Proposal Date: August 20, 2013

**Ogden College of Science and Engineering**

**Department of Architectural and Manufacturing Sciences**

**Proposal to Revise a Program**

**(Action Item)**

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**1. Identification of program:**

* 1. Current program reference number: 506
  2. Current program title: Advanced Manufacturing
  3. Credit hours: 74

**2. Identification of the proposed program changes:**

Changes for all concentrations

* Remove all concentrations

Changes to Advanced Manufacturing Major

* Technical Core - Add the option for students of MKT 220 or FIN161 as well as keeping the option of ACCT 200
* Technical Core – Add the option for students of UC 400 as well as keeping AMS 398 as an option
* Management Core – Remove ENG 306 or ENG 307
* Management Core - Add the option for students of BUS 214C or COMM 346 or COMM 349 or COMM 362 or MGT 361 as well as keeping COMM 345 as an option
* Management Core – Add the option of MGT 200 or MGT 333 as well as keeping the option of MGT 301
* Management Core – Reduce number of hours from 30 to 27
* Advanced Manufacturing Core – Change name of the concentration to core
* Advanced Manufacturing Core – Add the option for students of CM 337 as well as keeping the option of AMS 217
* Advanced Manufacturing Core – Add AMS 352 to the core
* Advanced Manufacturing Core – Adjust the advisor-approved electives from 10 to 11/12
* Advanced Manufacturing Core – Adjust hours needed in the core from 25 to 28/29
* General Education – Adjust hours needed in General Education from 46 to 44/45
* General Education – Remove requirement of ECON 202 and replace with Category C elective
* General Education – Change the math from MATH 117, or MATH 118 or Higher to MATH 117 or higher
* General Education – Remove requirement of CHEM 116/106 to a Cat D course
* General Education – Remove requirement of PHYS 201 to a Category D Lab course
* General Education – Remove requirement of SFTY 171 to a Category F course

