

Appendix I
Section A. Tabular Data for Program

Table I-1A: Basic-Level Curriculum
Engineering Physics - Electrical Option

Year; Semester or Quarter	Course (Department, Number, Title)	Category (Credit Hours)			
		Math & Basic Sciences	Engineering Topics Check if Contains <u>Significant Design</u> (✓)	General Education	Other
Freshman Fall	CHEM 111 General Chemistry I	4	()		
	EE 111 Intro. to Electrical And Computer Engineering		4 ()		
	EE 161 Computer-aided Prob. Solving		4 ()		
	MATH 191 Calculus and Analytic Geometry I	3	()		
	PHYS 213 Mechanics	3	()		
	PHYS 213L Exp. Mechanics	1	()		
				()	
Freshman Spring	ENGL 111G Rhetoric and Composition		()	4	
	EE 261 Digital Design		4 (✓)		
	MATH 192 Calculus and Analytic Geometry II	3	()		
	PHYS 214 Electricity and Magnetism	3	()		
	PHYS 214L Electricity and Magnetism Laboratory	1	()		
	General Education elective		()	3	
Sophomore Fall	ENGL 218G Technical and Scientific Communication		()	3	
	EE 211 AC Circuits		4 ()		
	MATH 291 Calculus and Analytic Geometry III	3			
	PHYS 217 Heat, Light, and Sound	3	()		
	PHYS 217L Experimental Heat, Light, and Sound	1	()		
	General Education Elective		()	3	

**Table I-1A: (cont.) Basic-Level Curriculum
Engineering Physics - Electrical Option**

Year; Semester or Quarter	Course (Department, Number, Title)	Category (Credit Hours)			
		Math & Basic Sciences	Engineering Topics <i>Check if Contains Significant Design</i> (✓)	General Education	Other
Sophomore Spring	EE 221 Electronics I		4 ()		
	EE 311 Signals and Systems		4 ()		
	MATH 392 Ordinary Differential Equations	3	()		
	PHYS 315 Modern Physics	3			
	PHYS 315L Experimental Modern Physics	2	(✓)		
	General Education Elective		()	3	
Junior Fall	EE 301 Vector Principles for Electrical Engineers		3 ()		
	EE 341 Control Systems		4 ()		
	PHYS 451 Intermediate Mechanics		3 ()		
	PHYS 471 Modern Experimental Optics or PHYS475 Advanced Experimental Modern Physics		3 or 2 (✓)		
	General Education Elective		()	3	
			()		
Junior Spring	EE Elective		4 ()		
	PHYS 480 Thermodynamics		3 ()		
	PHYS Elective		3 ()		
	General Education Elective		()	3	

**Table I-1A: (cont.) Basic-Level Curriculum
Engineering Physics - Electrical Option**

Year; Semester or Quarter	Course (Department, Number, Title)	Category (Credit Hours)			
		Math & Basic Sciences	Engineering Topics <i>Check if Contains Significant Design (✓)</i>	General Education	Other
Senior Fall	EE 315 Electromagnetics		4 ()		
	EE 498 Capstone Design I		3 (✓)		
	PHYS 454 Intermediate Modern Physics I		3 ()		
	PHYS 495 Mathematical Physics		3 ()		
	General Education Elective		()	3	
				()	
Senior Spring	EE 499 Capstone Design II		3 (✓)		
	PHYS455 Intermediate Modern Physics II		3 ()		
	PHYS Elective		3 ()		
	General Education Elective		()	3	
				()	
TOTALS-ABET BASIC-LEVEL REQUIREMENTS		32	68 or 69	28	
OVERALL TOTAL FOR DEGREE	128				
PERCENT OF TOTAL		25%	53%	22%	
Totals must	Minimum semester credit hours	32 hrs	48 hrs		
satisfy one set	Minimum percentage	25%	37.5 %		

