NOT FOR USE FOR CURRICULAR COURSE CHANGES
REQUEST FOR PROGRAM IMPROVEMENTS

NOTE: Changes to programs may require course changes, which must be processed electronically. Any questions should be directed to Associate Provost David Reinhold at 7-4564 or david.reinhold@wmich.edu

DEPARTMENT: MAE
PROPOSED EFFECTIVE FALL YEAR: 2020

PROPOSED IMPROVEMENTS: Academic Program Proposed Improvements
☐ New degree*
☐ New major*
☐ New curriculum*
☐ New concentration*
☐ New certificate*
☐ Other (explain**)

** Other:

Title of degree, curriculum, major, minor, concentration, or certificate: Solid Mechanics and Structures

Chair, Department Curriculum Committee: [Signature] Date 09/17/2019

CHECKLIST FOR DEPARTMENT CHAIRS/DIRECTORS
☐ For new programs and other changes that have resource implications, the dean has been consulted.
☐ When appropriate, letters of support from department faculty are attached.
☐ When appropriate, letters of support from other departments in the same college are attached.
☐ When appropriate, letters of support from other college deans, whose programs/courses may be affected by the change, are attached.
☐ The proposal has been reviewed by HIGE for possible implications for international student enrollment.
☐ The proposal is consistent with the departmental assessment plan, and identifies measurable learning outcomes for assessment.
☐ Detailed resource plan is attached where appropriate.
X All questions attached have been completed and supporting documents are attached.
X The proposal is written and complete as outlined in the Faculty Senate guidelines and the curriculum change guides.

Chair/Director: [Signature] Date 9/17/19

CHECKLIST FOR COLLEGE CURRICULUM COMMITTEE
☐ The academic quality of the proposal and the faculty involved has been reviewed.
☐ Detailed resource plan is attached where appropriate.
☐ Consistency between the proposal and the relevant catalog language has been confirmed.
☐ The proposal has been reviewed for effect on students transferring from Michigan community colleges. Detailed information on transfer articulation must be included with undergraduate proposals.
☐ Consistency between the proposal and the College and department assessment plans has been confirmed.
☐ Consistency between the proposal and the College and department strategic plans has been confirmed.
☐ All questions attached have been completed and supporting documents are attached.
☐ The proposal is written and complete as outlined in the Faculty Senate guidelines and the curriculum change guides.

Chair, College Curriculum Committee: Date

Revised Sept. 2018. All previous forms are obsolete and should not be used.
CHECKLIST FOR COLLEGE DEANS

☐ For new programs and proposed program deletions, the provost has been consulted.
☐ For new programs, letter of support from University Libraries Dean indicating library resource requirements have been met.
☐ When appropriate, letters of support from other college faculty and/or chairs are attached.
☐ When appropriate, letters of support from other college deans, whose programs/courses may be affected by the change, are attached.
☐ The proposal has been reviewed for implications for accreditation, certification, or licensure.
☐ Detailed resource plan is attached where appropriate.
☐ All questions attached have been completed and supporting documents are attached.
☐ The proposal is written and complete as outlined in the Faculty Senate guidelines and the curriculum change guides.

Dean: __________________________ Date: __________

FOR PROPOSALS REQUIRING REVIEW BY:
GSC/USC; EPGC, GRADUATE COLLEGE, and/or FACULTY SENATE EXECUTIVE BOARD

☐ Return to Dean

☐ Forward to: Curriculum Manager: __________________________ Date: __________________________

*needs review by

☐ Approve ☐ Disapprove Chair, GSC/USC: __________________________ Date: __________________________

☐ Approve ☐ Disapprove Chair, EPGC: __________________________ Date: __________________________

☐ Approve ☐ Disapprove Graduate College Dean: __________________________ Date: __________________________

☐ Approve ☐ Disapprove Faculty Senate President: __________________________ Date: __________________________

*needs review by

☐ Approve ☐ Disapprove Provost: __________________________ Date: __________________________

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1. Explain briefly and clearly the proposed improvement:

   A Concentration in Solid Mechanics and Structures is proposed for the UG ME program. Students who satisfy the concentration requirements will have the concentration specialty recorded in their transcripts.

2. Rationale. Give your reason(s) for the proposed improvement.

   The ME UG curriculum includes a list of elective courses from various areas of mechanical engineering. Students are required to choose 5 courses from this list. Some students focus their choices on a specific area of specialty. We propose a Concentration in Solid Mechanics and Structures so that students who take a sufficient number of courses in this area will have this specialty recognized and recorded in their transcripts.

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.

   No effect.

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

   No effect.

5. Alignment with college's and department's strategic plan, mission, and vision.

   N/A

6. 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.

   No change.

7. 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?

   N/A

8. Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. If proposing a new program, include a letter and/or email of support from the university libraries affirming that the library resource issues have been reviewed. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? (Attach additional pages, as necessary.)

   No effect.

9. List the learning outcomes for the revised or proposed major, minor, or concentration. The department will use these outcomes for future assessments of the program.

   N/A

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

    N/A

11. (Undergraduate proposals only) Describe in detail how this change affects transfer articulation for Michigan community colleges. 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.

    No effect.

Revised Sept. 2016. All previous forms are obsolete and should not be used.
12. Please offer both "Current Catalog Language" and "Proposed Catalog Language" if there is to be a change in the catalog description for a given program. For the "current" language, please copy and paste relevant language from the most current catalog and for the "proposed" language, please share the exact proposed new catalog language. As possible, bold or otherwise note the key changes in the new proposed catalog language.

Current Catalog Language: (does not exist)

Proposed Catalog Language: (to be added after the list of Mechanical Engineering Electives, p.474 in the 2018-19 UG catalog)

**Mechanical Engineering Concentration in Solid Mechanics and Structures:**
Mechanical engineering majors may choose to focus on the area of solid mechanics and structures as their area of specialty. To qualify for the Concentration in Solid Mechanics and Structures to be recorded in the student’s transcript, students must complete the following courses at WMU with a grade of 'C' or better:

- ME 3650 – Machine Design 1
- and any combination of 4 courses from the following list of electives:
  - AE 4630 – Aerospace Structural Design
  - ME 4530 – Machine Design 2
  - ME 4570 – Experimental Solid Mechanics
  - ME 4700 – Vehicle Structural Design
  - ME 5500 – Modern Engineered Materials
  - ME 5610 – Finite Element Method
  - ME 5690 – Principles of Fatigue and Fracture
  - ME 5730 – Materials Selection in Design

**Advising**

Interested students should meet a mechanical engineering advisor to plan a path to this concentration before choosing any of their ME electives.