

Electrical Engineering
Undergraduate Advising Handbook

Curriculum Years

2008-2009

2009-2010

2010-2011

2011-2012

2012-2013

2013-2014

2014-2015

October 2014

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Summary of Curriculum Requirements (Electrical Engineering)

2008-2009 and 2009-2010

Total Credits Required = 126, consisting of:

- **Required Courses (96 credit hours)**
- **Restricted Electives (30 credits) – Courses which must be selected from the following lists, some of which include additional restrictions:**
 - **Technical Electives – 9 credit hours (List T)**
 - 2 courses must be from the same Subject Area (depth requirement)
 - **Advanced Math Elective – 3 credit hours (List M)**
 - **Communications Elective – 3 credit hours (List C)**
 - **Arts and Humanities Electives – 6 credit hours (List H)**
 - 1 Literature course
 - 1 Non-Literature course
 - **Social Science Electives – 6 credit hours (List S)**
 - 2 courses from different fields
 - **5th Art and Humanities or Social Science Elective – 3 credit hours**
 - 1 additional course from List 5HS

Science and Technology in Society (STS) Requirement - A course selected as an Arts and Humanities Elective or a Social Science Elective also can satisfy the Science and Technology requirement if it is marked with *.

Cross-Cultural Awareness (CCA) Requirement - A course selected as an Arts and Humanities Elective or a Social Science Elective also can satisfy the Cross-Cultural Awareness requirement if it is marked with **.

e-Portfolio Requirement – As a condition for graduation, each student must submit an e-portfolio which meets the university's standards for approval.

Electrical Engineering

Bachelor of Science Degree

Curricula years 2008-2009, 2009-2010

FRESHMAN YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
ENGR 1020 Intro Engr	2		CH 1020 & 1021 Gen Chemistry II	4	
CH 1010 & 1011 Gen Chemistry I	4		ENGR 1410 & 1411 Problm solvng	3	
ENGL 1030 Comp I	3		MATH 1080 Calc II	4	
MATH 1060 Calc I	4		PHYS 1220 Phys I	3	
Hum/Soc Sci req	3		Hum/Soc Sci req	3	
	16			17	

SOPHOMORE YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
CPSC 1110 & 1111 C/C++	3		ECE 2120 Circuits Lab II	1	
ECE 2010 Logic	2		ECE 2620 Circuits II	3	
ECE 2020 Circuits I	3		ECE 2720 Comp Org	3	
ECE 2090 Logic Lab	1		ECE 2730 Comp Org Lab	1	
ECE 2110 Circuits Lab I	1		MATH 2080 Diff Eq	4	
MATH 2060 Calc III	4		Hum/Soc Sci req OR EE Tech Elec	3	
PHYS 2210 Physics II	3		[ECE 2220 Sys Progrmng]		
	17			15	

JUNIOR YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
ECE 3110 Lab III	1		ECE 3120 Lab IV	1	
ECE 3200 Electronics I	3		ECE 3170 Random Signal	3	
ECE 3300 Signals/Sys	3		ECE 3210 Electronics II	3	
ECE 3710 Micro Inter	3		ECE 3600 Power Engineering	3	
ECE 3720 Micro Inter Lab	1		ECE 3810 Fields, Waves	3	
ECE 3800 Electromagnetics	3		ENGL 3140 Tech writing	3	
Adv. Mathematics Elective ¹	3				
	17			16	

SENIOR YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
COMM 1500 & 1501 or COMM 2500 & 2501	3		ECE 4960 Systems Des II	2	
ECE 4090 Syst. Des	3		EE Tech Elec OR	3	
ECE 4270 Comm Systems	3		Hum/Soc Sci req		
ECE 4950 Systems Design I	2		EE Tech Depth Elec	3	
E E Tech Elec	3		Hum/Soc Sci req	3	
	14			14	

NOTES:

1. Advanced Mathematics Elective Options: MATH 4190, MATH 4340, MATH 4350, MATH 4530, MATH 4540.
2. No student may enroll in ECE courses until all pre-requisites have been passed with a grade of C or higher.
3. All EE majors must have a cumulative and Engineering GPR of 2.0 to enroll in any 300- or 400-level ECE course.
4. No student may exceed a maximum of two attempts, excluding a W, to successfully complete any ECE course.

2008-2009, 2009-2010 academic year

Updated 16 March 2014

Electrical Engineering Technical and Technical Depth Requirements

Courses that satisfy EE technical and technical depth requirements are shown below. Three courses (9 credits) must be taken, at least two of which must come from the same Subject Area, to satisfy the Depth Requirement. The 6xx version of courses listed as *ECE 4xx have been approved for the combined BSEE/MSEE program. Students who qualify for the combined program can use up to 9 credits of approved courses to jointly satisfy MSEE and MSEE requirements. The EE Student Handbook includes a list of ECE 8xx courses which have also been approved for the combined program.

Subject Area	Course	Semester offered	Pre-requisites
Computer Systems And Architecture [CSA]	ECE 4170	Spring	ECE 3220, ECE 3520, MATH 4190
	ECE 4290	Fall	ECE 2720
	*ECE 4420	Fall	ECE 3220, ECE 3520
	*ECE 4680	Spring	ECE 2230 and ECE 3710
	ECE 4730	Fall or Spring	ECE 3220
Biomedical Systems	BIOE 2010		BIO E 1010 or BIOL 1030 or 1100; CH 1020
	BIOE 3700		ECE 2020, MATH 2080
	BIOE 4710		MATH 2080, PHYS 2210, ECE 3200
Communication Systems & Networks [CSN]	* ECE 4300	Fall or Spring	ECE 3170, 3300 AND instructor permission
	* ECE 4380	Spring	Sr. standing in EE, CpE or CPSC
	* ECE 4400	Spring	ECE 2720 and ECE 3170
Digital Signal Processing [DSP]	* ECE 4420	Fall	ECE 3220 and ECE 3520
	* ECE 4670	Fall & Summer	ECE 3300
Applied Electromagnetics [AEM]	* ECE 4350	Spring	ECE 3810
	* ECE 4360	Fall	ECE 3810, co-req MATH 3110 or 4340
	* ECE 4390	Check with the dept	ECE 3810, co-req MATH 4340
	* ECE 4460	Spring	ECE 3300, 3810; MATH 3110 or 4340
Electronics [ELE]	* ECE 4040	Fall	ECE 3200, co-req MATH 3110 or 4340
	* ECE 4060	Fall	ECE 3200, co-req MATH 3110 or 4340
	* ECE 4220	Check with the dept	ECE 3210, 3300, 3600, 3710, 3810
	* ECE 4320	Spring	ECE 3210, co-req MATH 3110 or 4340
	* ECE 4590	Check with the dept	ECE 3210, co-req MATH 3110 or 4340
Intelligent Systems [CRB]	* ECE 4420	Fall	ECE 3220 and ECE 3520
	* ECE 4550	Summer	MATH 2060, 3110
	ECE 4570	Summer	ECE 2070 or ECE 3200
	* ECE 4670	Fall & Summer	ECE 3300
	* ECE 4680	Spring	ECE 3710 and ECE 2230
Power [POW]	* ECE 4180	Fall	ECE 3600, 3800
	* ECE 4190	Spring	ECE 3210, 3600, 3800, co-req MATH 4340
Renewable Energy and Electric Vehicles	* ECE 4190	Spring	ECE 3210, 3600, 3800, co-req MATH 4340
	ECE 4200	Spring	ECE 2070 or ECE 3200
	ECE 4570	Summer	ECE 2070 or ECE 3200
	ECE 4610	Fall	ECE 3200
	ECE 4700	Spring	ECE 3200
	ECE 4710	Spring	ECE 3200

Other courses: ECE 2220¹, ECE 4050², ECE 4600², ECE 4910² [HON], ECE 4920², ECE 4930², ECE 4990², ECE 4990² [HON]

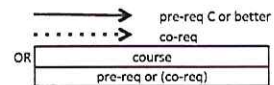
¹ This course may be selected as a technical elective.

² If approved by a subject area committee, one of these courses can be used to satisfy the depth requirement.

2008-2009, 2009-2010 academic year

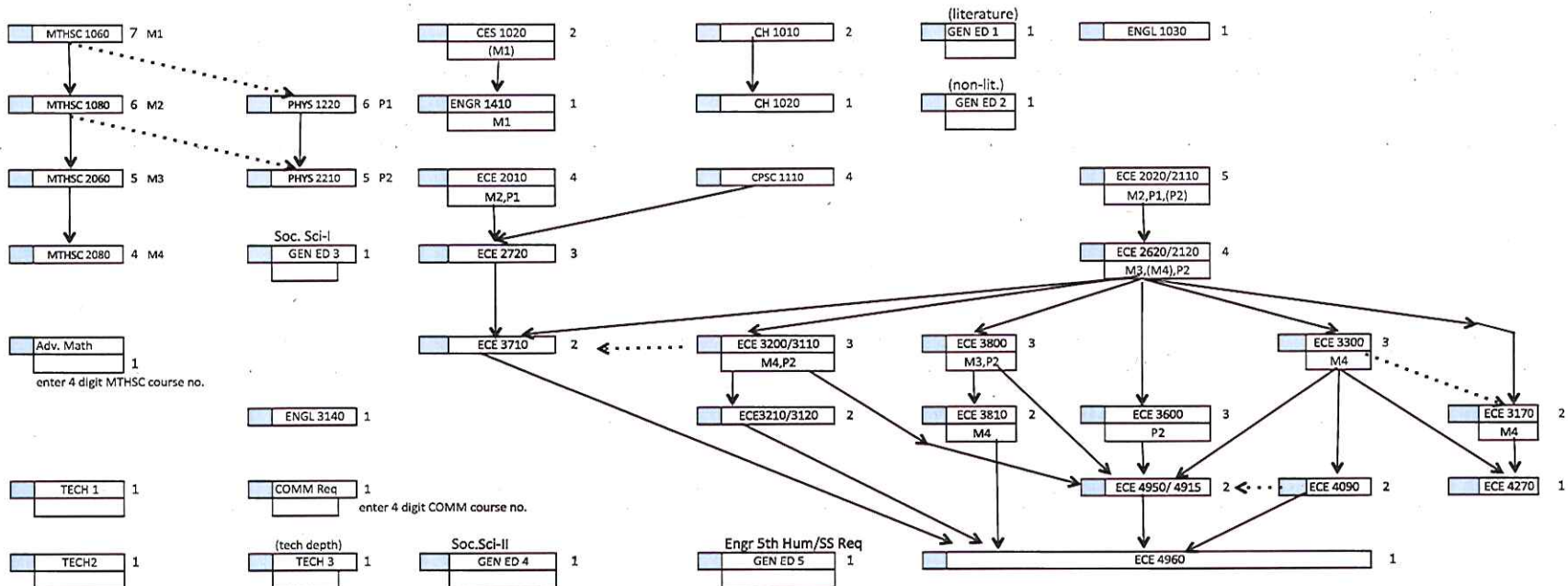
Updated 16 March 2014

ELECTRICAL ENGINEERING CURRICULUM 2008-2009 and 2009-2010



Name _____
CU id _____

Date _____



INSTRUCTIONS:

In the small box to the left of course no:

Enter 1 if you propose to take this course during the next term. (box will turn yellow)

Enter 2 if you are currently enrolled in this course. (Box will turn orange.)

Enter 3 if you have successfully completed this course. (Box will turn green.)

NOTES

29-Oct-13

Minimum No. of Additional Terms to Graduate
(if currently enrolled, this includes current term)

7

Used to satisfy CCA: _____

Used to satisfy STS: _____

e-portfolio completed? _____

LIST H – Arts and Humanities Electives (2008-2009 and 2009-2010)

(The following list was compiled from the General Education Sections of the 2008-2009 University Announcements and the 2009-2010 University Announcements. Notes are provided to flag courses which are included for only one of the above curriculum years. Notes are also provided to flag courses which are included for both curriculum years, but which satisfies the STS and/or CCA requirements for only one of the curriculum years.)

Credits Required: 6

Restrictions:

- One course must be selected from Literature courses.
- One course must be selected from Non-Literature courses

Note: Courses on the Non-Literature list which also satisfy the Science and Technology in Society (STS) requirement or the Cross-Cultural Awareness (CCA) requirement are marked with * or **, respectively. (If courses selected to satisfy the Non-Literature requirement or the Social Science requirement do not also satisfy the CCA requirement and the STS requirement, then additional courses must be selected from the CCA and/or STS course lists shown in the University Announcements.)

Literature Courses (2008-2009 and 2009-2010)

ENGL 2020 The Major Forms of Literature 3(3) Study of the basic structures and elements of fiction, poetry, and drama, including literary and critical theory, with readings in American, British, and world literature. Proficiency in composition must be demonstrated. Includes Honors sections. *Preq:* ENGL 1030.

ENGL H210 Introduction to Literary Study 3(3) Literature and composition course for honors students who have exempted ENGL 101 and 102. Readings in American, English, and world literature and advanced training in writing and research. *Preq:* Exemption from ENGL 101 and 102 or consent of instructor.

ENGL 2120 World Literature 3(3) Introduction to selected works from the Americas, Africa, Asia, Europe, and the Middle East from ancient to modern eras, with emphasis on major authors. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2130 British Literature 3(3) Introduction to selected authors and major periods of the British literary tradition, from the Middle Ages to World War II, with attention to poetry, fiction, and drama. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2140 American Literature 3(3) Introduction to selected authors and major periods of the American literary tradition from 1620 to 1945. Includes Honors

sections. *Preq:* ENGL 1030.

ENGL 2150 Literature in 20th- and 21st- Century Contexts 3(3) Introduction to major contemporary cultural movements via selected authors in 20th- and 21st-century literature, primarily American and British, with attention to poetry, fiction, and drama since World War II. Includes Honors sections. *Preq:* ENGL 1030.

C H S H190 Calhoun Scholars Colloquium: Arts and Humanities (Literature) 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the “idea of the University.” Explores key literary works that enhance understanding of historical eras, intellectual and artistic movements, or cultures. Topics vary. *Preq:* Membership in Calhoun Honors College.

CHIN 4010 Pre-Modern Chinese Literature in Translation 3(3) Chinese literature from 8th century B.C.E. to 19th century C.E., including poetry, prose, drama, fiction, and literary criticism. All readings and discussions are in English.

FR 3000 Survey of French Literature 3(3) Study of selected masterpieces of French literature in their artistic, cultural, and historical context. May include theme and genre studies. *Preq:* FR 2020.

FR 3040 French Short Story 3(3) Introduction to the study of French narrative literature and the elements of critical analysis through the examination of short stories spanning the medieval era to the present from both France and Francophone countries. *Preq:* FR 3050.

GER 2600 Selected Topics in German Literature 3(3) Study of significant aspects of German literature. Conducted in English.

GER 3060 The German Short Story 3(3) Examines the Austrian, German, and Swiss short story as a distinct literary genre that flourished particularly after 1945. Provides ample conversation and composition practice, as well as an introduction to principles of literary prose analysis. *Preq:* GER 2020.

ITAL 3010 Introduction to Italian Literature 3(3) Study of selected texts of Italian literature in their artistic, cultural, and social context. May include theme and genre studies. *Preq:* ITAL 2020.

ITAL 3020 Modern Italian Literature 3(3) Study of selected works from major 19th- and 20th-century Italian authors, including Manzoni, Verga, Svevo, Moravia, Ginzburg. *Preq:* ITAL 2020.

JAPN 4010 Japanese Literature in Translation 3(3) Introduction to Japanese literature from 712 AD to the present. Cultivates an appreciation for Japanese literature and culture. All readings and discussions are in English. May not be used to satisfy general foreign language requirements.

JAPN 4060 Introduction to Japanese Literature 3(3) Students read contemporary Japanese narrative fiction, poetry, and drama in their historical and social context. *Preq:* 3000-level Japanese course.

RUSS 3600 Russian Literature to 1910 3(3) Study of key texts in the modern literary tradition in Imperial Russia from Pushkin to Chekhov. Readings and lectures are in English.

RUSS 3610 Russian Literature Since 1910 3(3) Study of key texts in modern Russian and Soviet literature with particular focus on Russian modernist movements and Socialist Realism. Readings and lectures are in English.

SPAN 3110 Survey of Spanish-American Literature 3(3) Literary movements, influences, authors, and works from the Colonial period to the present. *Preq:* Six credits in Spanish at the 300 level, including at least one course in literature or culture.

SPAN 3130 Survey of Spanish Literature I 3(3) Literary movements, influences, and authors from the beginning to the end of the 17th century; representative works, discussions. *Preq:* Six credits in Spanish at the 3000 level, including three credits of literature or culture.

Non-Literature Courses (2008-09 and 2009-10)

AAH 1010 Survey of Art and Architectural History I 3(3) Comprehensive survey of art and architectural history of Western heritage as well as significant coverage of Asian, African, native American, and south American art. The arts are studied within the contexts of history, geography, politics, religion, and culture. Survey includes Ancient through Gothic. Includes Honors sections.

**** AAH 2100 Introduction to Art and Architecture 3(3)** One-semester lecture survey that introduces the nonmajor to an overview of art and architecture from different time periods and cultures. Students are encouraged to appreciate the contribution to art made by the great masters and to discern different styles, art techniques, and creative traditions. Includes Honors sections.

**** ASL 3050 Deaf Studies in the United States 3(3)** In-depth look into language, culture, and daily lives of approximately one million people who use American Sign Language as their primary language. Traces the roots of American Sign Language from pre-revolutionary times to current science and knowledge and how it applies to professional fields. *Preq:* ASL 2020.

C H S H191 Calhoun Scholars Colloquium: Arts and Humanities 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the “idea of the University.” Explores historical eras, intellectual and artistic

movements, or cultures emphasizing multiple tools of analysis, including literature, art, music, and film. Topics vary. *Preq:* Membership in Calhoun Honors College.

* **C H S H201 Structures and Society 3(3)** Interdisciplinary honors seminar that examines selected structures regarded as monuments to artistic creativity and technological genius and the ways that structures affect and are affected by the societies that produce them. *Preq:* Membership in Calhoun Honors College.

C H S H203 Society, Art, and Humanities 3(3) Combines readings and methodologies from the social sciences, arts, and humanities to study the interrelationships among the disciplines and their societal effects. Subjects vary. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

C H S H210 Experiencing the Arts 3(2,3) Interdisciplinary exploration of the arts through seminar discussions and attendance at performing and visual arts events on campus. Exploration of arts and aesthetics leading to performance previews, reviews, and experiences of Brooks Center and Lee Gallery events. May be repeated for a maximum of nine credits. *Preq:* Membership in Calhoun Honors College.

CHIN 4990 Selected Topics in Chinese Culture 3(3) Examination of various social and cultural topics, including art and literature, philosophical and religious traditions, health and healing, and folk and popular cultures. May be repeated for a maximum of six credits, but only if different topics are covered. Readings and discussions are in English. May not be used to satisfy general foreign language requirements.

COMM 3030 Communication Law and Ethics 3(3) Major topics in communication law and free expression and in communication ethics. *Preq:* COMM 2010 with a *C* or better.