**Table I-1B: Basic-Level Curriculum
Engineering Physics - Mechanical Option**

Year; Semester or Quarter	Course (Department, Number, Title)	Category (Credit Hours)			
		Math & Basic Sciences	Engineering Topics Check if Contains <u>Significant</u> Design (✓)	General Education	Other
Freshman Fall	MATH 191 Calculus and Analytic Geometry I	3			
	ME 102 Introduction to Mechanical Engineering		1 ()		
	ME 159 Graphical Communications and Design		2 (✓)		
	ME 260 Mechanical Engineering Problem Solving		3 ()		
	PHYS 213 Mechanics	3	()		
	PHYS 213L Exp. Mechanics	1	()		
Freshman Spring	CHEM 111 General Chemistry I	4	()		
	MATH 192 Calculus and Analytic Geometry II	3			
	ME 240 Thermodynamics		3 ()		
	PHYS 214 Electricity and Magnetism	3	()		
	PHYS 214L Electricity and Magnetism Laboratory	1	()		
	General Education elective		()	3	
Sophomore Fall	ENGL 111G Rhetoric and Composition		()	4	
	MATH 291 Calculus and Analytic Geometry III	3			
	ME 236 Engineering Mechanics I		3 ()		
	PHYS 217 Heat, Light, and Sound	3	()		
	PHYS 217L Experimental Heat, Light, and Sound	1	()		
	General Education Elective		()	3	

Table I-1B: (cont.) Basic-Level Curriculum
Engineering Physics - Mechanical Option

Year; Semester or Quarter	Course (Department, Number, Title)	Category (Credit Hours)			
		Math & Basic Sciences	Engineering Topics <i>Check if Contains Significant Design</i> (✓)	General Education	Other
Sophomore Spring	CE 301 Mechanics of Materials		3 ()		
	ENGL 218G Technical and Scientific Communication			3	
	MATH 392 Ordinary Differential Equations	3			
	ME 237 Engineering Mechanics II		3 ()		
	PHYS 315 Modern Physics	3			
	PHYS 315L Experimental Modern Physics	2	(✓)		
Junior Fall	MATH Elective	3	()		
	ME 328 Engineering Analysis I		3 ()		
	ME 338 Fluid Mechanics		3 ()		
	PHYS 461 Intermediate Electricity and Magnetism I		3 ()		
	PHYS 471 Modern Experimental Optics or PHYS475 Advanced Experimental Modern Physics		3 or 2 (✓)		
	General Education Elective		()	3	
Junior Spring	ME 329 Engineering Analysis II		3 ()		
	ME 341 Heat Transfer		3 ()		
	PHYS 462 Intermediate Electricity and Magnetism II		3 ()		
	PHYS Elective		3 ()		
	General Education Elective		()	3	

Table I-1B: (cont.) Basic-Level Curriculum
Engineering Physics - Mechanical Option

Year; Semester or Quarter	Course (Department, Number, Title)	Category (Credit Hours)			
		Math & Basic Sciences	Engineering Topics <i>Check if Contains Significant Design (✓)</i>	General Education	Other
Senior Fall	ME 333 Intermediate Dynamics		3 ()		
	ME 426 Design Project Laboratory I		3 (✓)		
	ME Elective		3 ()		
	PHYS 454 Intermediate Modern Physics I		3 ()		
	PHYS 495 Mathematical Physics		3 ()		
	General Education Elective		()	3	
				()	
Senior Spring	ME 449 Senior Seminar		1		
	ME 427 Design Project Laboratory II		3 (✓)		
	PHYS455 Intermediate Modern Physics II		3 ()		
	General Education Elective		()	3	
	General Education Elective		()	3	
TOTALS-ABET BASIC-LEVEL REQUIREMENTS		36	64 or 65	28	
OVERALL TOTAL FOR DEGREE	136				
PERCENT OF TOTAL		26%	53%	21%	
Totals must satisfy one set	Minimum semester credit hours	32 hrs	48 hrs		
	Minimum percentage	25%	37.5 %		

