in course credit/type |
| <input type="checkbox"/> 3. Add existing course offered at another campus | <input type="checkbox"/> 10. Change in course attributes |
| <input type="checkbox"/> 4. Change in course number at same level | <input type="checkbox"/> 11. Change in instructional hours |
| <input type="checkbox"/> 5. Downgrading of course level | <input type="checkbox"/> 12. Change in prerequisites |
| <input type="checkbox"/> 6. Upgrading of course level | <input checked="" type="checkbox"/> 13. Change in description of course content |
| <input checked="" type="checkbox"/> 7. Change in course title | <input type="checkbox"/> 14. Transfer of course from one dept. to another |

EXISTING:

PROPOSED:

SEMESTERS OFFERED

Subject Abbreviation AAE Subject Abbreviation _____
Course Number 558 Course Number _____

Check All That Apply.

Summer Fall Ag Winter Spring

Proposed Title Finite Element Methods in Aerospace Structures

Variable Title Yes No

Abbreviated Title Fin El Meth Aero Struc

Abbreviated title will be entered by the Office of the Registrar if omitted. (22 CHARACTERS ONLY)

CROSS LISTED COURSES

CREDIT TYPE

COURSE ATTRIBUTES: Check All That Apply.

1. Fixed Credit: Cr. Hrs. 3
2. Variable Credit Range:
Minimum Cr. Hrs. _____
(Check One) To Or
Maximum Cr. Hrs. _____
3. Equivalent Credit: Yes No
4. Thesis Credit: Yes No

1. Pass/Not Pass Only
2. Repeatable for Credit
3. Available for Credit by Examination
4. Designator Required
5. Special Fees
6. Approval Required for Enrollment
Department _____
Instructor _____

| Instructional Type | Class Hours | FTE | Instructional Type | Class Hours | FTE | Instructional Type | Class Hours | FTE |
|--------------------|-------------|-----|--------------------|-------------|-----|--------------------|-------------|-----|
| Primary | 3 | | Auto-tutorial | | | Thesis | | |
| Secondary | | | Ind. Study | | | Observation | | |
| Laboratory | | | Clinic | | | Mats Based | | |
| Lab. Prep. | | | Experiential | | | | | |

CAMPUS(ES) INVOLVED

Calumet
Fort Wayne
Indianapolis
North Central
West Lafayette
Off Campus

COURSE DESCRIPTION (PREREQUISITES INCLUDED):

AAE 558 Finite Element Methods in Aerospace Structures Sem. 1, class 3, cr. 3; Prerequisite: AAE 453 or consent of instructor.

Introduction to the use of advanced finite element methods in the calculation of deformation, strain, and stress in aerospace structures. Topics include: 1-D, 2-D, 3-D, and axisymmetric elements, isoparametric element formulation, convergence, treatment of boundary conditions and constraints. Special topics include stability, dynamic analysis, and nonlinear material behavior. Emphasis is on the theoretical knowledge of the finite element method. Applied experience is gained by solution of aerospace structural analysis problems through use of professional software.

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|--|-----------------|-------------------------------|---------------|---|------|
| Calumet Undergrad Curriculum Committee | Date | Calumet Department Head | Date | Calumet School Dean | Date |
| Fort Wayne Department Head | Date | Fort Wayne School Dean | Date | Fort Wayne Chancellor Apr. for Faculty <u>Michael Joltowski</u> Date <u>2/26/03</u> M.D. Zoltowski, Chair | Date |
| Indianapolis Department Head | Date | Indianapolis School Dean | Date | Undergrad Curriculum Committee | Date |
| North Central Department Head | Date | North Central Vice Chancellor | Date | Date Approved by Graduate Council | Date |
| <u>TN Ferris</u> | <u>11/31/03</u> | <u>Z. M. Wagg</u> | <u>3/5/03</u> | <u>Maribeth D. Heint</u> <u>6/18/03</u> Graduate Council Secretary | Date |
| West Lafayette Department Head | Date | West Lafayette School Dean | Date | <u>Debra Sheets</u> West Lafayette Registrar | Date |
| Graduate Area Committee Convener | Date | Graduate Dean | Date | CERTIFYING OFFICIAL | Date |

OFFICE OF THE REGISTRAR

JUN 27 2003