COMM0 3040 Youth, Media, and Culture 3(3) Grounded in the cultural studies paradigm, examines the relationship among youth, mass media, and popular culture. Focuses on issues such as how youth are portrayed in media, how youth navigate the products of mass media/culture, and how youth creates its own media culture. *Preq:* COMM 2010 with a *C* or better.

COMM 306 Discourse, Criticism, and Society 3(3) Students explore theoretically-grounded methods of critical and cultural description, analysis, interpretation, and evaluation of public discourse. *Preq:* COMM 201 with a *C* or better.

COMM 3080 Public Communication and Popular Culture 3(3) Examines artifacts of popular culture, paying particular attention to their relationship to politics and public life. Explores the structures and constraints of the culture industry. Students apply communication principles to various examples. *Preq:* COMM 201 with a *C* or better.

COMM 3090 Visual Discourse and the Public 3(3) Examines the role of visuality in society and the cultural implications for ways of seeing. Using visual artifacts of various types, students learn the logic of visual representation. *Preq:* COMM 201 with a C or better.

COMM 4020 Mass Communication: History and Criticism 3(3) Critical examination of mass communication in America, including discussions of history, theory, and current issues in television, film, popular music, telecommunications, and other media. *Preq:* COMM 201 with a C or better.

ENGL 3550 Global Studies in Popular Culture 3(3) Examination of the nature, functions, history, and impact upon American society of best sellers, popular magazines, television, movies, Internet, gaming platforms, and emerging electronic genres. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

ENGL 3570 Film 3(2) Examination of the film medium as an art form: its history, how films are made, why certain types of films (western, horror movies, etc.) have become popular, and how critical theories provide standards for judging film. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150. *Coreq:* ENGL 3571.

FR 3070 French Civilization 3(3) Study of significant aspects of French culture from its origins to the present. *Preq:* FR 3050.

GW (ENGL) 3010 Great Books of the Western World 3(3) Introduces Great Works minor. Includes readings about the Great Books concept, as well as various great books from the humanities, arts, and natural and social sciences. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

GW 4050 The Darwinian Revolution 3(3) Examination of Charles Darwin's *The Origin of Species* and its cultural impact from his time to ours. Topics include the contemporaneous reception of Darwin's work, the Scopes Monkey trial, and more recent controversies over Creationism and Intelligent Design. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

GER 3400 German Culture 3(3) Examines the cultures of German-speaking nations from their origins to the present. Emphasizes the federal republic of Germany both before and after the German unification of 1990. *Preq:* GER 2020.

HUM 3010 Humanities 3(3) Introduction to humanistic studies focusing on relationships among disciplines—painting, sculpture, architecture, music, literature, philosophy, and drama—beginning with prehistory and continuing to the Renaissance.

HUM 3020 Humanities 3(3) Introduction to humanistic studies focusing on relationships among disciplines—painting, sculpture, architecture, music, literature, philosophy, and drama—beginning with the 17th century and continuing to the present.

HUM 3060 Creative Genius in Western Culture 3(3) Investigation of creativity through study of great innovators in art, literature, music, and ideas. May be repeated once for credit.

****HUM 3090 Studies in Humanities 3(3)** Interdisciplinary approach to the humanities. Special subject matter varies according to the instructor and as approved by the chair of the English Department. May be repeated once for credit.

JAPN 3070 Japanese Civilization I 3(3) Study of the significant aspects of the culture of Japan. *Preq:* JAPN 2020.

JAPN 3080 Japanese Civilization II 3(3) Study of significant aspects of the culture of Japan. *Preq:* JAPN 2020.

LANG 3400 Cosmopolis: The Myth of the City 3(3) Cross-cultural inquiry into the idea of the city through literary, political, and philosophical texts as well as film and architecture. *Preq:* Junior standing.

LANG 3420 Sacred and Profane Bodies 3(3) Cross-cultural inquiry into the ambivalence surrounding female sexuality implicit in images of women and, in particular, the division of women into earthly and divine categories. *Preq:* Junior standing.

LANG 3460 Walking and the Road 3(3) Cross-cultural inquiry into the epistemological, political, and aesthetic questions generated by walkers and the roads they travel in literature, philosophy, and film.

LANG 3480 The Child and the Adolescent 3(3) Cross-cultural inquiry into important theoretical questions of personal and political identity raised by the figure of the child and the adolescent in literature and film.

LANG 3560 Faces of Evil 3(3) Cross-cultural inquiry into evil as an ineradicable challenge to representation disclosed by notions of the monstrous, the enemy, the infinite, and death in literature, cultural theory, and the arts. *Preq:* Junior standing.

LANG (ENGL) 4540 Selected Topics in International Film 3(2) Presents subtitled films of specific world cultures and basic film theory and discourse applicable to the selected areas. Taught in English. May be repeated for a maximum of six credits with consent of department chair. *Preq:* ENGL 3100. *Coreq:* ENGL 4541.

****MUSC 2100 Music Appreciation: Music in the Western World 3(3)** Deepens students' appreciation of their musical heritage through study of the elements of the musical language and its development in Western culture. Includes Honors sections.

MUSC 3110 History of American Music 3(3) Music in America from 1620 to the present. Indigenous and borrowed influences are examined.

MUSC 3120 History of Jazz 3(3) Comprehensive survey of jazz elements and styles. A historical perspective from Dixieland to bebop to jazz/rock is included.

MUSC 3130 History of Rock and Roll 3(3) Comprehensive survey of rock elements, styles, and artists. Emphasizes the evolution of rock and roll including a broad examination of musical influences. Course content examines how rock and roll both reflected and influenced social issues.

****MUSC 3140 World Music 3(3)** Introduction to ethnomusicology and music of the world's peoples. Emphasis is placed on music through culture.

MUSC 3170 History of Country Music 3(3) Chronological study of country music origins, styles, and artists. Emphasizes the evolution of country music from a cultural expression of the South to a commercial art form of worldwide appeal.

MUSC 3610 Marching Band 1(3) Ensembles: devoted to musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. Offered fall semester only. *Preq:* Consent of director.

MUSC 3620 Symphonic Band 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3630 Jazz Ensemble 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3640 Concert Band 1(2) Devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3690 Symphony Orchestra 1(3) Mid-sized, college-community orchestra devoted to performing works from standard repertoire. Weekly evening rehearsals with one or more performances per semester. *Preq:* Consent of director.

MUSC 3700 Clemson University Singers 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3710 Women's Glee 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3720 Men's Glee 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given in addition to the minimum rehearsal time. *Preq:* Consent of director.

PHIL 1010 Introduction to Philosophic Problems 3(3) Discussion of representative philosophical questions that arise from human thought and action. Characteristic topics are values, knowledge, human nature, and society. Includes Honors sections.

PHIL 1020 Introduction to Logic 3(3) Introduction to methods of evaluating arguments. Gives simple valid argument forms, which can be joined together to produce the logical form of virtually any argument. Informal fallacies may also be considered. Includes Honors sections.

PHIL 1030 Introduction to Ethics 3(3) Philosophical consideration of the nature of ethics, basic ethical issues, and problems and modes of ethical reasoning. Includes Honors sections.

***PHIL 1240 Technology and Its Discontents 3(3)** Philosophical introduction to issues arising from the development of technologies, their implementation, and their integration into society. Considers theoretical questions regarding the nature of technology and its evaluation, as well as issues related to specific technologies.

***PHIL 2100 Evolution and Creation 3(3)** A critical comparison of evolution and creationism. Students examine the scientific, philosophical, and theological issues this clash brings to light, develop their ability to think through the various claims and counter claims critically, and then articulate a coherent position for themselves. Credit toward a degree will be given for only one of PHIL 2100 or BIOL 2100.

PHIL (CHIN) 3120 Philosophy in Ancient China 3(3) Study of the history of Chinese philosophy from fifth century BCE, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

PHIL (CHIN) 3130 Philosophy in Modern China 3(3) Study of the history of Chinese philosophy from the 19th century to the present, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

PHIL 3160 Modern Philosophy 3(3) Development of the modern view as seen in major Western philosophers of the 16th, 17th, and 18th centuries. Thought of Berkeley, Descartes, Hume, Leibniz, Locke, and Spinoza may be considered to illustrate the development of rationalism and empiricism.

PHIL 3170 Nineteenth-Century Philosophy 3(3) Development of 19th-century philosophy emphasizing selected works of philosophers such as Kant, Hegel, Marx, Nietzsche, and Kierkegaard.

PHIL 3180 Twentieth-Century Philosophy 3(3) Historical overview of selected significant movements in 20th-century Western philosophy such as Continental and/or analytic philosophy.

PHIL 3230 Theory of Knowledge 3(3) Examination of concepts, criteria, and decision procedures underlying rational belief and the justification of knowledge claims. Representative answers to the problem of skepticism are considered, with special attention to some leading theories of knowledge.

***PHIL 3240 Philosophy of Technology 3(3)** Examines technology and representative philosophical assessments of it with a focus on understanding its impact on the human condition.

PHIL 3250 Philosophy of Science 3(3) Philosophical study of problems generated by science, but that are not themselves scientific, such as what comprises a scientific theory; how scientists formulate theories and acquire knowledge; what, if anything, differentiates science from other ways of knowing; what role concepts play in scientific knowledge; whether scientific progress is rational.

***PHIL 3260 Science and Values 3(3)** Examination of several features of the relation between science and values. Topics may include ethical and social obligations of scientists, role of value judgments in scientific practice, and influence of social and political values on science and scientists.

PHIL 3270 Philosophy of Social Science 3(3) Inquiry into the philosophical foundations of social science, in particular questions of objectivity, explanatory structure, causality, agency, normativism and naturalism, and social determination of knowledge.

PHIL 3440 Business Ethics 3(3) Study of ethical issues created by business activities, relating them to fundamental questions of ethics generally. Representative topics may include hiring, firing, promotions, business and minorities, organizational influence in private lives, consumer interests, economic justice, and reindustrialization.

***PHIL 3450 Environmental Ethics 3(3)** Study of ethical problems in our dealings with the rest of nature and of how they relate to ethics in general. Representative topics include the basis of ethics, nature and intrinsic value, duties to future generations, economics and the environment, rare species, animal rights, ethics and agriculture, energy doctrine.

****REL 1010 Introduction to Religion 3(3)** Study of the variety of religious experience and expression in human life.

****REL 1020 World Religions 3(3)** Survey of major religious traditions of the world. Includes Honors sections.

REL 3010 The Old Testament 3(3) Survey of the books of the Old Testament with special consideration given to the development of the concepts, institutions, and theology of the ancient Hebrews.

REL 3020 Survey of New Testament Literature 3(3) Study of the books of the New Testament from the standpoint of their occasion, content, literary form, and basic theology.

REL 3030 The Quran 3(3) Survey of Islamic Scripture, its origins, content, and interpretation, with attention to the development of Hadith and Sunna as well.

REL 3060 Judaism 3(3) Examines the development of Judaism from biblical to modern times.

REL 3070 The Christian Tradition 3(3) Examination of the development of Christianity in Western civilization from the post-New Testament period to the present, stressing institutional growth and changes, theological currents, and interaction of Christianity with culture.

REL 3150 Islam 3(3) A study of the origins, development, and history of the religion of Islam and Islamic cultures from the time of the Prophet to the present.

RUSS 3400 Russian Culture of the Nineteenth Century 3(3) Study of achievements in art, science, music, and literature in Russia during the 19th century. Taught in English.

***STS 1010 Survey of Science and Technology in Society 3(3)** Surveys historical, philosophical, and social studies of science; introduces the basic requisites for

scientific and technological literacy; and considers the problems of responsible participation in a scientifically and technologically advanced society.

***STS 1020 Ideas, Machinery, and Society 3(3)** Interdisciplinary discussion course introducing the fundamental themes of STS: the influence of social groups on the development of science and technology and the effects of science and technology on society.

SPAN 3070 The Hispanic World: Spain 3(3) Introduction to the significant aspects of the culture of Spain from its origins to the present. Emphasizes the artistic, social, historical, political, and contemporary issues of the Iberian Peninsula. *Preq:* SPAN 2020.

SPAN 3080 The Hispanic World: Latin America 3(3) Introduction to the significant aspects of the culture of Spanish-American countries. Emphasis is placed on the development of the political, economical, geographical, social, and artistic aspects of Spanish America from the indigenous period to the present. *Preq:* SPAN 2020.

THEA 2100 Theatre Appreciation 3(3) Examination of the theatre event approached through historical context, play reading, analysis of production practices, and field trips to live dramatic performances. Includes Honors sections.

THEA 2790 Theatre Practicum 1(0,3) Practical work in theatre on a production designed for public presentation. May be repeated for a maximum of four credits.

THEA 3150 Theatre History I 3(3) Historical survey of Western theatre. Emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from antiquity to the Renaissance. *Preq:* Sophomore standing.

THEA 3160 Theatre History II 3(3) Historical survey of Western theatre. Emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from the Renaissance to the present. *Preq:* Sophomore standing.

THEA 3170 African-American Theatre I 3(3) Acquaints students with the origin and development of African-American playwrights, plays, players, and their contributions to the American theatre from the 19th century to the Civil Rights Movement.

WS 3010 Introduction to Women's Studies: Women's Lives 3(3) Interdisciplinary course exploring the unique features of women's lives from childhood to old age. Content is based on new research in many disciplines, including psychology, sociology, history, literature, and the arts. *Preq:* Sophomore standing

LIST S – Social Science Electives (2008-2009 and 2009-2010)

((The following list was compiled from the General Education Sections of the 2008-2009 University Announcements and the 2009-2010 University Announcements. Notes are provided to flag courses which are included for only one of the above curriculum years. Notes are also provided to flag courses which are included for both curriculum years, but which satisfies the STS and/or CCA requirements for only one of the curriculum years.))

Credits Required: 6

Restrictions:

- Courses must be selected from two different fields.

Note: Courses on the Social Science list below which also satisfy the Science and Technology in Society (STS) requirement or the Cross-Cultural Awareness (CCA) requirement are marked with * or **, respectively. (If courses selected to satisfy the Non-Literature requirement or the Social Science requirement do not also satisfy the CCA requirement and the STS requirement, then additional courses must be selected from the CCA and/or STS course lists shown in the University Announcements.)

****ANTH 2010 Introduction to Anthropology 3(3)** Offers a four-field overview: primates and human biological origins; the development of agriculture and complex societies in the archaeological record; contemporary human societies cross-culturally; and the relationship between languages and cultures. An anthropological perspective on contemporary human problems is also presented.

APEC 2020 Agricultural Economics 3(3) Analytical survey of the various subdivisions of agricultural economics, including farm organization, enterprise, land economics, marketing, farm prices, governmental farm policies, and the relation of agriculture to the national and international economy.

APEC 2570 Natural Resources, Environment, and Economics 3(3) Economic principles applied to resource allocation problems related to environmental and natural resource issues.

C H S H192 Calhoun Scholars Colloquium: Social Science 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the “idea of the University.” Explores foundations and consequences of human thought and behavior at the individual and societal levels, with emphasis on concepts and tools that organize scholarly inquiry across the social and behavioral sciences. Topics vary. *Preq:* Membership in Calhoun Honors College.

C H S H202 Science, Culture, and Human Values 3(3) Interdisciplinary honors seminar that unifies natural scientific, social scientific, and humanistic disciplines into a holistic view of the modern world and its future. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

ECON 2000 Economic Concepts 3(3) One-semester survey of basic economic concepts that offers an overview of both microeconomics and macroeconomics. Not intended for business majors or other students seeking a comprehensive introduction to economic analysis and its applications. Credit will not be given to students who have received credit for ECON 2110 or 2120.

ECON 2110 Principles of Microeconomics 3(3) Introduction to economic reasoning and its application to the study of the behavior of consumers and business firms. Particular topics include competition, monopoly, international trade, and the impact of selected public policies. Intended as the first of a two-semester sequence in the foundations of economics. Includes Honors sections.

ECON 2120 Principles of Macroeconomics 3(3) Continuation of ECON 2110 in which fundamental economic principles are applied to the study of aggregate economic performance. Topics include the forces determining the rates of inflation, unemployment, and economic growth, with particular emphasis on the influence of fiscal and monetary policies through financial markets. Includes Honors sections. *Preq:* ECON 2110.

GEOG 1010 Introduction to Geography 3(3) Survey of the nature of geography emphasizing the discipline's organizing themes of earth science, relations between people and their environments, interrelations between places, locational analysis, and area studies.

****GEOG 1030 World Regional Geography 3(3)** Systematic and descriptive survey of the major regions of the world, including their physical and cultural features. Provides a global context for courses in the social sciences and humanities.

GEOG 1060 Geography of the Physical Environment 4(3,3) Examines the condition of the physical environment, especially the earth's surface and the processes that act on it. Topics range from earth-sun relations to the evolution of landscapes; human habitats and human alteration of the environment. *Coreq:* GEOG 1061.

HIST 1010 History of the United States 3(3) Political, economic, and social development of the American people from the period of discovery to the end of Reconstruction. Includes Honors sections.

HIST 1020 History of the United States 3(3) Political, economic, and social development of the American people from the end of Reconstruction to the present.

Includes Honors sections.

***HIST 1220 History, Technology, and Society 3(3)** Topics in the history of technology with emphasis on how technology affects society and how society shapes technology. Emphasis is on 19th and 20th century America, but some material from other periods of Western Civilization and other world regions may be discussed. Includes Honors sections.

***HIST 1240 Environmental History Survey 3(3)** Introduction to environmental history, in the United States and globally, with emphasis on changing attitudes toward the environment and the interaction between science and public policy. Includes Honors sections.

****HIST 1720 The West and the World I 3(3)** Examines the history of the West from early times until 1628. After a comparative evaluation of the emergence of civilization around the globe, course concentrates on the history of the peoples of Europe up to the age of European exploration and overseas expansion. Includes Honors sections.

****HIST 1730 The West and the World II 3(3)** Surveys the history of the West in modern times, from the late 17th century to the present. Particular emphasis is placed on Europe's interaction with non-western societies. Through cross-cultural comparisons, European history is placed in global context. Includes Honors sections.

****HIST 1930 Modern World History 3(3)** Political, economic, social, and cultural history of the modern world from the 19th century to the present.

****PAS 3010**

Introduction to Pan African Studies 3(3) Study of African American experience from an Afrocentric perspective from colonial America to the present.

POSC 1010 American National Government 3(3) Introduction to American national government and politics examining topics such as the Constitution, federalism, political institutions, political behavior, and political participation.

****POSC 1020 Introduction to International Relations 3(3)** Overview of both theory and practice in contemporary global politics. Topics include the structure of and primary actors in the international system; reasons conflict occurs; and roles of international institutions, law, and policy. Includes Honors sections.

****POSC 1040 Introduction to Comparative Politics 3(3)** Introduction to the study of comparative politics in the post-Cold War era, with emphasis on theories and applications. Topics include democratic and nondemocratic systems; ideology; political culture; party systems; and legislative, executive, and judicial structures. Includes Honors sections.