Table I-2: Course and Section Size Summary
Engineering Physics

Course No.	Title	No. of Sections offered in Current Year	Avg. Section Enrollment	Type of Class			
				Lecture	Laboratory	Recitation	Other
PHYS 213	Mechanics	1	20	100			
PHYS 213L	Experimental Mechanics	1	20		100		
PHYS 214	Electricity and Magnetism	1	20	100			
PHYS 214L	Elec. and Magn. Laboratory	1	18		100		
PHYS 215	Engineering Physics I	4	60	100			
PHYS 215L	Eng. Physics I Laboratory	11	13		100		
PHYS 216	Engineering Physics II	2	75	100			
PHYS 216L	Eng. Phys. II Laboratory	6	13		100		
PHYS217	Heat, Light, and Sound	1	23	100			
PHYS 217L	Exp. Heat, Light, and Sound	2	13		100		
PHYS 315	Modern Physics	1	25	100			
PHYS315L	Experimental Modern Physics	1	15		100		
PHYS 451	Intermediate Mechanics	1	8	100			
PHYS 454	Intermediate Modern Physics I	1	10	100			
PHYS 455	Intermediate Modern Physics II	1	10	100			
PHYS 461	Int. Electricity and Magnetism I	1	10	100			
PHYS 462	Int. Electricity and Magnetism II	1	8	100			
PHYS/EE 471	Modern Experimental Optics	1	3		100		
PHYS 475	Adv. Exp. Modern Physics	1	7		100		
PHYS 480	Thermodynamics	1	7	100			
PHYS 495	Math. Methods of Physics	1	10	100			

Table I-2: (cont.) Course and Section Size Summary
Engineering Physics.

Course No.	Title	No. of Sections offered in Current Year	Avg. Section Enrollment	Type of Class			
				Lecture	Laboratory	Recitation	Other
EE 111	Intro. to Elec. and Comp. Engr.	3	29	75	25		
EE 161	Computer Aided Prob. Solving	2	42	75	25		
EE 211	AC Circuits	2	38	75	25		
EE 221	Electronics	2	46	75	25		
EE 261	Digital Design	2	36	75	25		
EE 301	Vector Principles for EE	2	30	100			
EE 311	Signals and Systems	2	38	75	25		
EE 315	Electromagnetics	2	33	75	25		
EE 341	Control Systems	2	30	75	25		
EE 498	Capstone Design I	14	3		100		
EE 499	Capstone Design II	11	2		100		
CHEM 111	General Chemistry I	6	111	75	25		
ENGL111G	Rhetoric and Composition	54	25	100			
ENGL218G	Tech. and Sci. Communication	32	24	100			
MATH 191	Calculus and Ana. Geometry I	13	36	100			
MATH 192	Calculus and Ana. Geometry II	11	26	100			
MATH 291	Calculus and Ana. Geometry III	8	27	100			
MATH 392	Ordinary Differential Equations	7	35	100			

Table I-2: (cont.) Course and Section Size Summary
Engineering Physics.

Course No.	Title	No. of Sections offered in Current Year	Avg. Section Enrollment	Type of Class			
				Lecture	Laboratory	Recitation	Other
ME 102	Intro. to Mech. Engineering	4	29	100			
ME 159	Graphical Comm. and Design	4	36	100			
ME 236	Engineering Mechanics I	4	25	100			
ME 237	Engineering Mechanics II	4	20	100			
ME 240	Thermodynamics	2	38	100			
ME 260	Mech. Eng. Problem Solving	2	39	100			
ME 326	Mechanical Design	2	26	100			
ME 328	Engineering Analysis I	2	29	100			
ME 329	Engineering Analysis II	2	25	100			
ME 333	Intermediate Dynamics	1	15	100			
ME 338	Fluid Mechanics	2	36	100			
ME 341	Heat Transfer	2	31	100			
ME 425	Design of Machine Elements	2	22				
ME 426	Design Project Laboratory I	2	20		100		
ME 427	Design Project Laboratory II	2	20		100		
ME 449	Senior Seminar	2	19			100	

Table I-3: Faculty Workload Summary in Engineering Physics (Physics Faculty and Staff only)