**3. Detailed program description:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Advanced Manufacturing | (Old) 74 | |  | Advanced Manufacturing | (New) | 75 |
| Manufacturing & Industrial Distribution | | |  | No Concentration |  |  |
| *Technical Core: 19hrs* | | |  | *Technical Core: 19hrs* |  |  |
| **Introductory Accounting - Financial** | **ACCT200** | **3** |  | **Introductory Accounting or**  **Basic Marketing Concepts or**  **Personal Finance** | **ACCT200 or MKT 220 or**  **FIN 161** | **3** |
| Basic Electricity | AMS120 | 3 |  | Basic Electricity | AMS120 | 3 |
| Architectural Drafting or CADD for Manufacturing | AMS 163/205 | 3 |  | Architectural Drafting or CADD for Manufacturing | AMS 163/205 | 3 |
| Industrial Statistics | AMS271 | 3 |  | Industrial Statistics | AMS271 | 3 |
| **Internship I** | **AMS398** | **1** |  | **Mentored Research Experience or Internship I** | **UC 400 or AMS398** | **1** |
| Senior Research | AMS490 | 3 |  | Senior Research | AMS490 | 3 |
| Robotics and Machine Vision | AMS 328 | 3 |  | Robotics and Machine Vision | AMS 328 | 3 |
|  |  |  |  |  |  |  |
| ***Management Core: 30hrs*** | | |  | ***Management Core: 27hrs*** |  |  |
| Work Design/Ergonomics | AMS310 | 3 |  | Work Design/Ergonomics | AMS310 | 3 |
| Systems Design and Operation | AMS356 | 3 |  | Systems Design and Operation | AMS356 | 3 |
| Project Management | AMS390 | 3 |  | Project Management | AMS390 | 3 |
| Technology Mgmt./Sup./Team Blding | AMS430 | 3 |  | Technology Mgmt./Sup./Team Blding | AMS430 | 3 |
| **Business Writing or Technical Writing** | **ENG 306 or 307** | **3** |  |  |  |  |
| **Advanced Public Speaking** | **COMM345** | **3** |  | **Basic Business Communications or Advanced Public Speaking or Persuasion or Interpersonal Communication or Group Decision Making or Organizational Communication or Business Communication Fundamentals** | **BUS 214C or**  **COMM 345 or COMM 346 or COMM 349 or COMM 362 or MGT 361** | **3** |
| **Business Law** | **MGT301** | **3** |  | **Legal Environment of Business or**  **Business Law or**  **MGMT of Nonprofit Org** | **MGT 200 or MGT301 or MGT 333** | **3** |
| Quality Assurance | AMS371 | 3 |  | Quality Assurance | AMS371 | 3 |
| Lean Manufacturing | AMS 394 | 3 |  | Lean Manufacturing | AMS 394 | 3 |
| Intro to Supply Chain Management | AMS 396 | 3 |  | Intro to Supply Chain Management | AMS 396 | 3 |
|  |  |  |  |  |  |  |
| ***Manufacturing & Industrial Distribution Conc: 25hrs*** | | |  | ***Advanced Manufacturing Core:*** | ***28-29hrs*** | |
| **Industrial Materials** | **AMS217** | **3** |  | **Industrial Materials or**  **Applied Strength of Materials** | **AMS217 or CM337** | **3** |
| Manufacturing Methods | AMS227 | 3 |  | Manufacturing Methods | AMS227 | 3 |
| Manufacturing Operations | AMS342 | 3 |  | Manufacturing Operations | AMS342 | 3 |
| Automated Systems | AMS343 | 3 |  | Automated Systems | AMS343 | 3 |
|  |  |  |  | **Food Processing: Unit Operation** | **AMS352** | **3** |
| Computer Numeric Control | AMS370 | 3 |  | Computer Numeric Control | AMS370 | 3 |
|  |  |  |  |  |  |  |
| **Advisor Approved Electives** |  | **10** |  | **Advisor Approved Electives** |  | **11-12** |
| ***General Education (Old)*** | ***46 hrs*** |  |  | ***General Education (New)*** | ***44-45 hrs*** |  |
| Category A | ENG100 | 3 |  | Category A | ENG100 | 3 |
|  | ENG300 | 3 |  |  | ENG300 | 3 |
|  | Foreign Lang | 3 |  |  | Foreign Lang | 3 |
|  | Public Speaking | 3 |  |  | Public Speaking | 3 |
| Category B | Lit. Elective | 3 |  | Category B | Lit. Elective | 3 |
|  | Category B-II | 3 |  |  | Category B-II | 3 |
|  | Category B-II | 3 |  |  | Category B-II | 3 |
| Category C | HIST119/120 | 3 |  | Category C | HIST119/120 | 3 |
|  | **ECON202** | **3** |  |  | **Category C** | **3** |
|  | Category C | 3 |  |  | Category C | 3 |
| **Category D** | **MATH 117, or MATH 118 OR HIGHER** | **3** |  | **Category D** | **MATH 117, or HIGHER** | **3** |
|  | **CHEM 116** | **3** |  |  | **Category D** | **3** |
|  | **CHEM 106** | **1** |  |  |  |  |
|  | **PHYS201** | **4** |  |  | **Category D Lab** | **3-4** |
| Category E | Category E | 3 |  | Category E | Category E | 3 |
| Category F | **SFTY171** | **1** |  | **Category F** |  |  |
|  | Category F | **1** |  |  | **Category F** | **2** |
| **Program Grand Total Hours:** |  | **120** |  | **Program Grand Total Hours:** |  | **120** |
|  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- |
|  | | |  |  |  |