PSYC 2010 Introduction to Psychology 3(3) Introduction to the study of behavior. Analysis of the biological bases of behavior, learning, thinking, motivation, perception, human development, social behavior, and the application of basic principles to more complex phenomena such as education, personal adjustment, and interpersonal relations. Includes Honors sections.

****PSYC 2500 Pursuing Happiness 3(3)** Introduces psychological theories and principles used to study human behavior (methods, cognition, motivation, etc.). The concept of happiness is investigated as a psychological construct across cultures. Offered summer session only.

***PSYC 2750 Applied Psychology and Transportation 3(3)** Introduces psychological principles used to study human behavior (methodological, cognitive, perceptual, etc.). These psychological principles, in addition to ethical, legal, and societal perspectives, are applied to transportation issues.

RS 3010 Rural Sociology 3(3) Study of human social relationships as influenced by life in the open country and in small towns and villages, including considerations of the rural population, rural social institutions, processes of change in agricultural technology, and community area planning and development. Offered spring semester only.

SOC 2010 Introduction to Sociology 3(3) Sociological perspective: the study of contemporary groups, organizations, and societies in terms of human social behavior, social change, social structure, and social institutions. Includes Honors sections.

SOC 2020 Social Problems 3(3) Social problems involving the family, education, health care, political and legal systems, economy, population, environment, community; and special problems associated with age, economics, racial status, and gender inequality.

Electrical Engineering
Summary of Curriculum Requirements
2010-2011

Total Credits Required = 126, consisting of:

- **Required Courses (96 credit hours)**
- **Restricted Electives (30 credits) – Courses which must be selected from the following lists, some of which include additional restrictions:**
 - **Technical Electives – 9 credit hours (List T)**
 - 2 courses must be from the same Subject Area (depth requirement)
 - **Advanced Math Elective – 3 credit hours (List M)**
 - **Communications Elective – 3 credit hours (List C)**
 - **Arts and Humanities Electives – 6 credit hours (List H)**
 - 1 Literature course
 - 1 Non-Literature course
 - **Social Science Electives – 6 credit hours (List S)**
 - 2 courses from different fields
 - **5th Art and Humanities or Social Science Elective – 3 credit hours**
 - 1 additional course from List 5HS

Science and Technology in Society (STS) Requirement - A course selected as an Arts and Humanities Elective or a Social Science Elective also can satisfy the Science and Technology requirement if it is marked with *.

Cross-Cultural Awareness (CCA) Requirement - A course selected as an Arts and Humanities Elective or a Social Science Elective also can satisfy the Cross-Cultural Awareness requirement if it is marked with **.

e-Portfolio Requirement – As a condition for graduation, each student must submit an e-portfolio which meets the university's standards for approval.

Electrical Engineering

Bachelor of Science Degree

Curriculum year 2010-2011

FRESHMAN YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
ENGR 1020 Intro Engr	2		CH 1020 & 1021 Gen Chemistry II	4	
CH 1010 & 1011 Gen Chemistry I	4		ENGR 1410 & 1411 Problm solvng	3	
ENGL 1030 Comp I	3		MTHS 1080 Calc II	4	
MTHS 1060 Calc I	4		PHYS 1220 Phys I	3	
Hum/Soc Sci req	3		Hum/Soc Sci req	3	
	16			17	

SOPHOMORE YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
CPSC 1110 & 1111 C/C++	3		ECE 2120 Circuits Lab II	1	
ECE 2010 Logic	2		ECE 2620 Circuits II	3	
ECE 2020 Circuits I	3		ECE 2720 Comp Org	3	
ECE 2090 Logic Lab	1		ECE 2730 Comp Org Lab	1	
ECE 2110 Circuits Lab I	1		MTHS 2080 Diff Eq	4	
MTHS 2060 Calc III	4		Hum/Soc Sci req OR EE Tech Elec	3	
PHYS 2210 Physics II	3		[ECE 2220 Sys Progrmng]		
	17			15	

JUNIOR YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
ECE 3110 Lab III	1		ECE 3120 Lab IV	1	
ECE 3200 Electronics I	3		ECE 3170 Random Signal	3	
ECE 3300 Signals/Sys	3		ECE 3210 Electronics II	3	
ECE 3710 Micro Inter	3		ECE 3600 Power Engineering	3	
ECE 3720 Micro Inter Lab	1		ECE 3810 Fields, Waves	3	
ECE 3800 Electromagnetics	3		ENGL 3140 Tech writing	3	
Adv. Mathematics Elective	3				
	17			16	

SENIOR YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
COMM 1500 & 1501 or COMM 2500 & 2501	3		ECE 4960 Systems Des II	2	
ECE 4090 Syst. Des	3		EE Tech Elec OR	3	
ECE 4270 Comm Systems	3		Hum/Soc Sci req		
ECE 4950 Systems Design I	2		EE Tech Depth Elec	3	
EE Tech Elec	3		Hum/Soc Sci req	3	
			Literature requirement	3	
	14			14	

NOTES:

1. Advanced Mathematics Elective Options: MTHS 4190, MTHS 4340, MTHS 4350, MTHS 4530, MTHS 4540.
2. No student may enroll in ECE courses until all pre-requisites have been passed with a grade of C or higher.
3. All EE majors must have a cumulative and Engineering GPR of 2.0 to enroll in any 300- or 400-level ECE course.
4. No student may exceed a maximum of two attempts, excluding a W, to successfully complete any ECE course.

Electrical Engineering Technical and Technical Depth Requirements

Courses that satisfy EE technical and technical depth requirements are shown below. Three courses (9 credits) must be taken, at least two of which must come from the same Subject Area, to satisfy the Depth Requirement. The 6xx version of courses listed as *ECE 4xx have been approved for the combined BSEE/MSEE program. Students who qualify for the combined program can use up to 9 credits of approved courses to jointly satisfy MSEE and MSEE requirements. The EE Student Handbook includes a list of ECE 8xx courses which have also been approved for the combined program.

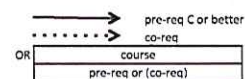
Subject Area	Course	Semester offered	Pre-requisites
Computer Systems And Architecture [CSA]	ECE 4170	Spring	ECE 3220, ECE 3520, MTHS 4190
	ECE 4290	Fall	ECE 2720
	*ECE 4420	Fall	ECE 3220, ECE 3520
	*ECE 4680	Spring	ECE 2230 and ECE 3710
	ECE 4730	Fall or Spring	ECE 3220
Biomedical Systems	BIOE 2010		BIO E 1010 or BIOL 1030 or 1100; CH 1020
	BIOE 3700		ECE 2020, MTHS 2080
	BIOE 4710		MTHS 2080, PHYS 2210, ECE 3200
Communication Systems & Networks [CSN]	* ECE 4300	Fall or Spring	ECE 3170, 3300 AND instructor permission
	* ECE 4380	Spring	Sr. standing in EE, CpE or CPSC
	* ECE 4400	Spring	ECE 2720 and ECE 3170
Digital Signal Processing [DSP]	* ECE 4420	Fall	ECE 3220 and ECE 3520
	* ECE 4670	Fall & Summer	ECE 3300
Applied Electromagnetics [AEM]	* ECE 4350	Spring	ECE 3810
	* ECE 4360	Fall	ECE 3810, co-req MTHS 3110 or 4340
	* ECE 4390	Check with the dept	ECE 3810, co-req MTHS 4340
	* ECE 4460	Spring	ECE 3300, 3810, or 4360; MTHS 3110 or 4340
Electronics [ELE]	* ECE 4040	Fall	ECE 3200, co-req MTHS 3110 or 4340
	* ECE 4060	Fall	ECE 3200, co-req MTHS 3110 or 4340
	* ECE 4220	Check with the dept	ECE 3210, 3300, 3600, 3710, 3810
	* ECE 4320	Spring	ECE 3210, co-req MTHS 3110 or 4340
	* ECE 4590	Check with the dept	ECE 3210, co-req MTHS 3110 or 4340
Intelligent Systems [CRB]	* ECE 4420	Fall	ECE 3220 and ECE 3520
	* ECE 4550	Summer	MTHS 2060, 3110 or instructor consent
	ECE 4570	Summer	ECE 3070 or ECE 3200
	* ECE 4670	Fall & Summer	ECE 3300
	* ECE 4680	Spring	ECE 3710 and ECE 2230
Power [POW]	* ECE 4180	Fall	ECE 3600, 3800
	* ECE 4190	Spring	ECE 3210, 3600, 3800, co-req MTHS 4340
Renewable Energy and Electric Vehicles	* ECE 4190	Spring	ECE 3210, 3600, 3800, co-req MTHS 4340
	ECE 4200	Spring	ECE 3070 or ECE 3200
	ECE 4570	Summer	ECE 3070 or ECE 3200
	ECE 4610	Fall	ECE 3200
	ECE 4700	Spring	ECE 3200
	ECE 4710	Spring	ECE 3200

Other courses: ECE 2220¹, ECE 4050², ECE 4600², ECE 4910² [HON], ECE 4920², ECE 4930², ECE 4990², ECE 4990² [HON]

¹ This course may be selected as a technical elective.

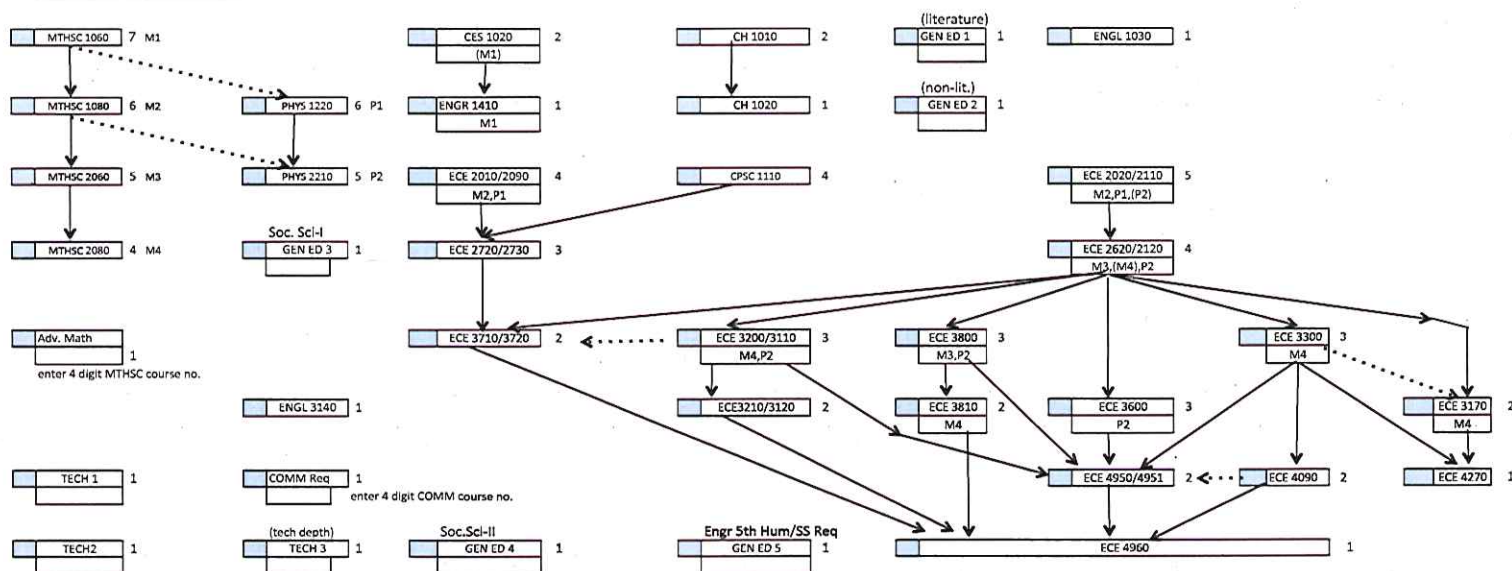
² If approved by a subject area committee, one of these courses can be used to satisfy the depth requirement.

ELECTRICAL ENGINEERING CURRICULUM 2010-2011



Name _____
CU id _____

Date _____



INSTRUCTIONS:

In the small box to the left of course no:

Enter 1 if you propose to take this course during the next term. (box will turn yellow)

Enter 2 if you are currently enrolled in this course. (Box will turn orange.)

Enter 3 if you have successfully completed this course. (Box will turn green.)

NOTES

29-Oct-13

Minimum No. of Additional Terms to Graduate
(If currently enrolled, this includes current term)

7

Used to satisfy CCA:

Used to satisfy STS:

e-portfolio completed?

LIST H – Arts and Humanities Electives (2010-2011)

(The following list is taken from General Education Section of 2010-2011 University Announcements)

Credits Required: 6

Restrictions:

- One course must be selected from Literature courses.
- One course must be selected from Non-Literature courses

Note: Courses on the Non-Literature list which also satisfy the Science and Technology in Society (STS) requirement of the Cross-Cultural Awareness (CCA) requirement are marked with * or **, respectively. (If courses selected to satisfy the Non-Literature requirement or the Social Science requirement do not also satisfy the CCA requirement and the STS requirement, then additional courses must be selected from the CCA and/or STS course lists shown in the University Announcements.)

Literature Courses (2010-11)

ENGL 2020 The Major Forms of Literature 3(3) Study of the basic structures and elements of fiction, poetry, and drama, including literary and critical theory, with readings in American, British, and world literature. Proficiency in composition must be demonstrated. Includes Honors sections. *Preq:* ENGL 1030.

ENGL H210 Introduction to Literary Study 3(3) Literature and composition course for honors students who have exempted ENGL 101 and 102. Readings in American, English, and world literature and advanced training in writing and research. *Preq:* Exemption from ENGL 101 and 102 or consent of instructor.

ENGL 2120 World Literature 3(3) Introduction to selected works from the Americas, Africa, Asia, Europe, and the Middle East from ancient to modern eras, with emphasis on major authors. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2130 British Literature 3(3) Introduction to selected authors and major periods of the British literary tradition, from the Middle Ages to World War II, with attention to poetry, fiction, and drama. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2140 American Literature 3(3) Introduction to selected authors and major periods of the American literary tradition from 1620 to 1945. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2150 Literature in 20th- and 21st- Century Contexts 3(3) Introduction to major contemporary cultural movements via selected authors in 20th- and 21st-

century literature, primarily American and British, with attention to poetry, fiction, and drama since World War II. Includes Honors sections. *Preq:* ENGL 1030.

CHIN 4010 Pre-Modern Chinese Literature in Translation 3(3) Chinese literature from 8th century B.C.E. to 19th century C.E., including poetry, prose, drama, fiction, and literary criticism. All readings and discussions are in English.

FR 3000 Survey of French Literature 3(3) Study of selected masterpieces of French literature in their artistic, cultural, and historical context. May include theme and genre studies. *Preq:* FR 2020.

FR 3040 French Short Story 3(3) Introduction to the study of French narrative literature and the elements of critical analysis through the examination of short stories spanning the medieval era to the present from both France and Francophone countries. *Preq:* FR 3050.

GER 2600 Selected Topics in German Literature 3(3) Study of significant aspects of German literature. Conducted in English.

GER 3060 The German Short Story 3(3) Examines the Austrian, German, and Swiss short story as a distinct literary genre that flourished particularly after 1945. Provides ample conversation and composition practice, as well as an introduction to principles of literary prose analysis. *Preq:* GER 2020.

GER 3600 German Literature to 1832 3(3) Examines selected topics in German literature from the Middle Ages to 1832. Readings may include works by Lessing, Goethe, Schiller, and the Romantics. *Preq or concurrent enrollment:* GER 3050 or GER 3060.

GER 3610 German Literature from 1832 to Modernism 3(3) Examines drama, poetry, and prose from the Biedermeier period through naturalism and realism to the advent of modernism. *Preq:* GER 3050 or 3060.

HON 1900 Freshman Colloquium: Arts and Humanities (Literature) 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the idea of the University. Explores key literary works that enhance understanding of historical eras, intellectual and artistic movements, or cultures. Topics vary. *Preq:* Membership in Calhoun Honors College.

HON 2210 Studies in Literature 3(3) Introduction to selected authors and literary works focused around a specific topic. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

ITAL 3010 Introduction to Italian Literature 3(3) Study of selected texts of Italian literature in their artistic, cultural, and social context. May include theme and genre

studies. *Preq:* ITAL 2020.

ITAL 3020 Modern Italian Literature 3(3) Study of selected works from major 19th- and 20th-century Italian authors, including Manzoni, Verga, Svevo, Moravia, Ginzburg. *Preq:* ITAL 2020.

JAPN 4010 Japanese Literature in Translation 3(3) Introduction to Japanese literature from 712 AD to the present. Cultivates an appreciation for Japanese literature and culture. All readings and discussions are in English. May not be used to satisfy general foreign language requirements.

JAPN 4060 Introduction to Japanese Literature 3(3) Students read contemporary Japanese narrative fiction, poetry, and drama in their historical and social context. *Preq:* 3000-level Japanese course.

RUSS 3600 Russian Literature to 1910 3(3) Study of key texts in the modern literary tradition in Imperial Russia from Pushkin to Chekhov. Readings and lectures are in English.

RUSS 3610 Russian Literature Since 1910 3(3) Study of key texts in modern Russian and Soviet literature with particular focus on Russian modernist movements and Socialist Realism. Readings and lectures are in English.

SPAN 3110 Survey of Spanish-American Literature 3(3) Literary movements, influences, authors, and works from the Colonial period to the present. *Preq:* Six credits in Spanish at the 300 level, including at least one course in literature or culture.

SPAN 3130 Survey of Spanish Literature I 3(3) Literary movements, influences, and authors from the beginning to the end of the 17th century; representative works, discussions. *Preq:* Six credits in Spanish at the 3000 level, including three credits of literature or culture.

Non-Literature Courses (2010-11)

AAH 1010 Survey of Art and Architectural History I 3(3) Comprehensive survey of art and architectural history of Western heritage as well as significant coverage of Asian, African, native American, and south American art. The arts are studied within the contexts of history, geography, politics, religion, and culture. Survey includes Ancient through Gothic. Includes Honors sections.

**** AAH 2100 Introduction to Art and Architecture 3(3)** One-semester lecture survey that introduces the nonmajor to an overview of art and architecture from different time periods and cultures. Students are encouraged to appreciate the contribution to art made by the great masters and to discern different styles, art techniques, and creative traditions. Includes Honors sections.

**** ASL 3050 Deaf Studies in the United States 3(3)** In-depth look into language, culture, and daily lives of approximately one million people who use American Sign Language as their primary language. Traces the roots of American Sign Language from pre-revolutionary times to current science and knowledge and how it applies to professional fields. *Preq:* ASL 2020.

CHIN 4990 Selected Topics in Chinese Culture 3(3) Examination of various social and cultural topics, including art and literature, philosophical and religious traditions, health and healing, and folk and popular cultures. May be repeated for a maximum of six credits, but only if different topics are covered. Readings and discussions are in English. May not be used to satisfy general foreign language requirements.

COMM 3030 Communication Law and Ethics 3(3) Major topics in communication law and free expression and in communication ethics. *Preq:* COMM 2010 with a *C* or better.