Faculty Member (Name)	FT or PT (%)	Classes Taught (Course No./Credit Hrs.) Term and Year	Total Activity Distribution		
			Teaching	Research	Other
Robert Armstrong	FT	PHYS471/2 PHYS571/2 FA05 PHYS216/3 SP06	37.5	50	12.5
Matthias Burkardt	FT	PHYS691/3 FA05 PHYS692/3 SP06	25	50	25
Michaela Burkardt	PT 50%	PHYS222/3 PHYS224/1 SP06	50		
Seamus Curran	FT	PHYS212/3 FA05 PHYS575/2 SP06	25	62.5	12.5
Michael DeAntonio	PT 75%	PHYS110G/4 PHYS215/3 FA05 PHYS211/3 PHYS215-01/3 PHYS215-02/3 SP06 PHYS216/3 SSII	62.5		12.5
Peter de Châtel	PT 12.5%	PHYS216/3 FA06			
Michael Engelhardt	FT	PHYS511/3 FA05 PHYS120G/3 SP06	20	67.5	12.5
William Gibbs	PT 50%	PHYS150/3 PHYS476/3 PHYS576/3 FA05	25	12.5	12.5
Thomas Hearn	FT	PHYS211/3 PHYS212L/1 PHYS216L/1 FA05 PHYS212/3 PHYS212L/1 PHYS216L/1 SP06	37.5	50	12.5
Stephen Kanim	FT	PHYS211L/1 PHYS213/3 PHYS213L/1 PHYS215 FA05 PHYS208/3 PHYS209/3 PHYS211L/1 PHYS215L/1 SP06	37.5	37.5	25
Boris Kiefer	FT	PHYS217/3 PHYS217L/1 FA05 PHYS455/3 SP06	25	62.5	12.5

Table I-3: (cont.) Faculty Workload Summary in Engineering Physics (Physics Faculty and Staff only)

Faculty Member (Name)	FT or PT (%)	Classes Taught (Course No./Credit Hrs.) Term and Year	Total Activity Distribution		
			Teaching	Research	Other
Gary Kyle	FT	PHYS454/3 FA05 PHYS315L/2 SP06	25	25	50
Kanani Lee	FT	n/a FA05 PHYS451/3 SP06	25	67.5	12.5
Heinrich Nakotte	FT	PHYS215/3 PHYS461/3 FA05 PHYS462/3 SP06	37.5	50	12.5
James Ni	FT	GPHY530/3 FA05 Sabbatical SP06	12.5	75	12.5
Vassili Papavassiliou	FT	PHYS592/3 FA05 PHYS315/3 PHYS475/2 SP06	37.5	50	12.5
Stephen Pate	FT	PHYS480/3 FA05 PHYS214/3 PHYS214L/1 SP06	25	50	25
Christine Pennise	FT	PHYS110G lab/1 FA05 PHYS120G lab/1 SP06 PHYS 211L&215L/1 in SSI PHYS 214L&216L/1 in SSII	10		90
Thor Stromberg	PT	PHYS215/3 SSI	100		
Jacob Urquidi	FT	PHYS620/3 SP06	12.5	75	12.5
Igor Vasiliev	FT	PHYS561/3 FA05 PHYS488/3 PHYS562/3 PHYS588/3 SP06	37.5	50	12.5

Table I-4: Faculty Analysis (Physics Faculty and Staff in Engineering Physics)

Name	Rank*	FT or PT	Highest Degree	Institution from which Highest Degree Earned & Year	Years of Experience			State in which Registered	Level of Activity (high, med, low, none)		
					Govt./ Industry Practice	Total Faculty	This Institution		Professional Society (Indicate Society)	Research	Consulting/ Summer Work in Industry
Armstrong, Robert	P	FT	PhD	Johns Hopkins U.,1970	7	36	36		low 14, 16, 19	high	low
Birx, Donald	P	FT	PhD	U. of Dayton, 1990	29	3	3		med 7, 9, 11, 19	med	none
Burkardt, Matthias	P	FT	PhD	U. of Erlangen, 1989	4	13	11		low 6	high	none
Burkardt, Michaela	aP	PT	PhD	U. of Erlangen, 1992		4	4		none	none	none
Curran, Seamus	aP	FT	PhD	Trinity College (Dublin) 1995	7	3	3		low 12, 13	high	none
DeAntonio, Michael	aP	PT	PhD	NMSU, 1993	11	5	4		low 2, 6, 7	med	low
de Châtel, Peter	Adj	PT	PhD	Eötvös U. (Hungary)	19	40	5		low 6	med	med
Engelhardt, Michael	aP	FT	PhD	U. of Erlangen, 1994	9	3	2		none	high	none
Gibbs, William	P	FT	PhD	Rice U. , 1961	30	23	15		med 6	high	none
Hearn, Thomas	AP	FT	PhD	Cal Tech, 1985	5	16	16		med 4, 18, 21	high	none
Kanim, Stephen	aP	FT	PhD	U. of Washington, 1999	11	6	6		high 2, 6	high	none
Kiefer, Boris	aP	FT	PhD	U. of Michigan, 2002	2	3	3		low 1, 4, 5, 6, 13	high	none
Kyle, Gary	P	FT	PhD	U. of Minnesota, 1979	5	21	21		low 6	med	none
Lee, Kanani	aP	FT	PhD	UC Berkeley, 2002	2	1	1		low 4, 6	high	none

