5-11-2015

SR-14-15-44 CC

Marshall University

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CURRICULUM COMMITTEE
RECOMMENDATION

SR-14-15-44 CC

NOTE: The curricular form for each item listed may be accessed at www.marshall.edu/senate/ucc. Click the UCC Agendas/Minutes link; click the link for the April 3, 2015 meeting date; click the link in the Description column to open a particular item.

Recommends approval of the listed UNDERGRADUATE COURSE ADDITIONS in the following colleges and/or schools/program: COLLEGE OF LIBERAL ARTS, COLLEGE OF ARTS & MEDIA, COLLEGE OF HEALTH PROFESSIONS, and COLLEGE OF INFORMATION TECHNOLOGY & ENGINEERING.

- ## COLLEGE OF LIBERAL ARTS:

  CL   476   Rome: The Eternal City   6 hours
  *Course Description: On-site study of the archaeology and material culture of ancient Rome in its social, literary, and historical context. Taught in English in Rome, Italy (students fund their own travel.
  *Pre-requisite(s): ENG 101, CL 436 and permission

- ## COLLEGE OF ARTS & MEDIA:

  ART   459   Digital Drawing and Painting   3 hours
  *Course Description: Students will create conceptual illustrations for books, gaming, storyboards, and movies by integrating traditional drawing and painting techniques with digital media.
  *Pre-requisite(s): ART 218 and 219

  MUS   271   Guitar Techniques   1 hour
  *Course Description: The study of guitar techniques that will allow students to play and teach guitar at a basic level in a public school music program.
  *Pre-requisite(s): None

- ## COLLEGE OF HEALTH PROFESSIONS:

  MI   213   Elective Clinical Practicum I   4 hours
  *Course Description: Elective clinical practicum in radiography or sonography.
  *Pre-requisite(s): None

  MI   320   Elective Clinical Practicum II   4 hours
  *Course Description: Elective clinical practicum in radiography or sonography.
  *Pre-requisite(s): None

  MI   321   Imaging Procedures III   4 hours
  *Course Description: Content is designed to provide the knowledge necessary

for advanced diagnostic radiographic imaging procedures.
*Pre-requisite(s): MI 205, MI 207

MI   431   Advanced Clinical Practice III   4 hours
*Course Description: Elective advanced clinical practicum in radiography or sonography.
*Pre-requisite(s): Senior status or ARRT certification, ACLS certification

• COLLEGE OF INFORMATION TECHNOLOGY & ENGINEERING:

ENGR   245   Intro to Circuits and Controls   3 hours
*Course Description: Basic DC and AC electric circuit analysis including: variables, measurement, laws, methods, three phase circuits, and basic control theory. Includes the use of computer applications and PLC based controls.
*Pre-requisite(s): A Concurrent PR: MTH 230

ME   310   Thermodynamics II   3 hours
*Course Description: Gas, vapor, combined power cycles, co-generation, entropy, combustion, fuel cells, and equations of state.
*Pre-requisite(s): ENGR 219

ME   320   Fluid Power   3 hours
*Course Description: This course covers physical principles of fluid power, fluid power cylinders, control valves, fluid power components: compressors, pumps, valves, cylinders, and motors, fluid power circuits, troubleshooting: hydraulic, symptoms, procedures, pneumatics.
*Pre-requisite(s): ENGR 214 and ENGR 216

ME   325   Mechanical Engineering Lab-I   1 hour
*Course Description: Experimental laboratory mainly from within the thermo-fluids area, concerned with fluid statics, flow, heat transfer, internal combustion engines, data acquisition, analysis, including use of computers. Principles of good experimental design.
*Pre-requisite(s): ENGR 318; Concurrent PR: ME 350

ME   330   Manufacturing Methods/Design   3 hours
*Course Description: This course covers economical production by understanding the capabilities of different manufacturing processes, candidate manufacturing processes for a given part, performing manufacturability evaluation at the design stage, automation, IMS.
*Pre-requisite(s): ENGR 102 and ENGR 215

ME   340   Machine Element Design   3 hours
*Course Description: Mechanical design of machine elements, static and fatigue failures, shaft systems, bearings, gears, springs, screws, and fasteners.
*Pre-requisite(s): ENGR 214, 216: Concurrent PR MTH 231

| ME | 350 | Heat Transfer | 3 hours |

ME 350 — Heat Transfer — 3 hours
*Course Description: Analysis and solutions of conduction, free and forced convection, an radiation heat transfer, an design of heat exchangers.
*Pre-requisite(s): ENGR 219 & ENGR 318