COMM0 3040 Youth, Media, and Culture 3(3) Grounded in the cultural studies paradigm, examines the relationship among youth, mass media, and popular culture. Focuses on issues such as how youth are portrayed in media, how youth navigate the products of mass media/culture, and how youth creates its own media culture. *Preq:* COMM 2010 with a *C* or better.

COMM 3080 Public Communication and Popular Culture 3(3) Examines artifacts of popular culture, paying particular attention to their relationship to politics and public life. Explores the structures and constraints of the culture industry. Students apply communication principles to various examples. *Preq:* COMM 201 with a *C* or better.

COMM 3090 Visual Discourse and the Public 3(3) Examines the role of visuality in society and the cultural implications for ways of seeing. Using visual artifacts of various types, students learn the logic of visual representation. *Preq:* COMM 201 with a *C* or better.

COMM 4020 Mass Communication: History and Criticism 3(3) Critical examination of mass communication in America, including discussions of history, theory, and current issues in television, film, popular music, telecommunications, and other media. *Preq:* COMM 201 with a *C* or better.

ENGL 3550 Global Studies in Popular Culture 3(3) Examination of the nature, functions, history, and impact upon American society of best sellers, popular magazines, television, movies, Internet, gaming platforms, and emerging electronic genres. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

ENGL 3570 Film 3(2) Examination of the film medium as an art form: its history,

how films are made, why certain types of films (western, horror movies, etc.) have become popular, and how critical theories provide standards for judging film. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150. *Coreq:* ENGL 3571.

FR 3070 French Civilization 3(3) Study of significant aspects of French culture from its origins to the present. *Preq:* FR 3050.

GW (ENGL) 3010 Great Books of the Western World 3(3) Introduces Great Works minor. Includes readings about the Great Books concept, as well as various great books from the humanities, arts, and natural and social sciences. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL2140 or ENGL 2150.

GW 4050 The Darwinian Revolution 3(3) Examination of Charles Darwin's *The Origin of Species* and its cultural impact from his time to ours. Topics include the contemporaneous reception of Darwin's work, the scopes Monkey trial, and more recent controversies over Creationism and Intelligent Design. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL2140 or ENGL 2150.

GER 3400 German Culture 3(3) Examines the cultures of German-speaking nations from their origins to the present. Emphasizes the federal republic of Germany both before and after the German unification of 1990. *Preq:* GER 2020.

HON 1910 Freshman Colloquium: Arts and Humanities (Non-Literature) 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the "idea of the University." Explores historical eras, intellectual and artistic movements, or cultures emphasizing multiple tools of analysis, including literature, art, music, and film. Topics vary. *Preq:* Membership in Calhoun Honors College.

*** HON 2010 Structures and Society 3(3)** Interdisciplinary honors seminar that examines selected structures regarded as monuments to artistic creativity and technological genius and the ways that structures affect and are affected by the societies that produce them. *Preq:* Membership in Calhoun Honors College.

HON 2030 Society, Art, and Humanities 3(3) Combines readings and methodologies from the social sciences, arts, and humanities to study the interrelationships among the disciplines and their societal effects. Subjects vary. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

HON 2100 Experiencing the Arts 3(2,3) Interdisciplinary exploration of the arts through seminar discussions and attendance at performing and visual arts events on campus. Exploration of arts and aesthetics leading to performance previews, reviews, and experiences of Brooks Center and Lee Gallery events. May be repeated for a

maximum of nine credits. *Preq:* Membership in Calhoun Honors College. *Coreq:* HON 2011

HON 2220 Studies in Arts and Humanities 3(3) Exploration of music, literature, film, philosophy or another area in humanities by examining a discipline specific topic. Focus may be on a particular scholar, era or culture idea or concept specific to a particular arts/humanities discipline. May be repeated for a maximum of six credits, but only if different disciplines are covered. *Preq:* Membership in Calhoun Honors College.

HUM 3010 Humanities 3(3) Introduction to humanistic studies focusing on relationships among disciplines—painting, sculpture, architecture, music, literature, philosophy, and drama—beginning with prehistory and continuing to the Renaissance.

HUM 3020 Humanities 3(3) Introduction to humanistic studies focusing on relationships among disciplines—painting, sculpture, architecture, music, literature, philosophy, and drama—beginning with the 17th century and continuing to the present.

HUM 3060 Creative Genius in Western Culture 3(3) Investigation of creativity through study of great innovators in art, literature, music, and ideas. May be repeated once for credit.

****HUM 3090 Studies in Humanities 3(3)** Interdisciplinary approach to the humanities. Special subject matter varies according to the instructor and as approved by the chair of the English Department. May be repeated once for credit.

JAPN 3070 Japanese Civilization I 3(3) Study of the significant aspects of the culture of Japan. *Preq:* JAPN 2020.

JAPN 3080 Japanese Civilization II 3(3) Study of significant aspects of the culture of Japan. *Preq:* JAPN 2020.

LANG 3400 Cosmopolis: The Myth of the City 3(3) Cross-cultural inquiry into the idea of the city through literary, political, and philosophical texts as well as film and architecture. *Preq:* Junior standing.

LANG 3420 Sacred and Profane Bodies 3(3) Cross-cultural inquiry into the ambivalence surrounding female sexuality implicit in images of women and, in particular, the division of women into earthly and divine categories. *Preq:* Junior standing.

LANG 3460 Walking and the Road 3(3) Cross-cultural inquiry into the epistemological, political, and aesthetic questions generated by walkers and the roads they travel in literature, philosophy, and film.

LANG 3480 The Child and the Adolescent 3(3) Cross-cultural inquiry into important theoretical questions of personal and political identity raised by the figure of the child and the adolescent in literature and film.

LANG 3560 Faces of Evil 3(3) Cross-cultural inquiry into evil as an ineradicable challenge to representation disclosed by notions of the monstrous, the enemy, the infinite, and death in literature, cultural theory, and the arts. *Preq:* Junior standing.

LANG (ENGL) 4540 Selected Topics in International Film 3(2) Presents subtitled films of specific world cultures and basic film theory and discourse applicable to the selected areas. Taught in English. May be repeated for a maximum of six credits with consent of department chair. *Preq:* ENGL 3100. *Coreq:* ENGL 4541.

****MUSC 2100 Music Appreciation: Music in the Western World 3(3)** Deepens students' appreciation of their musical heritage through study of the elements of the musical language and its development in Western culture. Includes Honors sections.

MUSC 3080 Survey of Broadway Musicals I 3(3) Introduction to Broadway musical repertoire from the Golden Age of Broadway: 1943–1964. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as THEA 3080.

MUSC 3090 Survey of Broadway Musicals II 3(3) Survey of Broadway musical repertoire from new conceptual shows from 1965 to the present day. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as THEA 3090.

MUSC 3110 History of American Music 3(3) Music in America from 1620 to the present. Indigenous and borrowed influences are examined.

MUSC 3120 History of Jazz 3(3) Comprehensive survey of jazz elements and styles. A historical perspective from Dixieland to bebop to jazz/rock is included.

MUSC 3130 History of Rock and Roll 3(3) Comprehensive survey of rock elements, styles, and artists. Emphasizes the evolution of rock and roll including a broad examination of musical influences. Course content examines how rock and roll both reflected and influenced social issues.

****MUSC 3140 World Music 3(3)** Introduction to ethnomusicology and music of the world's peoples. Emphasis is placed on music through culture.

MUSC 3170 History of Country Music 3(3) Chronological study of country music origins, styles, and artists. Emphasizes the evolution of country music from a cultural expression of the South to a commercial art form of worldwide appeal.

MUSC 3610 Marching Band 1(3) Ensembles: devoted to musical training of

ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. Offered fall semester only. *Preq:* Consent of director.

MUSC 3620 Symphonic Band 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3630 Jazz Ensemble 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3640 Concert Band 1(2) Devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3690 Symphony Orchestra 1(3) Mid-sized, college-community orchestra devoted to performing works from standard repertoire. Weekly evening rehearsals with one or more performances per semester. *Preq:* Consent of director.

MUSC 3700 Clemson University Singers 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3710 Women's Glee 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3720 Men's Glee 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given in addition to the minimum rehearsal time. *Preq:* Consent of director.

PHIL 1010 Introduction to Philosophic Problems 3(3) Discussion of representative philosophical questions that arise from human thought and action. Characteristic topics are values, knowledge, human nature, and society. Includes Honors sections.

PHIL 1020 Introduction to Logic 3(3) Introduction to methods of evaluating arguments. Gives simple valid argument forms, which can be joined together to produce the logical form of virtually any argument. Informal fallacies may also be considered. Includes Honors sections.

PHIL 1030 Introduction to Ethics 3(3) Philosophical consideration of the nature of ethics, basic ethical issues, and problems and modes of ethical reasoning. Includes Honors sections.

***PHIL 1240 Technology and Its Discontents 3(3)** Philosophical introduction to issues arising from the development of technologies, their implementation, and their integration into society. Considers theoretical questions regarding the nature of technology and its evaluation, as well as issues related to specific technologies.

***PHIL 2100 Evolution and Creation 3(3)** A critical comparison of evolution and creationism. Students examine the scientific, philosophical, and theological issues this clash brings to light, develop their ability to think through the various claims and counter claims critically, and then articulate a coherent position for themselves. Credit toward a degree will be given for only one of PHIL 2100 or BIOL 2100.

PHIL (CHIN) 3120 Philosophy in Ancient China 3(3) Study of the history of Chinese philosophy from fifth century BCE, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

PHIL (CHIN) 3130 Philosophy in Modern China 3(3) Study of the history of Chinese philosophy from the 19th century to the present, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

PHIL 3160 Modern Philosophy 3(3) Development of the modern view as seen in major Western philosophers of the 16th, 17th, and 18th centuries. Thought of Berkeley, Descartes, Hume, Leibniz, Locke, and Spinoza may be considered to illustrate the development of rationalism and empiricism.

PHIL 3170 Nineteenth-Century Philosophy 3(3) Development of 19th-century philosophy emphasizing selected works of philosophers such as Kant, Hegel, Marx, Nietzsche, and Kierkegaard.

PHIL 3180 Twentieth-Century Philosophy 3(3) Historical overview of selected significant movements in 20th-century Western philosophy such as Continental and/or analytic philosophy.

PHIL 3230 Theory of Knowledge 3(3) Examination of concepts, criteria, and decision procedures underlying rational belief and the justification of knowledge claims. Representative answers to the problem of skepticism are considered, with

special attention to some leading theories of knowledge.

***PHIL 3240 Philosophy of Technology 3(3)** Examines technology and representative philosophical assessments of it with a focus on understanding its impact on the human condition.

PHIL 3250 Philosophy of Science 3(3) Philosophical study of problems generated by science, but that are not themselves scientific, such as what comprises a scientific theory; how scientists formulate theories and acquire knowledge; what, if anything, differentiates science from other ways of knowing; what role concepts play in scientific knowledge; whether scientific progress is rational.

***PHIL 3260 Science and Values 3(3)** Examination of several features of the relation between science and values. Topics may include ethical and social obligations of scientists, role of value judgments in scientific practice, and influence of social and political values on science and scientists.

PHIL 3270 Philosophy of Social Science 3(3) Inquiry into the philosophical foundations of social science, in particular questions of objectivity, explanatory structure, causality, agency, normativism and naturalism, and social determination of knowledge.

PHIL 3440 Business Ethics 3(3) Study of ethical issues created by business activities, relating them to fundamental questions of ethics generally. Representative topics may include hiring, firing, promotions, business and minorities, organizational influence in private lives, consumer interests, economic justice, and reindustrialization.

***PHIL 3450 Environmental Ethics 3(3)** Study of ethical problems in our dealings with the rest of nature and of how they relate to ethics in general. Representative topics include the basis of ethics, nature and intrinsic value, duties to future generations, economics and the environment, rare species, animal rights, ethics and agriculture, energy doctrine.

****REL 1010 Introduction to Religion 3(3)** Study of the variety of religious experience and expression in human life.

****REL 1020 World Religions 3(3)** Survey of major religious traditions of the world. Includes Honors sections.

REL 3010 The Old Testament 3(3) Survey of the books of the Old Testament with special consideration given to the development of the concepts, institutions, and theology of the ancient Hebrews.

REL 3020 Survey of New Testament Literature 3(3) Study of the books of the New Testament from the standpoint of their occasion, content, literary form, and

basic theology.

REL 3030 The Quran 3(3) Survey of Islamic Scripture, its origins, content, and interpretation, with attention to the development of Hadith and Sunna as well.

REL 3060 Judaism 3(3) Examines the development of Judaism from biblical to modern times.

REL 3070 The Christian Tradition 3(3) Examination of the development of Christianity in Western civilization from the post-New Testament period to the present, stressing institutional growth and changes, theological currents, and interaction of Christianity with culture.

REL 3150 Islam 3(3) A study of the origins, development, and history of the religion of Islam and Islamic cultures from the time of the Prophet to the present.

RUSS 3400 Russian Culture of the Nineteenth Century 3(3) Study of achievements in art, science, music, and literature in Russia during the 19th century. Taught in English.

***STS 1010 Survey of Science and Technology in Society 3(3)** Surveys historical, philosophical, and social studies of science; introduces the basic requisites for scientific and technological literacy; and considers the problems of responsible participation in a scientifically and technologically advanced society.

***STS 1020 Ideas, Machinery, and Society 3(3)** Interdisciplinary discussion course introducing the fundamental themes of STS: the influence of social groups on the development of science and technology and the effects of science and technology on society.

STS 3030 Technology, Culture and Society 3(3) Addresses issues that arise from the interaction of technology with its social and cultural context. To better understand how technologies relate to societies and cultures, students learn to use the analytic tools required to evaluate the significance of technology, as well as its relations to social endeavors and cultural endeavors.

SPAN 3070 The Hispanic World: Spain 3(3) Introduction to the significant aspects of the culture of Spain from its origins to the present. Emphasizes the artistic, social, historical, political, and contemporary issues of the Iberian Peninsula. *Preq:* SPAN 2020.

SPAN 3080 The Hispanic World: Latin America 3(3) Introduction to the significant aspects of the culture of Spanish-American countries. Emphasis is placed on the development of the political, economical, geographical, social, and artistic aspects of Spanish America from the indigenous period to the present. *Preq:* SPAN 2020.

THEA 2100 Theatre Appreciation 3(3) Examination of the theatre event approached through historical context, play reading, analysis of production practices, and field trips to live dramatic performances. Includes Honors sections.

THEA 2790 Theatre Practicum 1(0,3) Practical work in theatre on a production designed for public presentation. May be repeated for a maximum of four credits.

THEA 3080 Survey of Broadway Musicals I 3(3) Introduction to Broadway musical repertoire from the Golden Age of Broadway: 1943–1964. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as MUSC 3080.

THEA 3090 Survey of Broadway Musicals II 3(3).
Survey of Broadway musical repertoire from new conceptual shows from 1965 to the present day. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as MUSC 3090.

THEA 3150 Theatre History I 3(3) Historical survey of Western theatre. Emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from antiquity to the Renaissance. *Preq:* Sophomore standing.

THEA 3160 Theatre History II 3(3) Historical survey of Western theatre. Emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from the Renaissance to the present. *Preq:* Sophomore standing.

THEA 3170 African-American Theatre I 3(3) Acquaints students with the origin and development of African-American playwrights, plays, players, and their contributions to the American theatre from the 19th century to the Civil Rights Movement.

WS 3010 Introduction to Women's Studies: Women's Lives 3(3) Interdisciplinary course exploring the unique features of women's lives from childhood to old age. Content is based on new research in many disciplines, including psychology, sociology, history, literature, and the arts. *Preq:* Sophomore standing

LIST S – Social Science Elective (2010-2011)

(The following list is taken from General Education Section of 2010-2011 University Announcements)

Credits Required: 6

Restrictions:

- Courses must be selected from two different fields.

Note: Courses on the Social Science list below which also satisfy the Science and Technology in Society (STS) requirement or the Cross-Cultural Awareness (CCA) requirement are marked with * or **, respectively. (If courses selected to satisfy the Non-Literature requirement or the Social Science requirement do not also satisfy the CCA requirement and the STS requirement, then additional courses must be selected from the CCA and/or STS course lists shown in the University Announcements.)

****ANTH 2010 Introduction to Anthropology 3(3)** Offers a four-field overview: primates and human biological origins; the development of agriculture and complex societies in the archaeological record; contemporary human societies cross-culturally; and the relationship between languages and cultures. An anthropological perspective on contemporary human problems is also presented.

APEC 2020 Agricultural Economics 3(3) Analytical survey of the various subdivisions of agricultural economics, including farm organization, enterprise, land economics, marketing, farm prices, governmental farm policies, and the relation of agriculture to the national and international economy.

APEC 2570 Natural Resources, Environment, and Economics 3(3) Economic principles applied to resource allocation problems related to environmental and natural resource issues.

ECON 2000 Economic Concepts 3(3) One-semester survey of basic economic concepts that offers an overview of both microeconomics and macroeconomics. Not intended for business majors or other students seeking a comprehensive introduction to economic analysis and its applications. Credit will not be given to students who have received credit for ECON 2110 or 2120.

ECON 2110 Principles of Microeconomics 3(3) Introduction to economic reasoning and its application to the study of the behavior of consumers and business firms. Particular topics include competition, monopoly, international trade, and the impact of selected public policies. Intended as the first of a two-semester sequence in the

foundations of economics. Includes Honors sections.

ECON 2120 Principles of Macroeconomics 3(3) Continuation of ECON 2110 in which fundamental economic principles are applied to the study of aggregate economic performance. Topics include the forces determining the rates of inflation, unemployment, and economic growth, with particular emphasis on the influence of fiscal and monetary policies through financial markets. Includes Honors sections. *Preq:* ECON 2110.

GEOG 1010 Introduction to Geography 3(3) Survey of the nature of geography emphasizing the discipline's organizing themes of earth science, relations between people and their environments, interrelations between places, locational analysis, and area studies.

****GEOG 1030 World Regional Geography 3(3)** Systematic and descriptive survey of the major regions of the world, including their physical and cultural features. Provides a global context for courses in the social sciences and humanities.

GEOG 1060 Geography of the Physical Environment 4(3,3) Examines the condition of the physical environment, especially the earth's surface and the processes that act on it. Topics range from earth-sun relations to the evolution of landscapes; human habitats and human alteration of the environment. *Coreq:* GEOG 1061.

HIST 1010 History of the United States 3(3) Political, economic, and social development of the American people from the period of discovery to the end of Reconstruction. Includes Honors sections.

HIST 1020 History of the United States 3(3) Political, economic, and social development of the American people from the end of Reconstruction to the present. Includes Honors sections.

***HIST 1220 History, Technology, and Society 3(3)** Topics in the history of technology with emphasis on how technology affects society and how society shapes technology. Emphasis is on 19th and 20th century America, but some material from other periods of Western Civilization and other world regions may be discussed. Includes Honors sections.

***HIST 1240 Environmental History Survey 3(3)** Introduction to environmental history, in the United States and globally, with emphasis on changing attitudes toward the environment and the interaction between science and public policy. Includes Honors sections.

