2008-2009

Northern New Mexico College

Bachelor of Engineering (BEng)
MECHANICAL ENGINEERING
Solar Energy Concentration

The curriculum of the BEng in Mechanical Engineering is designed for those engineering students who intend to launch a career in the design, installation, maintenance and repair of solar energy conversion and storage devices, modules and systems used for alternative energy sources or controllers. Coursework in the program is practice-orientated and prepares students to work in a variety of technology-intensive environments-engineering organizations, small or large businesses, product design or manufacturing companies, and alternative energy consultancies and public policy agencies. The breadth of training in hardware, software, power engineering, troubleshooting equipment and other technological tools will enable the graduate to work in a variety of roles in such environments as an electric grid engineer, a power engineering network designer, alternative energy engineer or project manager. The graduate of this curriculum will be professional engineering specialist in solar energy power sources, but broadly versed in mathematics, physics, computer science, and business fundamentals.

Students are advised not to attempt upper division coursework (300 and 400-level classes) unless you have earned a GPA of 2.5 or better in all IT, CS, and CT coursework taken at the 100 and 200-level. Failure to maintain an overall GPA of 2.0 or better in all coursework will be sufficient cause for being dropped from the program.

GENERAL EDUCATION (53 crs)	**COMPLETED**	**Planned Timeline** (By Semester)
Communications (9 crs)		
ENG 111 English Composition I (3) *Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation*	_____	_____
ENG 116 Technical Writing (3) *Pre-requisite: ENG 111*	_____	_____
SPCH 130 Public Speaking (3) *Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation*	_____	_____
Mathematics (17 crs)		
MATH 145 Introduction to Probability and Statistics (3) *Pre-requisite: MATH 130 or adequate score on the Course Placement Evaluation*	_____	_____
MATH 162 Calculus I (4) *Pre-requisites: MATH 150 and MATH 160 or adequate score on the Course Placement Evaluation*	_____	_____
MATH 163 Calculus II (4) *Pre-requisites: MATH 155 and MATH 162 or adequate score on the Course Placement Evaluation*	_____	_____
MATH 312 Partial Differential Equations (3) *Pre-requisites: MATH 264 and 316 or adequate score on the Course Placement Evaluation*	_____	_____
MATH 314 Linear Algebra with Applications (3) *Pre-requisites: MATH 163 or adequate score on the Course Placement Evaluation*	_____	_____
Laboratory Sciences (12 crs)		
CHEM 121/L General Chemistry I with lab (4) *Pre-requisite: MATH 130 or adequate score on the Course Placement Evaluation*	_____	_____
PHYS 215 Engineering Physics I (3) *Pre-requisite: MATH 162; Co-requisite: PHYS 215L*	_____	_____
PHYS 215L Engineering Physics I Lab (1) *Co-requisite: PHYS 215*	_____	_____
PHYS 216 Engineering Physics II (3) *Pre-requisite: MATH 162, PHYS 161/L; Co-requisite: 216L*	_____	_____
PHYS 216L Engineering Physics II Lab (1) *Co-requisite: PHYS 216*	_____	_____
Social/Behavioral Sciences (6 crs) ***Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation***		
ECON 201 Microeconomics (3)	_____	_____
Elective (3) _____	_____	_____

Humanities and Fine Arts (6 crs)
Pre-requisite: ENG 109 or adequate score on the Course Placement Evaluation

PHIL 220	Ethics (3)	_____	_____
Elective (3)	_____	_____	_____
Elective (3)	_____	_____	_____

HEALTH, PHYSICAL EDUCATION & RECREATION (1 crs)

Electives (1)	_____	_____	_____

PROGRAM REQUIREMENTS (74 crs)

Solar Energy and Storage (41 crs)

ME 160L	Engineering Design I (3)	_____	_____
Pre-requisite: MATH 160 or adequate score on the Course Placement Evaluation			
ME 202	Engineering Statics (3)	_____	_____
Pre-requisite: PHYS 215/L and MATH 163 or adequate score on the Course Placement Evaluation			
ME 260	Engineering Design II (3)	_____	_____
Pre-requisite: ME 160L and MATH 162 or adequate score on the Course Placement Evaluation			
ME 301	Thermodynamics (3)	_____	_____
Pre-requisite: CHEM 122/L, PHYS 216/L and MATH 163 or adequate score on the Course Placement Evaluation			
ME 308	Dynamics (3)	_____	_____
Pre-requisite: ME 202 and MATH 163 or adequate score on the Course Placement Evaluation			
ME 317	Fluid Mechanics (4)	_____	_____
Pre-requisite: ME 301 and 302 or adequate score on the Course Placement Evaluation			
ME 318	Mechanical Engineering Lab (4)	_____	_____
ME 357	Mechanical Vibrations (3)	_____	_____
Pre-requisite: ME 306 and MATH 316 or adequate score on the Course Placement Evaluation			
ME 390	Power Systems (4)	_____	_____
Pre-requisite: ME 306, 317 and EECE 203L			
ME 401	Advanced Mechanics of Materials (3)	_____	_____
Pre-requisite: ME 306			
ME 490	Capstone in Mechanical Engineering I (4)	_____	_____
ME 491	Capstone in Mechanical Engineering II (4)	_____	_____
Pre-requisite: ME 490			

Support Technologies (24 crs)

CS 152	Introduction to Programming (4)	_____	_____
Pre-requisite: ME 306, 317 and EECE 203L			
CS 238L	Computer Logic Design (4)	_____	_____
Pre-requisite: ME 306, 317 and EECE 203L			
EECE 203	Circuit Analysis I (3)	_____	_____
Pre-requisite: MATH 163 and PHYS 216/L or adequate score on the Course Placement Evaluation			
EECE 213	Circuit Analysis II (3)	_____	_____
Pre-requisite: MATH 314 and 316 and EECE 203L or adequate score on the Course Placement Evaluation			
EECE 371	Materials and Devices (3)	_____	_____
Pre-requisite: PHYS 216/L			
EECE 452	Power Controllers (3)	_____	_____
Pre-requisite: EECE 321			
EECE 472	Photovoltaic Devices (4)	_____	_____
Pre-requisite: EECE 322 and 371.			

Business (9 crs)

BA 220	Introduction to Business (3)	_____	_____
Pre-requisite: ENG 109N or adequate score on the Course Placement Evaluation			
BA 242	Business Information Systems (3)	_____	_____
BA 435	Project Contracting and Supply Chain Management (3)	_____	_____
Pre-requisite: BA 434			

TOTAL CREDIT HOURS 128

Educational Planning Form (Semester)

Name _____Date _____
Major _____ Student ID _____

Fall Semester	Spring Semester	Summer
Total Units	**Total Units**	**Total Units**
Fall Semester	**Spring Semester**	**Summer**
Total Units	**Total Units**	**Total Units**
Fall Semester	**Spring Semester**	**Summer**
Total Units	**Total Units**	**Total Units**

Advisor's Signature _____

Student Signature _____