



**WRIGHT STATE  
UNIVERSITY**

# Bachelor of Science in Engineering Physics

Program Guide  
2010-2011

Student's Name \_\_\_\_\_

UID# \_\_\_\_\_

Freshman Year		Qtr	Grade	(52 credit hours)	Pre/Co-requisites	Fa	Wi	Sp
ENG 101	4.0	WI	_____	English Composition I..... ("C" or better required)		X	a	a
ENG 102	4.0	WI	_____	English Composition II.....("C" or better required; ENG 101)		a	X	a
EGR 101	5.0	_____	_____	Introductory Mathematics for Engineering Applications..... (MPL 5 + HS Trig or MTH 131)		X	a	a
EE 160	4.0	_____	_____	Digital Design with HDL..... (MPL 4 or MTH 127)		•	X	a
GEN ED	4.0	_____	_____	Choose one from Area II (HST)..... (See GE section of UG catalog)		X	a	a
MTH 229	5.0	_____	_____	Calculus I.....("C" or better required in MTH 229 and MTH 230 or EGR 101; MTH 130 and 131)		a	X	a
MTH 230	5.0	_____	_____	Calculus II.....("C" or better required in MTH 229 and MTH 230 or EGR 101; MTH 229)		a	a	X
CEG 220	4.0	_____	_____	Intro to C For Engineers*..... ("C" or better required; MTH 229 or EGR 101; see Note 7)		a	X	a
PHY 240	4.0	_____	_____	Physics I .....(EGR 101 or MTH 229, PHY 200c; see Notes 1 and 2)		a	•	X
PHY 200	1.0	_____	_____	Physics I Laboratory .....(PHY 240c)		a	•	X
GEN ED	4.0	_____	_____	Choose one from Area II (Non-Western)..... (See GE section of UG catalog)		X	a	a
GEN ED	4.0	_____	_____	Choose one from Area III.....(See GE section of UG catalog)		a	a	X
GEN ED	4.0	_____	_____	Choose one from Area III.....(See GE section of UG catalog)		a	a	X
<b>Credit Hours Per Quarter in the Model Program.....</b>						<b>17</b>	<b>17</b>	<b>18</b>

Sophomore Year		Qtr	Grade	(53 credit hours)	Pre/Co-requisites	Fa	Wi	Sp
MTH 231	5.0	_____	_____	Calculus III..... ( MTH 230)		X	a	a
MTH 232	5.0	_____	_____	Calculus IV..... (MTH 231)		a	X	a
MTH 235	5.0	_____	_____	Differential Equations with Matrix Algebra.....(MTH 231; see Note 7d)		a	a	X
PHY 202	1.0	_____	_____	Physics II Laboratory .....(PHY 242c)		X	a	•
PHY 242	4.0	_____	_____	Physics II .....(MTH 230, PHY 240, PHY 202c)		X	a	•
PHY 204	1.0	WI	_____	Physics III Laboratory .....(PHY 244c)		•	X	a
PHY 244	5.0	_____	_____	Physics III .....(MTH 230, PHY 240, PHY 204c)		•	X	a
EE 301	4.0	D	_____	Circuit Analysis I ..... (EGR 101 or MTH 230, PHY 242, EE 302c; see note 1)		a	X	a
EE 302	1.0	D	_____	Circuit Analysis I Laboratory ..... (EE 301c)		a	X	a
EE 303	3.0	D	_____	Circuit Analysis II .....(EE 301, EE 302, EE 304c)		•	a	X
EE 304	1.0	D	_____	Circuit Analysis II Laboratory ..... (EE 303c)		•	a	X
EE 331	3.0	D	_____	Electronic Devices .....(EE 301, EE 302, EE 332c)		a	a	X
EE 332	1.0	_____	_____	Electronic Devices Laboratory .....(EE 301, EE 302, EE 331c)		a	a	X
PHY 316	3.0	D WI	_____	Digital Instrumentation Laboratory..... (EE 301, EE 302)		•	•	X
GEN ED	4.0	WI	_____	Choose one from Area IV .....(See GE section of UG catalog)		X	a	a
---	4.0	_____	_____	Technical Elective* .....(See Note 8)		X	a	a
---	3.0	_____	_____	Technical Elective* .....(See Note 8)		a	X	a
<b>Credit Hours Per Quarter in the Model Program.....</b>						<b>18</b>	<b>19</b>	<b>16</b>