****HIST 1720 The West and the World I 3(3)** Examines the history of the West from early times until 1628. After a comparative evaluation of the emergence of civilization around the globe, course concentrates on the history of the peoples of

Europe up to the age of European exploration and overseas expansion. Includes Honors sections.

****HIST 1730 The West and the World II 3(3)** Surveys the history of the West in modern times, from the late 17th century to the present. Particular emphasis is placed on Europe's interaction with non-western societies. Through cross-cultural comparisons, European history is placed in global context. Includes Honors sections.

****HIST 1930 Modern World History 3(3)** Political, economic, social, and cultural history of the modern world from the 19th century to the present.

HON 1920 Freshman Colloquium: Social Science 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the "idea of the University." Explores foundations and consequences of human thought and behavior at the individual and societal levels, with emphasis on concepts and tools that organize scholarly inquiry across the social and behavioral sciences. Topics vary. *Preq:* Membership in Calhoun Honors College.

HON 2020 Science, Culture, and Human Values 3(3) Interdisciplinary honors seminar that unifies natural scientific, social scientific, and humanistic disciplines into a holistic view of the modern world and its future. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

HON 2200 Studies in Social Science 3(3) Discipline specific social science seminar including a disciplinary introduction (anthropology, economics, history, political science, psychology or sociology) and a detailed examination of specific theories and methods within that discipline. May be repeated for a maximum of six credits, but only if different disciplines are covered. *Preq:* Membership in Calhoun Honors College.

****PAS 3010**

Introduction to Pan African Studies 3(3) Study of African American experience from an Afrocentric perspective from colonial America to the present.

POSC 1010 American National Government 3(3) Introduction to American national government and politics examining topics such as the Constitution, federalism, political institutions, political behavior, and political participation.

****POSC 1020 Introduction to International Relations 3(3)** Overview of both theory and practice in contemporary global politics. Topics include the structure of and primary actors in the international system; reasons conflict occurs; and roles of international institutions, law, and policy. Includes Honors sections.

****POSC 1040 Introduction to Comparative Politics 3(3)** Introduction to the study of comparative politics in the post-Cold War era, with emphasis on theories and applications. Topics include democratic and nondemocratic systems; ideology; political culture; party systems; and legislative, executive, and judicial structures. Includes Honors sections.

PSYC 2010 Introduction to Psychology 3(3) Introduction to the study of behavior. Analysis of the biological bases of behavior, learning, thinking, motivation, perception, human development, social behavior, and the application of basic principles to more complex phenomena such as education, personal adjustment, and interpersonal relations. Includes Honors sections.

****PSYC 2500 Pursuing Happiness 3(3)** Introduces psychological theories and principles used to study human behavior (methods, cognition, motivation, etc.). The concept of happiness is investigated as a psychological construct across cultures. Offered summer session only.

***PSYC 2750 Applied Psychology and Transportation 3(3)** Introduces psychological principles used to study human behavior (methodological, cognitive, perceptual, etc.). These psychological principles, in addition to ethical, legal, and societal perspectives, are applied to transportation issues.

RS 3010 Rural Sociology 3(3) Study of human social relationships as influenced by life in the open country and in small towns and villages, including considerations of the rural population, rural social institutions, processes of change in agricultural technology, and community area planning and development. Offered spring semester only.

SOC 2010 Introduction to Sociology 3(3) Sociological perspective: the study of contemporary groups, organizations, and societies in terms of human social behavior, social change, social structure, and social institutions. Includes Honors sections.

SOC 2020 Social Problems 3(3) Social problems involving the family, education, health care, political and legal systems, economy, population, environment, community; and special problems associated with age, economics, racial status, and gender inequality.

Summary of Curriculum Requirements (Electrical Engineering)

2011-2012, 2012-2013, and 2013-2014

Total Credits Required = 126, consisting of:

- **Required Courses (96 credit hours)**
- **Restricted Electives (30 credits) – Courses which must be selected from the following lists, some of which include additional restrictions:**
 - **Technical Electives – 9 credit hours (List T)**
 - 2 courses must be from the same Subject Area (depth requirement)
 - **Advanced Math Elective – 3 credit hours (List M)**
 - **Communications Elective – 3 credit hours (List C)**
 - **Arts and Humanities Electives – 6 credit hours (List H)**
 - 1 Literature course
 - 1 Non-Literature course
 - **Social Science Electives – 6 credit hours (List S)**
 - 2 courses from different fields
 - **Special Elective – 3 credit hours (List Z)**
 - 1 additional course from List T, List M, List H, List S, List 5HS, or from the ELE and additional MTHSC courses included in List Z)

Science and Technology in Society (STS) Requirement - A course selected as an Arts and Humanities Elective or a Social Science Elective also can satisfy the Science and Technology requirement if it is marked with *.

Cross-Cultural Awareness (CCA) Requirement - A course selected as an Arts and Humanities Elective or a Social Science Elective also can satisfy the Cross-Cultural Awareness requirement if it is marked with **.

e-Portfolio Requirement – As a condition for graduation, each student must submit an e-portfolio which meets the university's standards for approval.

Electrical Engineering

Bachelor of Science Degree

Curriculum years 2011-2012, 2012-2013, and 2013-2014

FRESHMAN YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
ENGR 1020 Intro Engineering	2		CH 1020 & 1021 Gen Chemistry II	4	
CH 1010 & 1011 General Chemistry I	4		ENGR 1410 & 1411 Problem solvng	3	
ENGL 1030 Accelerated Composition	3		MTHS 1080 Calculus II	4	
MTHS 1060 Calculus I	4		PHYS 1220 Physics with Calculus I	3	
Hum/Soc Sci req	3		Hum/Soc Sci req	3	
	16			17	

SOPHOMORE YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
CPSC 1110 & 1111 C/C++	3		ECE 2120 Electrical Engr Lab II	1	
ECE 2010 Logic & Computing Devices	2		ECE 2620 Electric Circuits II	3	
ECE 2020 Electric Circuits I	3		ECE 2720 Computer Organization	3	
ECE 2090 Logic Lab	1		ECE 2730 Computer Org Lab	1	
ECE 2110 Electrical Engineering Lab I	1		MTHS 2080 Differential Equations	4	
MTHS 2060 Calculus III	4		Hum/Soc Sci req OR EE Tech Elec	3	
PHYS 2210 Physics with Calculus II	3		[ECE 2220 Sys Progrmng]		
	17			15	

JUNIOR YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
ECE 3110 Electrical Engr Lab III	1		ECE 3120 Lab IV	1	
ECE 3200 Electronics I	3		ECE 3170 Random Signal	3	
ECE 3300 Signals, Sys, & Transforms	3		ECE 3210 Electronics II	3	
ECE 3600 Electric Power Engineering	3		ECE 3710 Microcntrllr Interfacing	3	
ECE 3800 Electromagnetics	3		ECE 3720 Microcontroller Lab	1	
Adv. Mathematics Elective ¹	3		ECE 3810 Fields, Waves & Circuits	3	
	16		ENGL 3140 Technical writing	3	
				17	

SENIOR YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
COMM 1500 & 1501 or COMM 2500 & 2501	3		ECE 4960 Systems Design II	2	
ECE 4090 Cont & Discrete Sys Design	3		EE Technical Elective OR	3	
ECE 4270 Communications Systems	3		Hum/Soc Sci req		
ECE 4950 Systems Design I	2		Technical Elective	3	
EE Technical Elective	3		Hum/Soc Sci req ²	3	
			Special Elective ²	3	
	14			14	

NOTES:

1. Advanced Mathematics Elective Options: MTHS 4190, MTHS 4340, MTHS 4350, MTHS 4530, or MTHS 4540.
2. Special Elective Options:
 - a. 3 additional credits of approved Humanities/Social Science courses; or
 - b. ELE 3010 - Executive Leadership and Entrepreneurship I or ELE 4010 - Executive Leadership and Entrepreneurship II; or
 - c. An additional 3-credit, 400-level course from the EE Technical Elective List or the CpE Technical Elective List; or
 - d. An additional 3-credit MTHS course from the following list: MTHS 3110 (Linear Algebra), MTHS 4120 (Intro. to Modern Algebra), MTHS 4190 (Discrete Math I), MTHS 4340 (Advanced Engineering Math), MTHS 4350 (Complex Variables), MTHS 4400 (Linear Programming), MTHS 4410 (Intro to Stochastic Models), and MTHS 4530 (Advanced Calculus I), MTHS 4540 (Advanced Calculus II).

Electrical Engineering Technical and Technical Depth Requirements

Courses that satisfy EE technical and technical depth requirements are shown below. Three courses (9 credits) must be taken, at least two of which must come from the same Subject Area, to satisfy the Depth Requirement. The 6xxx version of courses listed as *ECE 4xxx have been approved for the combined BSEE/MSEE program. Students who qualify for the combined program can use up to 9 credits of approved courses to jointly satisfy MSEE and MSEE requirements. The EE Student Handbook includes a list of ECE 8xxx courses which have also been approved for the combined program.

Subject Area	Course	Semester offered	Pre-requisites
Computer Systems And Architecture [CSA]	ECE 2220	Fall & Spring	CPSC 1110
	ECE 4170	Spring	ECE 3220, ECE 3520, MTHS 4190
	ECE 4290	Fall	ECE 2720
	*ECE 4420	Fall	ECE 3220, ECE 3520
	*ECE 4680	Spring	ECE 2230 and ECE 3710
	ECE 4730	Fall or Spring	ECE 3220
Biomedical Systems	BIOE 2010		BIO E 1010 or BIOL 1030 or 1100; CH 1020
	BIOE 3700		ECE 2020, MTHS 2080
	BIOE 4710		MTHS 2080, PHYS 2210, ECE 3200
Communication Systems & Networks [CSN]	* ECE 4300	Fall or Spring	ECE 3170, 3300 AND instructor permission
	* ECE 4380	Spring	Sr. standing in EE, CpE or CPSC
	* ECE 4400	Spring	ECE 2720 and ECE 3170
Digital Signal Processing [DSP]	* ECE 4420	Fall	ECE 3220 and ECE 3520
	* ECE 4670	Fall & Summer	ECE 3300
Applied Electromagnetics [AEM]	* ECE 4350	Spring	ECE 3810
	* ECE 4360	Fall	ECE 3810, co-req MTHS 3110 or 4340
	* ECE 4390	Check with the dept	ECE 3810, co-req MTHS 4340
	* ECE 4460	Spring	ECE 3300, 3810, or 4360; MTHS 3110 or 4340
Electronics [ELE]	* ECE 4040	Fall	ECE 3200, co-req MTHS 3110 or 4340
	* ECE 4060	Fall	ECE 3200, co-req MTHS 3110 or 4340
	* ECE 4220	Check with the dept	ECE 3210, 3300, 3600, 3710, 3810
	* ECE 4320	Spring	ECE 3210, co-req MTHS 3110 or 4340
	* ECE 4590	Check with the dept	ECE 3210, co-req MTHS 3110 or 4340
Intelligent Systems [CRB]	* ECE 4420	Fall	ECE 3220 and ECE 3520
	* ECE 4550	Summer	MTHS 2060, 3110 or instructor consent
	ECE 4570	Summer	ECE 3070 or ECE 3200
	* ECE 4670	Fall & Summer	ECE 3300
	* ECE 4680	Spring	ECE 3710 and ECE 2230
Power [POW]	* ECE 4180	Fall	ECE 3600, 3800
	* ECE 4190	Spring	ECE 3210, 3600, 3800, co-req MTHS 4340
Renewable Energy and Electric Vehicles	* ECE 4190	Spring	ECE 3210, 3600, 3800, co-req MTHS 4340
	ECE 4200	Spring	ECE 3070 or ECE 3200
	ECE 4570	Summer	ECE 3070 or ECE 3200
	ECE 4610	Fall	ECE 3200
	ECE 4700	Spring	ECE 3200
	ECE 4710	Spring	ECE 3200

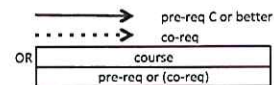
Other courses: ECE 4050¹, ECE 4600¹, ECE 4910¹ [HON], ECE 4920¹, ECE 4930¹, ECE 4990¹, ECE 4990¹ [HON]

¹ A maximum of 3 credits from this category may be used to satisfy the technical elective requirement.

2011-12, 2012-13, and 2013-14 academic year

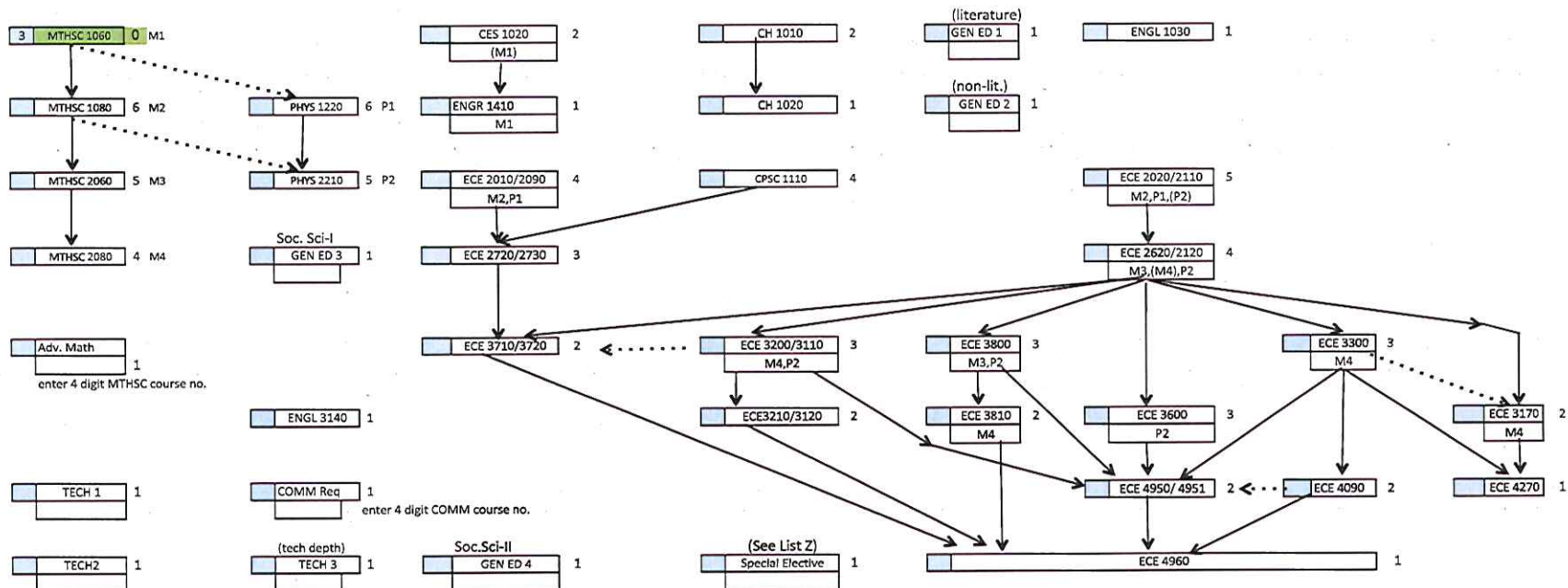
Updated 9 October 2013

ELECTRICAL ENGINEERING CURRICULUM 2011-2012, 2012-2013, and 2013-14



Name _____
CU id _____

Date _____



INSTRUCTIONS:

In the small box to the left of course no:

Enter 1 if you propose to take this course during the next term. (box will turn yellow)

Enter 2 if you are currently enrolled in this course. (Box will turn orange.)

Enter 3 if you have successfully completed this course. (Box will turn green.)

NOTES

28-Oct-13

Minimum No. of Additional Terms to Graduate
(if currently enrolled, this includes current term)

45

Used to satisfy CCA: _____

Used to satisfy STS: _____

e-portfolio completed? _____

LIST H – Arts and Humanities Electives (2011-12, 2012-13, and 2013-14)

(The following list was compiled from the General Education Sections of the 2011-2012 University Announcements, the 2012-2013 University Announcements, the 2013-2014 University Announcements and the 2014-2015 University Announcements. Notes are provided to flag courses which are included for only a subset of the above curriculum years. Notes are also provided to flag courses which satisfy STS and/or CCA requirements for only a subset of the above three curriculum years

Credits Required: 6

Restrictions:

- One course must be selected from Literature courses.
- One course must be selected from Non-Literature courses

Note: Courses on the Non-Literature list which also satisfy the Science and Technology in Society (STS) requirement are marked with *. Courses which satisfy the Cross-Cultural Awareness (CCA) requirement are marked with **. (If courses selected to satisfy the Non-Literature requirement or the Social Science requirements do not also satisfy the CCA requirement and the STS requirement, then additional courses must be selected from the CCA and/or STS course lists shown on p. 38 of the 2014-2015 University Announcements.)

Literature Courses (2011-12, 2012-13, 2013-14, and 2014-15)

ENGL 2020 The Major Forms of Literature 3(3) Study of the basic structures and elements of fiction, poetry, and drama, including literary and critical theory, with readings in American, British, and world literature. Proficiency in composition must be demonstrated. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2120 World Literature 3(3) Introduction to selected works from the Americas, Africa, Asia, Europe, and the Middle East from ancient to modern eras, with emphasis on major authors. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2130 British Literature 3(3) Introduction to selected authors and major periods of the British literary tradition, from the Middle Ages to World War II, with attention to poetry, fiction, and drama. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2140 American Literature 3(3) Introduction to selected authors and major periods of the American literary tradition from 1620 to 1945. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2150 Literature in 20th- and 21st- Century Contexts 3(3) Introduction to major contemporary cultural movements via selected authors in 20th- and 21st-century literature, primarily American and British, with attention to poetry, fiction, and drama since World War II. Includes Honors sections. *Preq:* ENGL 1030.

CHIN 4010 Pre-Modern Chinese Literature in Translation 3(3) Chinese literature from 8th century B.C.E. to 19th century C.E., including poetry, prose, drama, fiction, and literary criticism. All readings and discussions are in English.

FR 3000 Survey of French Literature 3(3) Study of selected masterpieces of French literature in their artistic, cultural, and historical context. May include theme and genre studies. *Preq:* FR 2020.

FR 3040 French Short Story 3(3) Introduction to the study of French narrative literature and the elements of critical analysis through the examination of short stories spanning the medieval era to the present from both France and Francophone countries. *Preq:* FR 3050.

GER 2600 Selected Topics in German Literature 3(3) Study of significant aspects of German literature. Conducted in English.

GER 3060 The German Short Story 3(3) Examines the Austrian, German, and Swiss short story as a distinct literary genre that flourished particularly after 1945. Provides ample conversation and composition practice, as well as an introduction to principles of literary prose analysis. *Preq:* GER 2020.

GER 3600 German Literature to 1832 3(3) Examines selected topics in German literature from the Middle Ages to 1832. Readings may include works by Lessing, Goethe, Schiller, and the Romantics. *Preq or concurrent enrollment:* GER 3050 or GER 3060.

GER 3610 German Literature from 1832 to Modernism 3(3) Examines drama, poetry, and prose from the Biedermeier period through naturalism and realism to the advent of modernism. *Preq:* GER 3050 or 3060.