Table I-4: (cont.) Faculty Analysis (Physics Faculty and Staff in Engineering Physics)

Name	Rank*	FT or PT	Highest Degree	Institution from which Highest Degree Earned & Year	Years of Experience			State in which Registered	Level of Activity (high, med, low, none)		
					Govt./ Industry Practice	Total Faculty	This Institution		Professional Society (Indicate Society)	Research	Consulting/Summer Work in Industry
Nakotte, Heinrich	AP	FT	PhD	U. of Amsterdam, 1994	4	9	9		med 6, 15	high	none
Ni, James	P	FT	PhD	Cornell U., 1984	11	21	21		med 4, 18	high	none
Papavassiliou, Vassili	AP	FT	PhD	Yale U., 1988	7	11	11		none	high	none
Pate, Stephen	AP	FT	PhD	U. of Pennsylvania, 1987	8	11	11		med 2, 6	high	none
Pennise, Christine	S	FT	MS	Johns Hopkins U., 1992	12	7	5		low 2	none	none
Stromberg, Thor	AP	PT	PhD	Iowa State U., 1965	none				none	none	none
Urquidi, Jacob	aP	FT	PhD	Texas Tech, 2001	2	6	3		low 3, 6, 8, 20	high	none
Vasiliev, Igor	aP	FT	PhD	U. of Minnesota, 2000	2	4	4		low 6, 13, 17	high	none

*: P = Professor; AP = Associate Professor; aP = Assistant Professor; Adj = Adjunct Faculty; S = Staff

Professional Societies:

1. American Association for the Advancement of Science
2. American Association of Physics Teachers
3. American Chemical Society
4. American Geophysical Union
5. American Mineralogical Society
6. American Physical Society
7. American Society for Engineering Educators
8. American Vacuum Society
9. Association of Old Crows
10. Incorporated Research Institute for Seismology
11. Institute of Electrical and Electronics Engineers
12. Micro and Nanotechnology Commerc. Education Foundation
13. Materials Research Society
14. National Scientific Research Society
15. Neutron Scattering Society of America
16. Optical Society of America
17. Phi Kappa Phi
18. Seismological Society of America
19. Sigma Xi
20. Society for the Advancement of Chicanos and Native Americans in Science
21. Society of Exploration Geophysicists

TableI-5: Support Expenditures (Department of Physics)

Expenditure Category	Fiscal Year			
	2002-03	2003-04	2004-05	2005-06
Operations (not including staff)	\$125,994	\$118,573	\$91,222	\$99,000
Travel	\$13,571	\$10,604	\$9,334	\$6,000
Equipment	\$27,298	\$31,960	\$30,280	\$20,000
(a) Institutional Funds	\$26,083	\$27,795	\$30,280	\$20,000
(b) Grants and Gifts	\$1,215	\$4,165	\$0	\$0
Graduate Teaching Assistants	\$248,960	\$246,387	\$257,803	\$265,728
Part-time Assistance				
Non-teaching	\$13,488	\$15,602	\$23,219	\$24,900
Teaching (other than TA)	\$73,900	\$68,670	\$70,550	\$53,950