Junior Year		Qtr	Grade	(45 credit hours)	Pre/Co-requisites	Fa	Wi	Sp
EE 321	4.0	_____	_____	Linear Systems I..... (EE 301, EE 302)		X	a	a
EE 322	4.0	D	_____	Linear Systems II.....(EE 321)		•	X	a
EE 413	3.0	D	_____	Control Systems I .....(EE 321, ME 213, EE 414c)		a	•	X
EE 414	1.0	_____	_____	Control Systems I Laboratory ..... (EE 413c)		a	•	X
PHY 260	4.0	WI	_____	Introduction to Modern Physics .....(MTH 230, PHY 244)		X	•	•
PHY 371	3.0	_____	_____	Analytical Mechanics ..... (PHY 244, MTH 232, MTH 233c)		•	X	•
PHY 372	3.0	D	_____	Analytical Mechanics II .....(PHY 371)		•	•	X
PHY 450	3.0	_____	_____	Electricity and Magnetism I..... (PHY 242, MTH 232, MTH 233)		X	•	•
PHY 451	3.0	D	_____	Electricity and Magnetism II.....(PHY 450)		•	X	•
PHY 452	3.0	D	_____	Electricity and Magnetism III.....(PHY 451)		•	•	X
---	3.0	_____	_____	Technical Elective* .....(See Note 8)		a	X	a
---	3.0	_____	_____	Technical Elective* .....(see Note 8)		a	X	a
---	3.0	_____	_____	Technical Elective* .....(See Note 8)		a	a	X
GEN ED	4.0	_____	_____	Choose one from Area II, III, or IV..... (see Note 6)		X	a	a
<b>Credit Hours Per Quarter in the Model Program.....</b>						<b>15</b>	<b>16</b>	<b>13</b>

Senior Year	Qtr	Grade	(47 credit hours)	Pre/Co-requisites	Fa	Wi	Sp
EE 431/432	4.0	D	_____	Electronic Circuits/Laboratory – May substitute EE 415/416 ..... (EE 321, EE 331, EE 332, EE 432c)	•	X	a
EE 421	4.0	_____	_____	Communication Theory ..... (EE 321)	X	•	•
CHM 121	3.0	_____	_____	Submicroscopic Chemistry ..... (CHM 101 and MTH 127; see Note 2)	X	a	•
CHM 125	2.0	_____	_____	Submicroscopic Chemistry Lab ..... (CHM 121c)	X	a	•
CHM 122	3.0	_____	_____	Macroscopic Chemistry ..... (CHM 121)	•	X	a
CHM 126	2.0	_____	_____	Macroscopic Chemistry Lab ..... (CHM 122c)	•	X	a
EE 481	3.0	D WI	_____	Engineering Physics Design Project* ..... (see Note 7b)	X	a	•
EE 482	3.0	D WI	_____	Engineering Physics Design Project* ..... (see Note 7b)	•	X	a
EP 494	2.0	D	_____	Engineering Physics Design Project* ..... (see Note 7b)	a	a	X
PHY 420	3.0	_____	_____	Thermodynamics* ..... (PHY 244; see Note 7)	X	a	a
PHY 461	4.0	_____	_____	Solid State Physics ..... (PHY 260, MTH 235)	•	X	•
GEN ED	4.0	WI	_____	Choose one from Area II, III, or IV ..... (see Note 6)	a	a	X
---	4.0	_____	_____	Technical Elective* ..... (see Note 8)	a	a	X
---	3.0	_____	_____	Technical Elective* ..... (see Note 8)	a	a	X
---	3.0	_____	_____	Technical Elective* ..... (see Note 8)	a	a	X
<b>Credit Hours Per Quarter in the Model Program .....</b>					<b>15</b>	<b>16</b>	<b>16</b>