HON 1900 Freshman Colloquium: Arts and Humanities (Literature) 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the idea of the University. Explores key literary works that enhance understanding of historical eras, intellectual and artistic movements, or cultures. Topics vary. *Preq:* Membership in Calhoun Honors College.

HON 2210 Studies in Literature 3(3) Introduction to selected authors and literary works focused around a specific topic. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

ITAL 3010 Introduction to Italian Literature 3(3) Study of selected texts of Italian literature in their artistic, cultural, and social context. May include theme and genre studies. *Preq:* ITAL 2020.

ITAL 3020 Modern Italian Literature 3(3) Study of selected works from major 19th- and 20th-century Italian authors, including Manzoni, Verga, Svevo, Moravia, Ginzburg. *Preq:* ITAL 2020.

JAPN 4010 Japanese Literature in Translation 3(3) Introduction to Japanese literature from 712 AD to the present. Cultivates an appreciation for Japanese literature and culture. All readings and discussions are in English. May not be used to satisfy general foreign language requirements.

JAPN 4060 Introduction to Japanese Literature 3(3) Students read contemporary Japanese narrative fiction, poetry, and drama in their historical and social context. *Preq:* 3000-level Japanese course.

RUSS 3600 Russian Literature to 1910 3(3) Study of key texts in the modern literary tradition in Imperial Russia from Pushkin to Chekhov. Readings and lectures are in English.

RUSS 3610 Russian Literature Since 1910 3(3) Study of key texts in modern Russian and Soviet literature with particular focus on Russian modernist movements and Socialist Realism. Readings and lectures are in English.

SPAN 3110 Survey of Spanish-American Literature 3(3) Literary movements, influences, authors, and works from the Colonial period to the present. *Preq:* Six credits in Spanish at the 300 level, including at least one course in literature or culture.

SPAN 3130 Survey of Spanish Literature I 3(3) Literary movements, influences, and authors from the beginning to the end of the 17th century; representative works, discussions. *Preq:* Six credits in Spanish at the 3000 level, including three credits of literature or culture.

Non-Literature Courses (2011-12, 2012-13, 2013-14, and 2014-15)

AAH 1010 Survey of Art and Architectural History I 3(3) Comprehensive survey of art and architectural history of Western heritage as well as significant coverage of Asian, African, native American, and south American art. The arts are studied within the contexts of history, geography, politics, religion, and culture. Survey includes Ancient through Gothic. Includes Honors sections.

**** AAH 2100 Introduction to Art and Architecture 3(3)** One-semester lecture survey that introduces the nonmajor to an overview of art and architecture from different time periods and cultures. Students are encouraged to appreciate the

contribution to art made by the great masters and to discern different styles, art techniques, and creative traditions. Includes Honors sections.

ART 3750 Writing for the Arts in Charleston 3-6(3-6) Using Charleston's International Spoleto Festival USA as a laboratory, students engage in interdisciplinary, critical readings and observations of multiple elements of performing and visual arts programs, and write extensively about their place in a global, contemporary society. Students develop professional and technological literacies using print and digital media. Offered summer only. May be repeated for a maximum of six credits. *Preq:* ENGL 1030

**** ASL 3050 Deaf Studies in the United States 3(3)** In-depth look into language, culture, and daily lives of approximately one million people who use American Sign Language as their primary language. Traces the roots of American Sign Language from pre-revolutionary times to current science and knowledge and how it applies to professional fields. *Preq:* ASL 2020.

CAAH 2010 Cultural Literacies Across Media 3(3) Hands-on practicum course in which students reflect critically on the cultural, aural, visual, professional and technological literacies learned as a result of a semester-long study abroad experience. May be repeated for a maximum of six credits. *Preq:* Enrollment in a study abroad program and ENGL 1030.

Note: Included for 2012-2013 curriculum, 2013-2014 curriculum, and 2014-2015 curriculum, but not for 2011-2012 curriculum.

CHIN (PHIL) 3120 Philosophy in Ancient China 3(3). Study of the history of Chinese philosophy from fifth century BCE, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

Note: Included for 2013-2014 curriculum and 2014-2014 curriculum, but not for 2011-2012 or the 2012-2013 curriculum.

CHIN (PHIL) 3130 Philosophy in Modern China 3(3). Study of the history of Chinese philosophy from the 19th century BCE, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' view and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

Note: Included for 2013-14 curriculum and 2014-2015 curriculum, but not for 2011-2012 or the 2012-2013 curriculum.

CHIN 4990 Selected Topics in Chinese Culture 3(3) Examination of various social and cultural topics, including art and literature, philosophical and religious traditions, health and healing, and folk and popular cultures. May be repeated for a maximum of

six credits, but only if different topics are covered. Readings and discussions are in English. May not be used to satisfy general foreign language requirements.

COMM 3030 Communication Law and Ethics 3(3) Major topics in communication law and free expression and in communication ethics. *Preq:* COMM 2010 with a *C* or better.

COMM 3040 Youth, Media, and Culture 3(3) Grounded in the cultural studies paradigm, examines the relationship among youth, mass media, and popular culture. Focuses on issues such as how youth are portrayed in media, how youth navigate the products of mass media/culture, and how youth creates its own media culture. *Preq:* COMM 2010 with a *C* or better.

Note: Included for the 2011-12 curriculum, the 2012-13 curriculum, and 2013-14 curriculum, but not for 2014-2015 curriculum.

COMM 3080 Public Communication and Popular Culture 3(3) Examines artifacts of popular culture, paying particular attention to their relationship to politics and public life. Explores the structures and constraints of the culture industry. Students apply communication principles to various examples. *Preq:* COMM 201 with a *C* or better.

COMM 3090 Visual Discourse and the Public 3(3) Examines the role of visuality in society and the cultural implications for ways of seeing. Using visual artifacts of various types, students learn the logic of visual representation. *Preq:* COMM 201 with a *C* or better.

COMM 4020 Mass Communication: History and Criticism 3(3) Critical examination of mass communication in America, including discussions of history, theory, and current issues in television, film, popular music, telecommunications, and other media. *Preq:* COMM 201 with a *C* or better.

ENGL 3010 (GW) Great Books of the Western World 3(3) Introduces Great Works minor. Includes readings about the Great Books concept, as well as various great books from the humanities, arts and natural and social sciences. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

ENGL 3550 Global Studies in Popular Culture 3(3) Examination of the nature, functions, history, and impact upon American society of best sellers, popular magazines, television, movies, Internet, gaming platforms, and emerging electronic genres. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

ENGL 3570 Film 3(2) Examination of the film medium as an art form: its history, how films are made, why certain types of films (western, horror movies, etc.) have become popular, and how critical theories provide standards for judging film. *Preq:*

ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150. *Coreq:* ENGL 3571.

ENGL (LANG) 4540 Selected Topics in International Film 3(2) Presents subtitled films of specific world cultures and basic film theory and discourse applicable to the selected areas. Taught in English. May be repeated for a maximum of six credits with consent of department chair. *Preq:* ENGL 3100. *Coreq:* ENGL 4541.

Note: Included for 2013-14 curriculum and 2014-15 curriculum, but not for 2011-2012 or the 2012-2013 curriculum.

FR 3070 French Civilization 3(3) Study of significant aspects of French culture from its origins to the present. *Preq:* FR 3050.

GW (ENGL) 3010 Great Books of the Western World 3(3) Introduces Great Works minor. Includes readings about the Great Books concept, as well as various great books from the humanities, arts, and natural and social sciences. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

GW 4050 The Darwinian Revolution 3(3) Examination of Charles Darwin's *The Origin of Species* and its cultural impact from his time to ours. Topics include the contemporaneous reception of Darwin's work, the scopes Monkey trial, and more recent controversies over Creationism and Intelligent Design. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

GER 3400 German Culture 3(3) Examines the cultures of German-speaking nations from their origins to the present. Emphasizes the federal republic of Germany both before and after the German unification of 1990. *Preq:* GER 2020.

HON 1910 Freshman Colloquium: Arts and Humanities (Non-Literature) 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the "idea of the University." Explores historical eras, intellectual and artistic movements, or cultures emphasizing multiple tools of analysis, including literature, art, music, and film. Topics vary. *Preq:* Membership in Calhoun Honors College.

*** HON 2010 Structures and Society 3(3)** Interdisciplinary honors seminar that examines selected structures regarded as monuments to artistic creativity and technological genius and the ways that structures affect and are affected by the societies that produce them. *Preq:* Membership in Calhoun Honors College.

HON 2030 Society, Art, and Humanities 3(3) Combines readings and methodologies from the social sciences, arts, and humanities to study the interrelationships among the disciplines and their societal effects. Subjects vary. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

HON 2100 Experiencing the Arts 3(2,3) Interdisciplinary exploration of the arts through seminar discussions and attendance at performing and visual arts events on campus. Exploration of arts and aesthetics leading to performance previews, reviews, and experiences of Brooks Center and Lee Gallery events. May be repeated for a maximum of nine credits. *Preq:* Membership in Calhoun Honors College. *Coreq:* HON 2011

HON 2220 Studies in Arts and Humanities 3(3) Exploration of music, literature, film, philosophy or another area in humanities by examining a discipline specific topic. Focus may be on a particular scholar, era or culture idea or concept specific to a particular arts/humanities discipline. May be repeated for a maximum of six credits, but only if different disciplines are covered. *Preq:* Membership in Calhoun Honors College.

HUM 3010 Humanities 3(3) Introduction to humanistic studies focusing on relationships among disciplines—painting, sculpture, architecture, music, literature, philosophy, and drama—beginning with prehistory and continuing to the Renaissance.

HUM 3020 Humanities 3(3) Introduction to humanistic studies focusing on relationships among disciplines—painting, sculpture, architecture, music, literature, philosophy, and drama—beginning with the 17th century and continuing to the present.

HUM 3060 Creative Genius in Western Culture 3(3) Investigation of creativity through study of great innovators in art, literature, music, and ideas. May be repeated once for credit.

****HUM 3090 Studies in Humanities 3(3)** Interdisciplinary approach to the humanities. Special subject matter varies according to the instructor and as approved by the chair of the English Department. May be repeated once for credit.

JAPN 3070 Japanese Civilization I 3(3) Study of the significant aspects of the culture of Japan. *Preq:* JAPN 2020.

JAPN 3080 Japanese Civilization II 3(3) Study of significant aspects of the culture of Japan. *Preq:* JAPN 2020.

LANG 3400 Cosmopolis: The Myth of the City 3(3) Cross-cultural inquiry into the idea of the city through literary, political, and philosophical texts as well as film and architecture. *Preq:* Junior standing.

LANG 3420 Sacred and Profane Bodies 3(3) Cross-cultural inquiry into the ambivalence surrounding female sexuality implicit in images of women and, in particular, the division of women into earthly and divine categories. *Preq:* Junior

standing.

LANG 3460 Walking and the Road 3(3) Cross-cultural inquiry into the epistemological, political, and aesthetic questions generated by walkers and the roads they travel in literature, philosophy, and film.

Note: Included for 2011-2012 curriculum, but not for 2012-2013 curriculum, 2013-2014 curriculum, or 2014-2015 curriculum.

LANG 3480 The Child and the Adolescent 3(3) Cross-cultural inquiry into important theoretical questions of personal and political identity raised by the figure of the child and the adolescent in literature and film.

Note: Included for 2011-2012 curriculum, but not for 2012-2013 curriculum, 2013-2014 curriculum, or 2014-2015 curriculum.

LANG 3560 Faces of Evil 3(3) Cross-cultural inquiry into evil as an ineradicable challenge to representation disclosed by notions of the monstrous, the enemy, the infinite, and death in literature, cultural theory, and the arts. *Preq:* Junior standing.

LANG (ENGL) 4540 Selected Topics in International Film 3(2) Presents subtitled films of specific world cultures and basic film theory and discourse applicable to the selected areas. Taught in English. May be repeated for a maximum of six credits with consent of department chair. *Preq:* ENGL 3100. *Coreq:* ENGL 4541.

***LARC 1160 History of Landscape Architecture 3(3)** History of design on the land from prehistory to the present. Overview of the interface of aesthetics, science, technology, and natural features that influence cultures in shaping places. **Note: Included for 2012-2013 curriculum, 2013-2014 curriculum, and 2014-2015 curriculum, but not for 2011-2012 curriculum.**

****MUSC 2100 Music Appreciation: Music in the Western World 3(3)** Deepens students' appreciation of their musical heritage through study of the elements of the musical language and its development in Western culture. Includes Honors sections.

MUSC 3080 Survey of Broadway Musicals I 3(3) Introduction to Broadway musical repertoire from the Golden Age of Broadway: 1943–1964. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as THEA 3080.

MUSC 3090 Survey of Broadway Musicals II 3(3) Survey of Broadway musical repertoire from new conceptual shows from 1965 to the present day. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as THEA 3090.

MUSC 3110 History of American Music 3(3) Music in America from 1620 to the present. Indigenous and borrowed influences are examined.

MUSC 3120 History of Jazz 3(3) Comprehensive survey of jazz elements and styles. A historical perspective from Dixieland to bebop to jazz/rock is included.

MUSC 3130 History of Rock and Roll 3(3) Comprehensive survey of rock elements, styles, and artists. Emphasizes the evolution of rock and roll including a broad examination of musical influences. Course content examines how rock and roll both reflected and influenced social issues.

****MUSC 3140 World Music 3(3)** Introduction to ethnomusicology and music of the world's peoples. Emphasis is placed on music through culture.

MUSC 3170 History of Country Music 3(3) Chronological study of country music origins, styles, and artists. Emphasizes the evolution of country music from a cultural expression of the South to a commercial art form of worldwide appeal.

MUSC 3610 Marching Band 1(3) Ensembles: devoted to musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. Offered fall semester only. *Preq:* Consent of director.

MUSC 3620 Symphonic Band 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3630 Jazz Ensemble 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3640 Concert Band 1(2) Devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3690 Symphony Orchestra 1(3) Mid-sized, college-community orchestra devoted to performing works from standard repertoire. Weekly evening rehearsals with one or more performances per semester. *Preq:* Consent of director.

MUSC 3700 Clemson University Singers 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3710 Women's Glee 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public

performances are given in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3720 Men's Glee 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given in addition to the minimum rehearsal time. *Preq:* Consent of director.

PHIL 1010 Introduction to Philosophic Problems 3(3) Discussion of representative philosophical questions that arise from human thought and action. Characteristic topics are values, knowledge, human nature, and society. Includes Honors sections.

PHIL 1020 Introduction to Logic 3(3) Introduction to methods of evaluating arguments. Gives simple valid argument forms, which can be joined together to produce the logical form of virtually any argument. Informal fallacies may also be considered. Includes Honors sections.

PHIL 1030 Introduction to Ethics 3(3) Philosophical consideration of the nature of ethics, basic ethical issues, and problems and modes of ethical reasoning. Includes Honors sections.

***PHIL 1240 Technology and Its Discontents 3(3)** Philosophical introduction to issues arising from the development of technologies, their implementation, and their integration into society. Considers theoretical questions regarding the nature of technology and its evaluation, as well as issues related to specific technologies.

***PHIL 2100 Evolution and Creation 3(3)** A critical comparison of evolution and creationism. Students examine the scientific, philosophical, and theological issues this clash brings to light, develop their ability to think through the various claims and counter claims critically, and then articulate a coherent position for themselves. Credit toward a degree will be given for only one of PHIL 2100 or BIOL 2100.

PHIL (CHIN) 3120 Philosophy in Ancient China 3(3) Study of the history of Chinese philosophy from fifth century BCE, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

PHIL (CHIN) 3130 Philosophy in Modern China 3(3) Study of the history of Chinese philosophy from the 19th century to the present, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

PHIL 3160 Modern Philosophy 3(3) Development of the modern view as seen in major Western philosophers of the 16th, 17th, and 18th centuries. Thought of Berkeley, Descartes, Hume, Leibniz, Locke, and Spinoza may be considered to illustrate the development of rationalism and empiricism.

PHIL 3170 Nineteenth-Century Philosophy 3(3) Development of 19th-century philosophy emphasizing selected works of philosophers such as Kant, Hegel, Marx, Nietzsche, and Kierkegaard.

PHIL 3180 Twentieth-Century Philosophy 3(3) Historical overview of selected significant movements in 20th-century Western philosophy such as Continental and/or analytic philosophy.

PHIL 3230 Theory of Knowledge 3(3) Examination of concepts, criteria, and decision procedures underlying rational belief and the justification of knowledge claims. Representative answers to the problem of skepticism are considered, with special attention to some leading theories of knowledge.

***PHIL 3240 Philosophy of Technology 3(3)** Examines technology and representative philosophical assessments of it with a focus on understanding its impact on the human condition.

PHIL 3250 Philosophy of Science 3(3) Philosophical study of problems generated by science, but that are not themselves scientific, such as what comprises a scientific theory; how scientists formulate theories and acquire knowledge; what, if anything, differentiates science from other ways of knowing; what role concepts play in scientific knowledge; whether scientific progress is rational.

***PHIL 3260 Science and Values 3(3)** Examination of several features of the relation between science and values. Topics may include ethical and social obligations of scientists, role of value judgments in scientific practice, and influence of social and political values on science and scientists.

PHIL 3270 Philosophy of Social Science 3(3) Inquiry into the philosophical foundations of social science, in particular questions of objectivity, explanatory structure, causality, agency, normativism and naturalism, and social determination of knowledge.

PHIL 3440 Business Ethics 3(3) Study of ethical issues created by business activities, relating them to fundamental questions of ethics generally. Representative topics may include hiring, firing, promotions, business and minorities, organizational influence in private lives, consumer interests, economic justice, and reindustrialization.

***PHIL 3450 Environmental Ethics 3(3)** Study of ethical problems in our dealings with the rest of nature and of how they relate to ethics in general. Representative

topics include the basis of ethics, nature and intrinsic value, duties to future generations, economics and the environment, rare species, animal rights, ethics and agriculture, energy doctrine.

****REL 1010 Introduction to Religion 3(3)** Study of the variety of religious experience and expression in human life.

****REL 1020 World Religions 3(3)** Survey of major religious traditions of the world. Includes Honors sections.

REL 3010 The Old Testament 3(3) Survey of the books of the Old Testament with special consideration given to the development of the concepts, institutions, and theology of the ancient Hebrews.

REL 3020 Survey of New Testament Literature 3(3) Study of the books of the New Testament from the standpoint of their occasion, content, literary form, and basic theology.

REL 3030 The Quran 3(3) Survey of Islamic Scripture, its origins, content, and interpretation, with attention to the development of Hadith and Sunna as well.

REL 3060 Judaism 3(3) Examines the development of Judaism from biblical to modern times.

REL 3070 The Christian Tradition 3(3) Examination of the development of Christianity in Western civilization from the post-New Testament period to the present, stressing institutional growth and changes, theological currents, and interaction of Christianity with culture.

REL 3120 Hinduism 3(3) A study of the history, practices, ideas, and social institutions associated with the variety of Indian religious traditions commonly called "Hinduism" from their origins to the present.