| Advanced Manufacturing | | | (Old) 74 | |  |
| Food Processing and Technology | | |  | | (New)None |
| *Technical Core: 19hrs* | | | | |  |
| Introductory Accounting - Financial | | | ACCT200 | 3 |  |
| Basic Electricity | | | AMS120 | 3 |  |
| Architectural Drafting or CADD for Manufacturing | | | AMS 163/205 | 3 |  |
| Industrial Statistics | | | AMS271 | 3 |  |
| Internship I | | | AMS398 | 1 |  |
| Senior Research | | | AMS490 | 3 |  |
| Robotics and Machine Vision | | | AMS 328 | 3 |  |
|  | | |  |  |  |
| *Management Core: 30hrs* | | | | |  |
| Work Design/Ergonomics | | | AMS310 | 3 |  |
| Systems Design and Operation | | | AMS356 | 3 |  |
| Project Management | | | AMS390 | 3 |  |
| Technology Mgmt./Sup./Team Blding | | | AMS430 | 3 |  |
| Business Writing or Technical Writing | | | ENG 306 or 307 | 3 |  |
| Advanced Public Speaking | | | COMM345 | 3 |  |
| Business Law | | | MGT301 | 3 |  |
| Quality Assurance | | | AMS371 | 3 |  |
| Lean Manufacturing | | | AMS 394 | 3 |  |
| Intro to Supply Chain Management | | | AMS 396 | 3 |  |
|  | | |  |  |  |
| *Food Processing and Technology Conc: 25hrs* | | | | |  |
| Science of Food Processing | | | AMS 301 | 3 |  |
| Food Laws and Regulations | | | AMS 303 | 3 |  |
| Automated Systems | | | AMS 343 | 3 |  |
| Food Processing: Unit Operations | | | AMS 352 | 3 |  |
| Fundamentals of HACCP | | | AMS 395 | 3 |  |
| Food Quality Assurance | | | AMS 381 | 3 |  |
| Food Packaging | | | AMS 443 | 3 |  |
| Commodity Food Processing | | | AMS 462 | 3 |  |
| Advisor Approved Electives | | |  | 1 |  |
| General Education (OLD) | | | 46 hrs |  |  |
| Category A | | | ENG100 | 3 |  |
|  | | | ENG300 | 3 |  |
|  | | | Foreign Lang | 3 |  |
|  | | | Public Speaking | 3 |  |
| Category B | | | Lit. Elective | 3 |  |
|  | | | Category B-II | 3 |  |
|  | | | Category B-II | 3 |  |
| Category C | | | HIST119/120 | 3 |  |
|  | | | ECON202 | 3 |  |
|  | | | Category C | 3 |  |
| Category D | | | MATH 117, or MATH 118 OR HIGHER | 3 |  |
|  | | | CHEM 105 | 3 |  |
|  | | | CHEM 106 | 1 |  |
|  | | | BIO 207 | 3 |  |
|  | | | BIO 208 | 1 |  |
| Category E | | | Category E | 3 |  |
| Category F | | | SFTY171 | 1 |  |
|  | | | Category F | 1 |  |
| **Program Grand Total Hours:** | | |  | **120** |  |
|  | | |  |  |  |
|  | | |  |  |  |
|  | | |  | |  |  |
| Advanced Manufacturing | | (Old) 74 | | |  |  |
| **Quality Systems** | | | | | **(New) NONE** |
| *Technical Core: 19hrs* | | |  |  |  |
| Introductory Accounting - Financial | | | ACCT200 | 3 |  |
| Basic Electricity | | | AMS120 | 3 |  |
| Architectural Drafting or CADD for Manufacturing | | | AMS 163/205 | 3 |  |
| Industrial Statistics | | | AMS271 | 3 |  |
| Internship I | | | AMS398 | 1 |  |
| Senior Research | | | AMS490 | 3 |  |
| Robotics and Machine Vision | | | AMS 328 | 3 |  |
|  | | | | |  |
| *Management Core: 30hrs* | | |  |  |  |
| Work Design/Ergonomics | | | AMS310 | 3 |  |
| Systems Design and Operation | | | AMS356 | 3 |  |
| Project Management | | | AMS390 | 3 |  |
| Technology Mgmt./Sup./Team Blding | | | AMS430 | 3 |  |
| Business Writing or Technical Writing | | | ENG 306 or 307 | 3 |  |
| Advanced Public Speaking | | | COMM345 | 3 |  |
| Business Law | | | MGT301 | 3 |  |
| Quality Assurance | | | AMS371 | 3 |  |
| Lean Manufacturing | | | AMS 394 | 3 |  |
| Intro to Supply Chain Management | | | AMS 396 | 3 |  |
|  | | | | |  |
| *Quality Systems Conc: 25hrs* | | |  |  |  |
| Industrial Materials | | | AMS217 | 3 |  |
| Manufacturing Operations | | | AMS342 | 3 |  |
| Computer Numeric Control | | | AMS370 | 3 |  |
| Reliability & Probability | | | AMS 391 | 3 |  |
| Quality Management | | | AMS392 | 3 |  |
| Design of Industrial Experiments | | | AMS471 | 3 |  |
| Advisor Approved Electives | | |  | 7 |  |
| General Education (OLD) | | | 44 hrs |  |  |
| Category A | | | ENG100 | 3 |  |
|  | | | ENG300 | 3 |  |
|  | | | Foreign Lang | 3 |  |
|  | | | Public Speaking | 3 |  |
| Category B | | | Lit. Elective | 3 |  |
|  | | | Category B-II | 3 |  |
|  | | | Category B-II | 3 |  |
| Category C | | | HIST119/120 | 3 |  |
|  | | | ECON202 | 3 |  |
|  | | | Category C | 3 |  |
| Category D | | | MATH 117, or MATH 118 OR HIGHER | 3 |  |
|  | | | Category D-II | 3 |  |
|  | | | Category Dl-l | 3 |  |
| Category E | | | Category E | 3 |  |
| Category F | | | SFTY171 | 1 |  |
| Category F |  | | 1 | |
| Electives | | |  |  |  |
| **Electives** | | |  | **2** |  |
| **Program Grand Total Hours:** | | |  | **120** |  |
|  | | |  |  |  |