## TOTAL PROGRAM CREDIT HOURS

**196.0**

### NOTES :

- Use this guide, advisor consultations, the EE Department Handbook and the Undergraduate Catalog to carefully plan a program of study.** Some courses are offered only once or twice a year. Complete mathematics and physics courses early since they are prerequisite to many engineering courses.
- A grade of "C" or better is required in CHM 121 or PHY 240 for entrance into the College of Engineering.
- Engineering design** is emphasized in courses marked with a "D" in the fourth column. The engineering physics design project integrates the elements of design in a major design experiment. Alternative design sequences provide a major design experience culminating with a capstone course.
- In the right hand columns**
  - (x) denotes courses in a model program with a non-conflicting schedule for a full-time student;
  - (a) denotes courses likely to be available;
  - (•) denotes courses normally not available. Check the Class Schedule for current information.

Please direct all inquiries for summer course availability to the Electrical Engineering office.
- Course numbers in parentheses denote a prerequisite course. Course numbers followed by "c" indicate a co-requisite course.
- Select two additional courses from Areas II, III, or IV, these must be from two different Areas. Except for Area II, the course selected must come from a different subcategory than the course(s) chosen to meet the area requirement.
- Starred (\*) courses** have alternate courses or a selection of courses, which may be used to fulfill the requirement. These include:
  - ME 315, Thermodynamics, may be substituted for PHY 420;
  - An EE Senior Design sequence may be substituted for an EP design project. The project proposal must be approved by the program faculty before registering for a projects course; a WI Technical Elective must be chosen if the design sequence is substituted.
  - The computer programming requirement may be fulfilled by either CEG 220 (C Programming), or EGR 153 (FORTRAN programming). See your faculty advisor for assistance in making these decisions.
  - MTH 233(5) & MTH 253(3) may be substituted for MTH 235.
  - Whichever is selected EE 431 or EE 415, the other may be used as a Technical Elective.
- Technical Elective Requirement.** A minimum of 26 CH is required, **18 of these must be from the College of Engineering and Computer Science.** Courses numbered 200 or higher offered by the Colleges of E&CS, S&M or B&A and approved by your faculty advisor may serve as technical electives. Redundant courses such as MS 201, MTH 228, ME 213 and EE/CEG 260 may not be used as Technical Electives. 12 hours minimum from the table below must be included among your selections.

**D = Design Credit      WI = Writing Intensive**

Technical Electives	Pre/Co-requisites	Fa	Wi	Sp
a) EP 322 4.0 <b>D</b> _____	Applied Optics ..... (MTH 253, PHY 244)	•	a	•
b) ME 317 4.0 <b>D</b> _____	Fluid Dynamics ..... (ME 213, ME 315)	a	•	a
c) ME 318 4.0 <b>D</b> _____	Heat Transfer ..... (ME 317)	a	a	•
d) EP 432 3.0 <b>D</b> _____	Lasers ..... (PHY 242, PHY 244, PHY 260 or CHM 121)	•	•	a
e) CEG 411 4.0 <b>D</b> _____	Microprocessor-Based Systems Design ..... (EE 260, EE 301, EE 302)	•	a	•
f) EP 470 4.0 _____	Introduction to Sensors ..... (EE 303 or PHY 315)	•	•	a
h) EP 401 3.0 <b>D</b> _____	Physics of Semiconductor Devices ..... (EP 400)	•	a	•
g) EE/EP 440 4.0 _____	Nanotechnology ..... (PHY 244/204)	a	•	•
h) EE 410 4.0 _____	Micro ElectroMechanical Systems (MEMS) ..... (PHY 244/204)	a	•	•
i) EE 444 4.0 _____	Linear Integrated ..... (EE 431)	•	a	a
j) EE 415 3.0 _____	Control Systems II ..... (EE 413, EE 414c, EE 415c)	•	a	a
EE 416 1.0 _____	Control Systems II Laboratory .....	•	a	a
k) EE 431 4.0 _____	Electronic Circuits/Laboratory .....	•	a	a