REL 3130 Buddhism 3(3) A study of the history, practices, ideas, and social institutions associated with the variety of Buddhist traditions found throughout the world. Discussion topics focus on the development of classical Buddhism in India and its expansion into Tibet, and includes a treatment of the distinctive developments in China and Japan.

REL 3150 Islam 3(3) A study of the origins, development, and history of the religion of Islam and Islamic cultures from the time of the Prophet to the present.

RUSS 3400 Russian Culture of the Nineteenth Century 3(3) Study of achievements in art, science, music, and literature in Russia during the 19th century. Taught in English.

SPAN 3070 The Hispanic World: Spain 3(3) Introduction to the significant aspects of the culture of Spain from its origins to the present. Emphasizes the artistic, social, historical, political, and contemporary issues of the Iberian Peninsula. *Preq:* SPAN 2020.

SPAN 3080 The Hispanic World: Latin America 3(3) Introduction to the significant aspects of the culture of Spanish-American countries. Emphasis is placed on the development of the political, economical, geographical, social, and artistic aspects of Spanish America from the indigenous period to the present. *Preq:* SPAN 2020.

***STS 1010 Survey of Science and Technology in Society 3(3)** Surveys historical, philosophical, and social studies of science; introduces the basic requisites for scientific and technological literacy; and considers the problems of responsible participation in a scientifically and technologically advanced society.

***STS 1020 Ideas, Machinery, and Society 3(3)** Interdisciplinary discussion course introducing the fundamental themes of STS: the influence of social groups on the development of science and technology and the effects of science and technology on society.

***STS 2150 A Critical Approach to the Global Challenge of Technological Revolutions 3(3)** This course takes a broad, humanistic perspective for understanding the challenges posed by scientific and technological revolutions, including innovations like nanotechnology, environmental preservation, biotechnology, digital technology, and nuclear fusion. Students learn skills and strategies for thinking critically about the nature of radical change in science and technology as it affects society.

***STS 3010 Science in Context 3(3)** Develops an understanding of the social character of scientific activity. Through the study of current work by leading historians, sociologists, and philosophers of science, students develop a comprehensive grasp of the social foundations of modern scientific inquiry.
Note: Included for 2012-2013, 2013-2014, and 2014-2015 curricula, but not for 2011-2012 curriculum.

***STS 3030 Technology, Culture and Society 3(3)** Addresses issues that arise from the interaction of technology with its social and cultural context. To better understand how technologies relate to societies and cultures, students learn to use the analytic tools required to evaluate the significance of technology, as well as its relations to social endeavors and cultural endeavors.

Note: This course satisfies the STS requirement (*) for the 2012-2013 curriculum, the 2013-2014 curriculum, and the 2014-2015 curriculum, but not for the 2011-2012 curriculum.

THEA 2100 Theatre Appreciation 3(3) Examination of the theatre event approached through historical context, play reading, analysis of production practices, and field trips to live dramatic performances. Includes Honors sections.

THEA 2790 Theatre Practicum 1(0,3) Practical work in theatre on a production designed for public presentation. May be repeated for a maximum of four credits.

THEA 3080 Survey of Broadway Musicals I 3(3) Introduction to Broadway musical repertoire from the Golden Age of Broadway: 1943–1964. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as MUSC 3080.

THEA 3090 Survey of Broadway Musicals II 3(3).
Survey of Broadway musical repertoire from new conceptual shows from 1965 to the present day. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as MUSC 3090.

THEA 3150 Theatre History I 3(3) Historical survey of Western theatre. Emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from antiquity to the Renaissance. *Preq:* Sophomore standing.

THEA 3160 Theatre History II 3(3) Historical survey of Western theatre. Emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from the Renaissance to the present. *Preq:* Sophomore standing.

THEA 3170 African-American Theatre I 3(3) Acquaints students with the origin and development of African-American playwrights, plays, players, and their contributions to the American theatre from the 19th century to the Civil Rights Movement.

WS 3010 Introduction to Women's Studies: Women's Lives 3(3) Interdisciplinary course exploring the unique features of women's lives from childhood to old age. Content is based on new research in many disciplines, including psychology, sociology, history, literature, and the arts. *Preq:* Sophomore standing

LIST S – Social Science Elective (2011-12, 2012-13, and 2013-14)

(The following list was compiled from the General Education Sections of the 2011-1012 University Announcements, the 2012-2013 University Announcements, the 2013-2014 University Announcements, and the 2014-2015 University Announcements. This list is same for all of the curriculum years mentioned above.)

Credits Required: 6

Restrictions:

- Courses must be selected from two different fields (departments).

Note: Courses on the Social Science list below which also satisfy the Science and Technology in Society (STS) requirement or the Cross-Cultural Awareness (CCA) requirement are marked with * or **, respectively. (If courses selected to satisfy the Non-Literature requirement or the Social Science requirement do not also satisfy the CCA requirement and the STS requirement, then additional courses must be selected from the CCA and/or STS course lists shown on p. 38 of the 2014-2015 University Announcements.)

****ANTH 2010 Introduction to Anthropology 3(3)** Offers a four-field overview: primates and human biological origins; the development of agriculture and complex societies in the archaeological record; contemporary human societies cross-culturally; and the relationship between languages and cultures. An anthropological perspective on contemporary human problems is also presented.

APEC 2020 Agricultural Economics 3(3) Analytical survey of the various subdivisions of agricultural economics, including farm organization, enterprise, land economics, marketing, farm prices, governmental farm policies, and the relation of agriculture to the national and international economy.

APEC 2570 Natural Resources, Environment, and Economics 3(3) Economic principles applied to resource allocation problems related to environmental and natural resource issues.

ECON 2000 Economic Concepts 3(3) One-semester survey of basic economic concepts that offers an overview of both microeconomics and macroeconomics. Not intended for business majors or other students seeking a comprehensive introduction to economic analysis and its applications. Credit will not be given to students who have received credit for ECON 2110 or 2120.

ECON 2110 Principles of Microeconomics 3(3) Introduction to economic reasoning

and its application to the study of the behavior of consumers and business firms. Particular topics include competition, monopoly, international trade, and the impact of selected public policies. Intended as the first of a two-semester sequence in the foundations of economics. Includes Honors sections.

ECON 2120 Principles of Macroeconomics 3(3) Continuation of ECON 2110 in which fundamental economic principles are applied to the study of aggregate economic performance. Topics include the forces determining the rates of inflation, unemployment, and economic growth, with particular emphasis on the influence of fiscal and monetary policies through financial markets. Includes Honors sections.
Preq: ECON 2110.

GEOG 1010 Introduction to Geography 3(3) Survey of the nature of geography emphasizing the discipline's organizing themes of earth science, relations between people and their environments, interrelations between places, locational analysis, and area studies.

****GEOG 1030 World Regional Geography 3(3)** Systematic and descriptive survey of the major regions of the world, including their physical and cultural features. Provides a global context for courses in the social sciences and humanities.

GEOG 1060 Geography of the Physical Environment 4(3,3) Examines the condition of the physical environment, especially the earth's surface and the processes that act on it. Topics range from earth-sun relations to the evolution of landscapes; human habitats and human alteration of the environment. *Coreq:* GEOG 1061.

HIST 1010 History of the United States 3(3) Political, economic, and social development of the American people from the period of discovery to the end of Reconstruction. Includes Honors sections.

HIST 1020 History of the United States 3(3) Political, economic, and social development of the American people from the end of Reconstruction to the present. Includes Honors sections.

***HIST 1220 History, Technology, and Society 3(3)** Topics in the history of technology with emphasis on how technology affects society and how society shapes technology. Emphasis is on 19th and 20th century America, but some material from other periods of Western Civilization and other world regions may be discussed. Includes Honors sections.

***HIST 1240 Environmental History Survey 3(3)** Introduction to environmental history, in the United States and globally, with emphasis on changing attitudes toward the environment and the interaction between science and public policy. Includes Honors sections.

****HIST 1720 The West and the World I 3(3)** Examines the history of the West from early times until 1628. After a comparative evaluation of the emergence of civilization around the globe, course concentrates on the history of the peoples of Europe up to the age of European exploration and overseas expansion. Includes Honors sections.

****HIST 1730 The West and the World II 3(3)** Surveys the history of the West in modern times, from the late 17th century to the present. Particular emphasis is placed on Europe's interaction with non-western societies. Through cross-cultural comparisons, European history is placed in global context. Includes Honors sections.

****HIST 1930 Modern World History 3(3)** Political, economic, social, and cultural history of the modern world from the 19th century to the present.

HON 1920 Freshman Colloquium: Social Science 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the "idea of the University." Explores foundations and consequences of human thought and behavior at the individual and societal levels, with emphasis on concepts and tools that organize scholarly inquiry across the social and behavioral sciences. Topics vary. *Preq:* Membership in Calhoun Honors College.

HON 2020 Science, Culture, and Human Values 3(3) Interdisciplinary honors seminar that unifies natural scientific, social scientific, and humanistic disciplines into a holistic view of the modern world and its future. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

HON 2200 Studies in Social Science 3(3) Discipline specific social science seminar including a disciplinary introduction (anthropology, economics, history, political science, psychology or sociology) and a detailed examination of specific theories and methods within that discipline. May be repeated for a maximum of six credits, but only if different disciplines are covered. *Preq:* Membership in Calhoun Honors College.

****PAS 3010 Introduction to Pan African Studies 3(3)** Study of African American experience from an Afrocentric perspective from colonial America to the present.

POSC 1010 American National Government 3(3) Introduction to American national government and politics examining topics such as the Constitution, federalism, political institutions, political behavior, and political participation.

****POSC 1020 Introduction to International Relations 3(3)** Overview of both theory and practice in contemporary global politics. Topics include the structure of and primary actors in the international system; reasons conflict occurs; and roles of international institutions, law, and policy. Includes Honors sections.

POSC 1030 Introduction to Political Theory 3(3) Introduction to major themes and thinkers in the Western tradition of political thought. Students examine classic primary texts of the ancient and modern periods, including Plato, Aristotle, Hobbes and Locke, to acquire a working conceptual vocabulary of normative and theoretical terms, political ideologies, and basic patterns of political organization. Includes Honors sections.

****POSC 1040 Introduction to Comparative Politics 3(3)** Introduction to the study of comparative politics in the post-Cold War era, with emphasis on theories and applications. Topics include democratic and nondemocratic systems; ideology; political culture; party systems; and legislative, executive, and judicial structures. Includes Honors sections.

PSYC 2010 Introduction to Psychology 3(3) Introduction to the study of behavior. Analysis of the biological bases of behavior, learning, thinking, motivation, perception, human development, social behavior, and the application of basic principles to more complex phenomena such as education, personal adjustment, and interpersonal relations. Includes Honors sections.

****PSYC 2500 Pursuing Happiness 3(3)** Introduces psychological theories and principles used to study human behavior (methods, cognition, motivation, etc.). The concept of happiness is investigated as a psychological construct across cultures. Offered summer session only.

***PSYC 2750 Applied Psychology and Transportation 3(3)** Introduces psychological principles used to study human behavior (methodological, cognitive, perceptual, etc.). These psychological principles, in addition to ethical, legal, and societal perspectives, are applied to transportation issues.

RS 3010 Rural Sociology 3(3) Study of human social relationships as influenced by life in the open country and in small towns and villages, including considerations of the rural population, rural social institutions, processes of change in agricultural technology, and community area planning and development. Offered spring semester only.

SOC 2010 Introduction to Sociology 3(3) Sociological perspective: the study of contemporary groups, organizations, and societies in terms of human social behavior, social change, social structure, and social institutions. Includes Honors sections.

SOC 2020 Social Problems 3(3) Social problems involving the family, education, health care, political and legal systems, economy, population, environment, community; and special problems associated with age, economics, racial status, and gender inequality.

Summary of Curriculum Requirements (Electrical Engineering)

2014-2015

Total Credits Required = 126, consisting of:

- **Required Courses (96 credit hours)**
- **Restricted Electives (30 credits) – Courses which must be selected from the following lists, some of which include additional restrictions:**
 - **Technical Electives – 9 credit hours (List T)**
 - 2 courses must be from the same Subject Area (depth requirement)
 - **Advanced Math Elective – 3 credit hours (List M)**
 - **Communications Elective – 3 credit hours (List C)**
 - **Arts and Humanities Electives – 6 credit hours (List H)**
 - 1 Literature course
 - 1 Non-Literature course
 - **Social Science Electives – 6 credit hours (List S)**
 - 2 courses from different fields
 - **Special Elective – 3 credit hours (List Z)**
 - 1 additional course from List T, List M, List H, List S, List 5HS, or from the ELE and additional MATH courses included in List Z)

Science and Technology in Society (STS) Requirement - A course selected as an Arts and Humanities Elective or a Social Science Elective also can satisfy the Science and Technology requirement if it is marked with *.

Cross-Cultural Awareness (CCA) Requirement - A course selected as an Arts and Humanities Elective or a Social Science Elective also can satisfy the Cross-Cultural Awareness requirement if it is marked with **.

Electrical Engineering

Bachelor of Science Degree

Curriculum year 2014-2015

FRESHMAN YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
ENGR 1050 Engr Discipline & Skills I	1		CH 1020 & 1021 Gen Chemistry II	4	
ENGR 1060 Engr Discipline & Skills II	1		ENGR 1070 Program & Prob Slvng I	1	
CH 1010 & 1011 General Chemistry	4		ENGR 1080 Program & Prob Slvng II	1	
ENGL 1030 Accelerated Composition	3		ENGR 1090 Program & Prob Slvng III	1	
MATH 1060 Calculus I	4		Hum/Soc Sci req	3	
Hum/Soc Sci req	3		MATH 1080 Calculus II	4	
			PHYS 1220 Physics with Calculus I	3	
	16			17	

SOPHOMORE YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
CPSC 1110 & 1111 C/C++	3		ECE 2120 Electrical Engr Lab II	1	
ECE 2010 Logic & Computing Devices	2		ECE 2620 Electric Circuits II	3	
ECE 2020 Electric Circuits I	3		ECE 2720 Computer Organization	3	
ECE 2090 Logic Lab	1		ECE 2730 Computer Org Lab	1	
ECE 2110 Electrical Engineering Lab I	1		MATH 2080 Differential Equations	4	
MATH 2060 Calculus III	4		Hum/Soc Sci req OR EE Tech Elec	3	
PHYS 2210 Physics with Calculus II	3		[ECE 2220 Sys Progrmng]		
	17			15	

JUNIOR YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
ECE 3110 Electrical Engr Lab III	1		ECE 3120 Lab IV	1	
ECE 3200 Electronics I	3		ECE 3170 Random Signal	3	
ECE 3300 Signals, Sys, & Transforms	3		ECE 3210 Electronics II	3	
ECE 3600 Electric Power Engineering	3		ECE 3710 Microcntrlr Interfacing	3	
ECE 3800 Electromagnetics	3		ECE 3720 Microcontroller Lab	1	
Adv. Mathematics Elective ¹	3		ECE 3810 Fields, Waves & Circuits	3	
	16		ENGL 3140 Technical writing	3	
				17	

SENIOR YEAR

Fall semester	Cr	Term completed	Spring semester	Cr	Term completed
COMM 1500 & 1501 or COMM 2500 & 2501	3		ECE 4960 Systems Design II	2	
ECE 4090 Cont & Discrete Sys Design	3		EE Technical Elective OR	3	
ECE 4270 Communications Systems	3		Hum/Soc Sci req		
ECE 4950 Systems Design I	2		EE Technical Elective	3	
EE Technical Elective	3		Hum/Soc Sci req	3	
			Special Elective ²	3	
	14			14	

NOTES:

1. Advanced Mathematics Elective Options: MATH 4190, MATH 4340, MATH 4350, MATH 4530, or MATH 4540.
2. Special Elective Options:
 - a. 3 additional credits of approved Humanities/Social Science courses; or
 - b. ELE 3010 - Executive Leadership and Entrepreneurship I or ELE 4010 - Executive Leadership and Entrepreneurship II; or
 - c. An additional 3-credit, 400-level course from the EE Technical Elective List or the CpE Technical Elective List; or
 - d. An additional 3-credit MATH course from the following list: MATH 3110 (Linear Algebra), MATH 4120 (Intro. to Modern Algebra), MATH 4190 (Discrete Math I), MATH 4340 (Advanced Engineering Math), MATH 4350 (Complex Variables), MATH 4400 (Linear Programming), MATH 4410 (Intro to Stochastic Models), and MATH 4530 (Advanced Calculus I), MATH 4540 (Advanced Calculus II).

Electrical Engineering Technical Requirements

Courses that satisfy EE technical requirements are shown below. Three courses (9 credits) must be taken. The 6xxx version of courses listed as *ECE 4xxx have been approved for the combined BS EE/MS EE program. Students who qualify for the combined program can use up to 9 credits of approved courses to jointly satisfy BS EE and MS EE requirements. The EE Student Handbook includes a list of ECE 8xxx courses which have also been approved for the combined program.

Subject Area	Course	Semester offered	Pre-requisites
Computer Systems And Architecture [CSA]	ECE 2220	Fall & Spring	CPSC 1110
	ECE 4170	Spring	ECE 3220, ECE 3520, MATH 4190
	ECE 4290	Fall	ECE 2720
	*ECE 4420	Fall	ECE 3220, ECE 3520
	*ECE 4680	Spring	ECE 2230 and ECE 3710
	ECE 4730	Fall or Spring	ECE 3220
Biomedical Systems	BIOE 2010		BIO E 1010 or BIOL 1030 or 1100; CH 1020
	BIOE 3700		ECE 2020, MATH 2080
	BIOE 4710		MATH 2080, PHYS 2210, ECE 3200
Communication Systems & Networks [CSN]	* ECE 4300	Fall or Spring	ECE 3170, 3300 AND instructor permission
	* ECE 4380	Spring	Sr. standing in EE, CpE or CPSC
	* ECE 4400	Spring	ECE 2720 and ECE 3170
Digital Signal Processing [DSP]	* ECE 4420	Fall	ECE 3220 and ECE 3520
	* ECE 4670	Fall & Summer	ECE 3300
Applied Electromagnetics [AEM]	* ECE 4350	Spring	ECE 3810
	* ECE 4360	Fall	ECE 3810, co-req MATH 3110 or 4340
	* ECE 4390	Check with the dept	ECE 3810, co-req MATH 4340
	* ECE 4460	Spring	ECE 3300, 3810; MATH 3110 or 4340
Electronics [ELE]	* ECE 4040	Fall	ECE 3200, co-req MATH 3110 or 4340
	* ECE 4060	Fall	ECE 3200, co-req MATH 3110 or 4340
	* ECE 4220	Check with the dept	ECE 3210, 3300, 3600, 3710, 3810
	* ECE 4320	Spring	ECE 3210, co-req MATH 3110 or 4340
	* ECE 4590	Check with the dept	ECE 3210, co-req MATH 3110 or 4340
Intelligent Systems [CRB]	* ECE 4420	Fall	ECE 3220 and ECE 3520
	* ECE 4550	Summer	MATH 2060, 3110
	ECE 4570	Summer	ECE 2070 or ECE 3200
	* ECE 4670	Fall & Summer	ECE 3300
	* ECE 4680	Spring	ECE 3710 and ECE 2230
Power [POW]	* ECE 4180	Fall	ECE 3600, 3800
	* ECE 4190	Spring	ECE 3210, 3600, 3800, co-req MATH 4340
Renewable Energy and Electric Vehicles	* ECE 4190	Spring	ECE 3210, 3600, 3800, co-req MATH 4340
	ECE 4200	Spring	ECE 2070 or ECE 3200
	ECE 4570	Summer	ECE 2070 or ECE 3200
	ECE 4610	Fall	ECE 3200
	ECE 4700	Spring	ECE 3200
	ECE 4710	Spring	ECE 3200

Other courses: ECE 4050¹, ECE 4600¹, ECE 4910 (HON)¹, ECE 4920¹, ECE 4930¹, ECE 4990¹, ECE 4990 (HON)¹

¹ A maximum of 3 credits from this category may be used to satisfy the technical elective requirement.