**4. Rationale for the proposed program change:**

Changes for all concentrations

* Remove all concentrations

This is being done due to low enrollments in some of the concentrations in the program. We are consolidating to lower the number of required course offerings in the program.

Changes to Advanced Manufacturing Major

* Technical Core - Add the option for students of MKT 220 or FIN161 as well as keeping the option of ACCT 200.

This will allow students to have different options for courses that are offered by the College of Business.

* Technical Core – Add the option for students of UC 400 as well as keeping AMS 398 as an option.

UC 400 is required of students who are completing a FUSE grant with the University.

* Management Core – Remove ENG 306 or ENG 307

Writing across all levels of coursework has been initiated in the Advanced Manufacturing Program. This includes sessions on resume writing and technical memos for the students.

* Management Core - Add the option for students of BUS 214 or COMM 346 or COMM 349 or COMM 362 or MGT 361 as well as keeping COMM 345 as an option.

This allows students more scheduling options for courses in the business/ advanced communication areas.

* Management Core – Add the option of MGT 200 or MGT 333 as well as keeping the option of MGT 301.

This allows students more scheduling options for courses in the business law area.

* Management Core – Reduce number of hours from 30 to 27

This reduction occurs due to the removal of ENG 306/307 from list of required courses.

* Advanced Manufacturing Core –Change name of the concentration to Core

The core name will be the same as the major since the concentrations no longer exist.

* Advanced Manufacturing Core – Add the option for students to take CM 337 as well as keeping the option of AMS 217.

This allows students more scheduling options for courses.

* Advanced Manufacturing Core – Add AMS 352 to the core

Approximately 15 percent of the graduates from the Advanced Manufacturing Program have gone to work in the foods industries. With the removal of the Food Processing and Technology Concentration, the food industry has suggested that AMS 352 Food Processing: Unit Operations be added to the curriculum.

* Advanced Manufacturing Core – Adjust the advisor-approved electives from 10 to 11/12

This is due to an adjustment in the General Education hours which allows more freedom in the advisor-approved electives.

* Advanced Manufacturing Core – Adjust hours needed in the core from 25 to 28/29

This is due to an adjustment in the General Education hours which allows more freedom in the advisor-approved electives.

* General Education – Adjust hours needed in General Education from 46 to 44/45

This is due to the removal of prescribed classes in Category D.

* General Education – Remove requirement of ECON 202 and replace with Category C elective

Many students transfer into the program with the Category C general education completed.

* General Education – Change the math from MATH 117, or MATH 118 or higher to MATH 117 or higher.

MATH 118 is no longer taught by the Math Department.

* General Education – Remove requirement of CHEM 116/106 to a Cat D course.

With the consolidation of the program, the diversity of students’ career goals will be addressed during advising as to which course they should take in this area.

* General Education – Remove requirement of PHYS 201 to a Category D Lab course

With the consolidation of the program the diversity of students’ career goals will be addressed during advising as to which course they should take in this area.

* General Education – Remove requirement of SFTY 171 to a Category F course.

This will allow students who come to the program with this category already completed to not have to take an additional course. Almost all companies include safety and first aid training in their orientation of new employees.

**5. Effective Catalog Year:** 2014-2015

**6. Dates of prior committee approvals:**

Architectural and Manufacturing SciencesDepartment 8-21-2013

OCSE Curriculum Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Undergraduate Curriculum Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

University Senate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_