ENGR 217 — Engineering Co-Op Preparation — 1 hour
*Course Description: To prepare students for both the job search and employment in the field of engineering. Students will learn strategies for conducting a successful Co-Op.
*Pre-requisite(s): ENGR 102

ME 410 — Kinematics & Design of Machine — 3 hours
*Course Description: The determination of the motion and forces of machines and mechanisms including rotating machinery, cams and gears. Analyze position, velocity, accelerations, static loads, and dynamic loads.
*Pre-requisite(s): ME 340

ME 420 — Instrumentation and Control — 3 hours
*Course Description: This course provides an overview of the instrument characteristics and measurement principles. Concept of control, open and closed-loop control systems.
*Pre-requisite(s): ENGR 245

ME 425 — Mechanical Engineering Lab-II — 1 hour
*Course Description: Engineering measurements and experimentations. Hands-on labs and data analyses in several major topics of the Mechanics of Materials theory and Theory of Machines.
*Pre-requisite(s): ME 340

ME 430 — Design of Thermal Systems — 3 hours
*Course Description: Design and analysis of thermal systems including components selection and integrations.
*Pre-requisite(s): ME 350

ME 435 — Design of Mechanical System — 3 hours
*Course Description: Problem solving methodology in the design, analysis, and synthesis of mechanical systems. Engineering design process involving modeling, computer simulation, concepts of optimization, robustness, reliability, sustainability.
*Pre-requisite(s): ME 410

ME 440 — Design Analysis Energy Systems — 3 hours
*Course Description: Design characteristics and operational performance of energy systems.
*Pre-requisite(s): ME 350

ME 445 — Hydraulic & Pneumatic Control — 3 hours
*Course Description: This course covers standard symbols, pumps,

control valves, assemblies, actuators, filter regulator lubricator (FRL), maintenance procedures, switching, control devices, fluid power system, fluid power circuits including design, application, and troubleshooting.
*Pre-requisite(s): ENGR 240, ME 320

| ME | 447 | Engineering Analysis | 4 hours |

*Course Description: Experimental laboratory mainly from within the thermo-fluids area, concerned with fluid statics, flow, heat transfer, internal combustion engines, data acquisition, analysis, including use of computers. Principles of good experimental design.
*Pre-requisite(s): MATH 335

| ME | 450 | CNC and Rapid Prototyping | 3 hours |

*Course Description: This course covers CNC CAD/CAM, CNC tools, coordinate systems, CNC programming language, CNC operation, CNC tool paths, CNC turning, G/M code reference, CNC milling work-holding, rapid prototyping, 3D printing.
*Pre-requisite(s): ENGR 240

| ME | 455 | Metallurgy | 3 hours |

*Course Description: Covers material properties and behavior of pure metals and common metal alloys. Discuss various aspects of extractive, mechanical, physical metallurgy, theory and practice identification, selection, processing, conditioning, and testing.
*Pre-requisite(s): ENGR 215

| ME | 460 | Vibrations | 3 hours |

*Course Description: Modeling of vibratory motion of single and multiple degree of freedom systems; free and forced response; modal summation method for response predictions; simulation of the vibration by using Matlab.
*Pre-requisite(s): ENGR 214, MTH 335

| ME | 465 | Mechatronics | 3 hours |

*Course Description: Dynamic analysis of mechatronic systems, sensors, transducers, and electric circuits and control.
*Pre-requisite(s): ENGR 245, MTH 345

| ME | 480-483 | Special Topics | 1-4 hours |

*Course Description: Subject matter to be selected from topics of current interest.
*Pre-requisite(s): Permission

| ME | 485-488 | Independent Study | 1-4 hours |

*Course Description: Individual study of advanced mechanical engineering areas.
*Pre-requisite(s): Permission

FACULTY SENATE CHAIR:

APPROVED BY THE
FACULTY SENATE: _Larry Stickler_ DATE: _5/11/2015_

DISAPPROVED BY THE
FACULTY SENATE: _____ DATE:_____

UNIVERSITY PRESIDENT:

APPROVED: _Jay S. White_ DATE: _6/11/15_

DISAPPROVED: _____ DATE: _____