

# CONCURRENT MAJOR IN MECHANICAL & NUCLEAR ENGINEERING (9 SEMESTERS)

SEMESTER 1			SEMESTER 2		
Course		Credits	Course		Credits
	FYS First Year Seminar	1	(c) CHEM 112	Chemical Principles II	3
(a, d)	<b>CHEM 110</b> <b>Chemical Principles</b>	3	CHEM 11	Experimental Chemistry I	1
	ENGL 015 Rhetoric and Composition <i>-or-</i> ENGL 030 Honors Freshman Composition	3	(m) ECON 102	Microeconomic Analysis & Policy (GS) <i>-or-</i> ECON 104 Macroeconomic Analysis & Policy (GS)	3
	EDSGN 100 Introduction to Engineering Design	3	(a,d) <b>PHYS 211</b>	<b>Mechanics</b>	4
(a,b,d)	<b>MATH 140</b> <b>Calculus with Analytic Geometry I -or-</b> <b>MATH 140E</b> <b>Calc. with Engineering Applications I</b>	4	(a,b,d) <b>MATH 141</b>	<b>Calc. with Analytic Geometry II -or-</b> <b>MATH 141E</b> <b>Calc. with Engineering Applications II</b>	4
(m)	AHS course (GA, GH, or GS)	3	(m) AHS course	(GA, GH, or GS)	3
<b>Total Semester Credits</b>		<b>17</b>	<b>Total Semester Credits</b>		<b>18</b>
SEMESTER 3			SEMESTER 4		
Course		Credits	Course		Credits
	CAS 100A/B Effective Speech	3	(d) <b>E MCH 212</b>	<b>Dynamics</b>	3
(d)	<b>EMCH 211</b> <b>Statics</b>	3	(d) <b>E MCH 213</b>	<b>Strength of Materials -or-</b> <b>EMCH 213D</b> <b>Strength of Materials with Design</b>	3
(a,d)	<b>PHYS 212</b> <b>Electricity and Magnetism</b>	4	(d) <b>M E 300</b>	<b>Engineering Thermodynamics I</b>	3
(a,d)	<b>MATH 251</b> <b>Ordinary and Partial Differential Eq.</b>	4	(e) MATH 230	Calculus of Several Variables	4
(m)	AHS course (GA, GH, or GS)	3	PHYS 214	Wave Motion and Quantum Physics	2
(k)	GHA Health/Physical Activity	1.5	CMPSC 201	C++ ( <b>Preferred</b> ) <i>-or-</i> CMPSC 200 MATLAB	3
<b>Total Semester Credits</b>		<b>18.5</b>	<b>Total Semester Credits</b>		<b>18</b>
SEMESTER 5			SEMESTER 6		
Course		Credits	Course		Credits
	MATH 220 Matrices	2	ENGL 202C	Technical Writing	3
(d)	<b>M E 320</b> <b>Fluid Flow</b>	3	MATSE 259	Properties and Processing of Engr. Matls.	3
(d,*)	<b>NUC E 301</b> <b>Fundamentals of Reactor Physics</b>	4	(d,j,**)	<b>NUC E 302</b> <b>Intro. To Reactor Design</b>	4
(d,j,*)	<b>NUC E 309</b> <b>Analytical Techniques for Nuclear Concepts</b>	3	(d) <b>M E 410</b>	<b>Heat Transfer</b>	3
(*)	NUC E 310W Issues in Nuclear Engineering	2	(d,f) <b>M E 370</b>	<b>Vibration of Mechanical Systems</b>	3
	E MCH 315 Mechanical Response of Engr. Matl.	2	(k) GHA	Health/Physical Activity	1.5
<b>Total Semester Credits</b>		<b>16</b>	<b>Total Semester Credits</b>		<b>17.5</b>
SEMESTER 7			SEMESTER 8		
Course		Credits	Course		Credits
(g)	EMCH 316 Exp. Determination of Mech. Response of Materials	3	(d) <b>M E 340</b>	<b>Mechanical Engr. Design Methodology</b>	3
(d)	<b>M E 345</b> <b>Instrumentation, Measurement &amp; Statistics</b>	3	(d,f) <b>M E 360</b>	<b>Mechanical Design</b>	3
(d,*)	<b>NUC E 430</b> <b>Design Principles of Reactor Systems</b>	3	(d,**)	<b>NUC E 450</b> <b>Radiation Detection and Measurement</b>	3
(*)	NUC E 403 Advanced Reactor Design	3	(**)	NUC E 431W Nuclear Reactor Core Design Synthesis	4
(l)	I E 312 Product Design and Mfg. Processes	3	(m) AHS course	(GA, GH, or GS)	3
	E E 212 Intro to Elec. Measuring Systems	1			
<b>Total Semester Credits</b>		<b>17</b>	<b>Total Semester Credits</b>		<b>16</b>
SEMESTER 9			a) Courses listed in <b>boldface italic type</b> require a C or better for entrance to major b) MATH 140E & 141E are only available at U. Park in the semester listed. c) Students may substitute BIOL 141 for CHEM 112. d) Courses listed in <b>boldface type</b> require a C or better for graduation. e) MATH 231 and MATH 232=MATH 230; ME students who have taken MATH 231 should enroll in MATH 232 in the fall semester of Junior year. The course content is used in the Spring Junior year NUCE courses f) ME 360, 370, or 450 can be used as an Engineering Technical Elective (ETE), or General Technical Elective (GTE), in the NUCE degree for concurrent majors g) To graduate, one of the following lab courses must be taken: ME 315, 325, 355 or 375. EMCH 316 will satisfy the second lab requirement. 1 credit of ME 445 can also be used as 1 credit of a ME lab course		
Course		Credits			
(h)	NUCE/ME Technical Elective	3			
	M E 440W Senior Capstone Project (option I) <i>-or-</i> M E 441W Senior Capstone Project (option II)	3			
(*)	NUC E 451 Experiments in Reactor Physics	3			
(d,f)	<b>M E 450</b> <b>Modeling of Dynamic Systems</b>	3			
(g)	M E Lab	1			
(m)	AHS (GA, GH, or GS)	3			
<b>Total Semester Credits</b>		<b>16</b>			

h) A Mechanical Engineering Technical Elective (METE), and Nuclear Engineering Technical Elective (NETE), is any three-credit, 400-level ME or NUC E course that is not required for the major. ME/NUC E 494 or ME/NUC E 496 may not be used. Students may substitute BIOL 141 for CHEM 112.

i) NUC ER 403, 430, or 451 can be used as an Engineering Technical Elective (ETE), in the ME degree for concurrent majors.

j) NUCE 301, 302, or any three-credit 400-level NUCE course can be used as a General Technical Elective (GTE) in the ME audit for concurrent Majors.

k) Six ROTC credits may be substituted for three credits of GHA plus three GTE credits upon completion of the basic ROTC Program.

l) IE 312 cannot be taken in the same semester as NUCE 450 or 451 due to scheduling conflicts.

m) An elective course to satisfy General Education AHS requirements: GA-General Artsm GH-Humanities, GS-Social and Behavioral Sciences, selected from the lists published in the University General Education handbook

\* These Nuc E courses are **ONLY** offered in the **Fall** semester \*

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8/19/2015