ECE Pre-reqs and Co-reqs

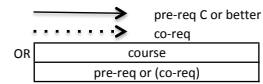
ECE course	Pre-requisites	Co-requisites	Pre-requisites or Concurrent enrollment
1990			
2010	MATH 1080, PHYS 1220		
2020	MATH 1080, PHYS 1220		
2040			ECE 2020
2070	MATH 2060, PHYS 2210		
2080			ECE 2070
2090			ECE 2010
2110			ECE 2020
2120	ECE 2020, 2110		ECE 2620
2220	CPSC 1110		
2230	ECE 2220		
2620	ECE 2020, MATH 2060, PHYS 2210		MATH 2080
2630			ECE 2620, MATH 2080
2720	ECE 2010, CPSC 1110		
2730			ECE 2720
2990			
3000			
3080	MATH 2060, PHYS 2210		
3110	ECE 2120, 2620, MATH 2080, PHYS 2210		ECE 3200
3120	ECE 3110, 3200		ECE 3210
3170	ECE 2620, MATH 2080		ECE 3300
3200	ECE 2620, MATH 2080, PHYS 2210		
3210	ECE 3200		
3220	ECE 2230, 2720		
3270	ECE 3710		
3290	ECE 2230, 2720		
3300	ECE 2620, MATH 2080		
3520	ECE 2230		CPSC 2070 or MATH 4190
3600	ECE 2620, PHYS 2210		
3710	ECE 2620, 2720		ECE 3200
3720			ECE 3710
3800	ECE 2620, MATH 2060, PHYS 2210		
3810	ECE 3800, MATH 2080		
3990			
4040, 6040	ECE 3200		MATH 3110 OR 4340
4050	ECE 3300 OR 4090, & consent of project supervisor		
4060, 6060	ECE 3200		MATH 3110 OR 4340
4090	ECE 3300		
4120			MATH 4340, & ECE 3600 OR ECE 4190
4170, 6170	ECE 3220, 3520, MATH 4190		
4180, 6180	ECE 3600, 3800		
4190, 6190	ECE 3210, 3600, 3800		MATH 4340
4200, 6200	ECE 2070 OR 3200		
4220, 6220	ECE 3210, 3300, 3600, 3710, 3810	ECE 4221	
4221, 6221		ECE 4220	
4270	ECE 3170, 3300		
4290, 6290	ECE 2720		
4300, 6300	ECE 3170, 3300 and consent of instructor (consent not required for honors students or 6300)		
4320, 6320	ECE 3210		MATH 3110 OR 4340
4350, 6350	ECE 3810		
4360, 6360	ECE 3810		MATH 3110 OR 4340
4380, 6380	Senior standing in EE or CpE or CPSC		
4390, 6390	ECE 3810		MATH 4340
4400, 6400	ECE 2720, 3170		
4420, 6420	ECE 3220, 3520		

ECE Pre-reqs and Co-reqs

ECE course	Pre-requisites	Co-requisites	Pre-requisites or Concurrent enrollment
4460, 6460	ECE 3300, 3810; and either MATH 3110 OR 4340		
4490, 6490	Senior standing in CpE	ECE 4491	
4491, 6491		ECE 4490	
4530	ECE 3220, 3520		
4531		ECE 4530	
4550, 6550	MATH 2060, 3110		
4570, 6570	ECE 2070 or 3200		
4590, 6590	ECE 3210	ECE 4591	MATH 3110 OR 4340
4591, 6591		ECE 4590	
4600	ECE 2620 and MATH 3110 and MATH 4340		
4610, 6610	ECE 3200		
4670, 6670	ECE 3300		
4680, 6680	ECE 2230 and ECE 3710	ECE 4681	
4681, 6681		ECE 4680	
4700	ECE 3200		
4710	ECE 3200		
4730, 6730	ECE 3220 or 3290		
4910			
4920, 6920			
4930, 6930	Consent of instructor		
4950	for EEs: curricula years before 2010-2011 - ECE 3210, 3300, 3600, 3710, 3810 [3 of which must be completed prior to enrollment, with the remaining taken as coreq courses]; curricula year 2010-2011 and newer EEs: - ECE 3200, 3300, 3600, 3800; for CpEs - ECE 3200, 3220, 3300, 3520 and 3710	ECE 4951	
4951		ECE 4950	
4960	for EEs: curricula years before 2010-2011 - ECE 3210, 3300, 3600, 3710, 3810, 4090, 4950; curricula year 2010-2011 and newer EEs: - ECE 3210, 3710, 3810, 4090, 4950; for CpEs - ECE 4090 and 4950		
4990			

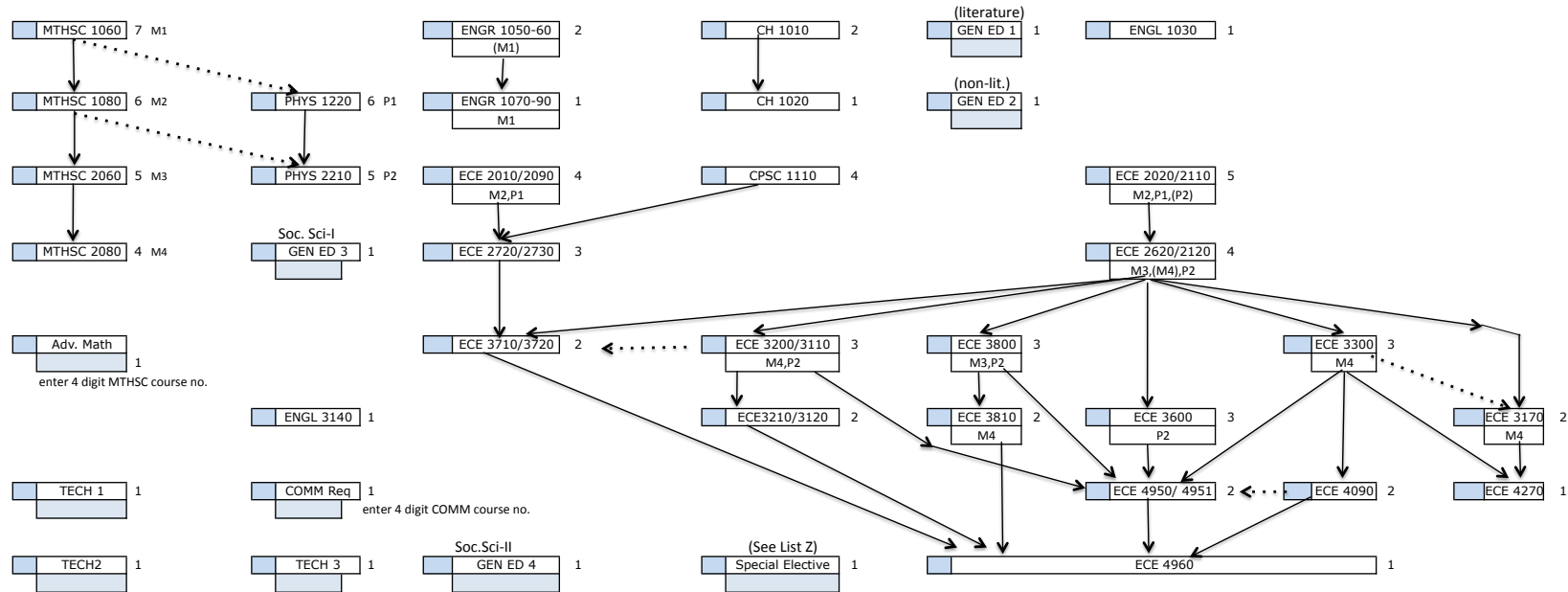
updated 16 March 2014

ELECTRICAL ENGINEERING CURRICULUM 2014-15



Name
CU id

Date



INSTRUCTIONS:

In the small box to the left of course no:

Enter 1 if you propose to take this course during the next term. (box will turn yellow)

Enter 2 if you are currently enrolled in this course. (Box will turn orange.)

Enter 3 if you have successfully completed this course. (Box will turn green.)

Enter 4 if you propose to take this course the term after next. (Box will turn blue)

Enter 5 if you propose to take this course the term after that. (Box will turn purple)

Enter 6 if you propose to take this course the term after that. (Box will turn pink)

NOTES

Minimum No. of Additional Terms to Graduate
(if currently enrolled, this includes current term)

7

Used to satisfy CCA:

Used to satisfy STS:

LIST H – Arts and Humanities Electives (2014-15)

(The following list was compiled from the General Education Sections of the 2014-2015 University Announcements.)

Credits Required: 6

Restrictions:

- One course must be selected from Literature courses.
- One course must be selected from Non-Literature courses

Note: Courses on the Non-Literature list which also satisfy the Science and Technology in Society (STS) requirement are marked with *. Courses which satisfy the Cross-Cultural Awareness (CCA) requirement are marked with **. (If courses selected to satisfy the Non-Literature requirement or the Social Science requirements do not also satisfy the CCA requirement and the STS requirement, then additional courses must be selected from the CCA and/or STS course lists shown on p. 38 of the 2014-2015 University Announcements.)

Literature Courses (2014-15)

ENGL 2020 The Major Forms of Literature 3(3) Study of the basic structures and elements of fiction, poetry, and drama, including literary and critical theory, with readings in American, British, and world literature. Proficiency in composition must be demonstrated. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2120 World Literature 3(3) Introduction to selected works from the Americas, Africa, Asia, Europe, and the Middle East from ancient to modern eras, with emphasis on major authors. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2130 British Literature 3(3) Introduction to selected authors and major periods of the British literary tradition, from the Middle Ages to World War II, with attention to poetry, fiction, and drama. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2140 American Literature 3(3) Introduction to selected authors and major periods of the American literary tradition from 1620 to 1945. Includes Honors sections. *Preq:* ENGL 1030.

ENGL 2150 Literature in 20th- and 21st- Century Contexts 3(3) Introduction to major contemporary cultural movements via selected authors in 20th- and 21st-century literature, primarily American and British, with attention to poetry, fiction, and drama since World War II. Includes Honors sections. *Preq:* ENGL 1030.

CHIN 4010 Pre-Modern Chinese Literature in Translation 3(3) Chinese literature from 8th century B.C.E. to 19th century C.E., including poetry, prose, drama, fiction, and literary criticism. All readings and discussions are in English.

FR 3000 Survey of French Literature 3(3) Study of selected masterpieces of French literature in their artistic, cultural, and historical context. May include theme and genre studies. *Preq:* FR 2020.

FR 3040 French Short Story 3(3) Introduction to the study of French narrative literature and the elements of critical analysis through the examination of short stories spanning the medieval era to the present from both France and Francophone countries. *Preq:* FR 3050.

GER 2600 Selected Topics in German Literature 3(3) Study of significant aspects of German literature. Conducted in English.

GER 3060 The German Short Story 3(3) Examines the Austrian, German, and Swiss short story as a distinct literary genre that flourished particularly after 1945. Provides ample conversation and composition practice, as well as an introduction to principles of literary prose analysis. *Preq:* GER 2020.

GER 3600 German Literature to 1832 3(3) Examines selected topics in German literature from the Middle Ages to 1832. Readings may include works by Lessing, Goethe, Schiller, and the Romantics. *Preq or concurrent enrollment:* GER 3050 or GER 3060.

GER 3610 German Literature from 1832 to Modernism 3(3) Examines drama, poetry, and prose from the Biedermeier period through naturalism and realism to the advent of modernism. *Preq:* GER 3050 or 3060.

HON 1900 Freshman Colloquium: Arts and Humanities (Literature) 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the idea of the University. Explores key literary works that enhance understanding of historical eras, intellectual and artistic movements, or cultures. Topics vary. *Preq:* Membership in Calhoun Honors College.

HON 2210 Studies in Literature 3(3) Introduction to selected authors and literary works focused around a specific topic. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

ITAL 3010 Introduction to Italian Literature 3(3) Study of selected texts of Italian literature in their artistic, cultural, and social context. May include theme and genre studies. *Preq:* ITAL 2020.

ITAL 3020 Modern Italian Literature 3(3) Study of selected works from major 19th- and 20th-century Italian authors, including Manzoni, Verga, Svevo, Moravia, Ginzburg. *Preq:* ITAL 2020.

JAPN 4010 Japanese Literature in Translation 3(3) Introduction to Japanese literature from 712 AD to the present. Cultivates an appreciation for Japanese literature and culture. All readings and discussions are in English. May not be used to satisfy general foreign language requirements.

JAPN 4060 Introduction to Japanese Literature 3(3) Students read contemporary Japanese narrative fiction, poetry, and drama in their historical and social context. *Preq:* 3000-level Japanese course.

RUSS 3600 Russian Literature to 1910 3(3) Study of key texts in the modern literary tradition in Imperial Russia from Pushkin to Chekhov. Readings and lectures are in English.

RUSS 3610 Russian Literature Since 1910 3(3) Study of key texts in modern Russian and Soviet literature with particular focus on Russian modernist movements and Socialist Realism. Readings and lectures are in English.

SPAN 3110 Survey of Spanish-American Literature 3(3) Literary movements, influences, authors, and works from the Colonial period to the present. *Preq:* Six credits in Spanish at the 300 level, including at least one course in literature or culture.

SPAN 3130 Survey of Spanish Literature I 3(3) Literary movements, influences, and authors from the beginning to the end of the 17th century; representative works, discussions. *Preq:* Six credits in Spanish at the 3000 level, including three credits of literature or culture.

Non-Literature Courses (2014-15)

AAH 1010 Survey of Art and Architectural History I 3(3) Comprehensive survey of art and architectural history of Western heritage as well as significant coverage of Asian, African, native American, and south American art. The arts are studied within the contexts of history, geography, politics, religion, and culture. Survey includes Ancient through Gothic. Includes Honors sections.

**** AAH 2100 Introduction to Art and Architecture 3(3)** One-semester lecture survey that introduces the nonmajor to an overview of art and architecture from different time periods and cultures. Students are encouraged to appreciate the contribution to art made by the great masters and to discern different styles, art techniques, and creative traditions. Includes Honors sections.

ART 3750 Writing for the Arts in Charleston 3-6(3-6) Using Charleston's

International Spoleto Festival USA as a laboratory, students engage in interdisciplinary, critical readings and observations of multiple elements of performing and visual arts programs, and write extensively about their place in a global, contemporary society. Students develop professional and technological literacies using print and digital media. Offered summer only. May be repeated for a maximum of six credits. *Preq:* ENGL 1030

**** ASL 3050 Deaf Studies in the United States 3(3)** In-depth look into language, culture, and daily lives of approximately one million people who use American Sign Language as their primary language. Traces the roots of American Sign Language from pre-revolutionary times to current science and knowledge and how it applies to professional fields. *Preq:* ASL 2020.

CAAH 2010 Cultural Literacies Across Media 3(3) Hands-on practicum course in which students reflect critically on the cultural, aural, visual, professional and technological literacies learned as a result of a semester-long study abroad experience. May be repeated for a maximum of six credits. *Preq:* Enrollment in a study abroad program and ENGL 1030.

CHIN (PHIL) 3120 Philosophy in Ancient China 3(3). Study of the history of Chinese philosophy from fifth century BCE, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

CHIN (PHIL) 3130 Philosophy in Modern China 3(3). Study of the history of Chinese philosophy from the 19th century BCE, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' view and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

CHIN 4990 Selected Topics in Chinese Culture 3(3) Examination of various social and cultural topics, including art and literature, philosophical and religious traditions, health and healing, and folk and popular cultures. May be repeated for a maximum of six credits, but only if different topics are covered. Readings and discussions are in English. May not be used to satisfy general foreign language requirements.

COMM 3030 Communication Law and Ethics 3(3) Major topics in communication law and free expression and in communication ethics. *Preq:* COMM 2010 with a *C or better*.

COMM 3080 Public Communication and Popular Culture 3(3) Examines artifacts of popular culture, paying particular attention to their relationship to politics and public life. Explores the structures and constraints of the culture industry. Students

apply communication principles to various examples. *Preq:* COMM 201 with a C or better.

COMM 3090 Visual Discourse and the Public 3(3) Examines the role of visuality in society and the cultural implications for ways of seeing. Using visual artifacts of various types, students learn the logic of visual representation. *Preq:* COMM 201 with a C or better.

COMM 4020 Mass Communication: History and Criticism 3(3) Critical examination of mass communication in America, including discussions of history, theory, and current issues in television, film, popular music, telecommunications, and other media. *Preq:* COMM 201 with a C or better.

ENGL 3010 (GW) Great Books of the Western World 3(3) Introduces Great Works minor. Includes readings about the Great Books concept, as well as various great books from the humanities, arts and natural and social sciences. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

ENGL 3550 Global Studies in Popular Culture 3(3) Examination of the nature, functions, history, and impact upon American society of best sellers, popular magazines, television, movies, Internet, gaming platforms, and emerging electronic genres. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

ENGL 3570 Film 3(2) Examination of the film medium as an art form: its history, how films are made, why certain types of films (western, horror movies, etc.) have become popular, and how critical theories provide standards for judging film. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150. *Coreq:* ENGL 3571.

ENGL (LANG) 4540 Selected Topics in International Film 3(2) Presents subtitled films of specific world cultures and basic film theory and discourse applicable to the selected areas. Taught in English. May be repeated for a maximum of six credits with consent of department chair. *Preq:* ENGL 3100. *Coreq:* ENGL 4541.

FR 3070 French Civilization 3(3) Study of significant aspects of French culture from its origins to the present. *Preq:* FR 3050.

GW (ENGL) 3010 Great Books of the Western World 3(3) Introduces Great Works minor. Includes readings about the Great Books concept, as well as various great books from the humanities, arts, and natural and social sciences. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL 2140 or ENGL 2150.

GW 4050 The Darwinian Revolution 3(3) Examination of Charles Darwin's *The*

Origin of Species and its cultural impact from his time to ours. Topics include the contemporaneous reception of Darwin's work, the scopes Monkey trial, and more recent controversies over Creationism and Intelligent Design. Includes Honors sections. *Preq:* ENGL 2020 or ENGL 2120 or ENGL 2130 or ENGL2140 or ENGL 2150.

GER 3400 German Culture 3(3) Examines the cultures of German-speaking nations from their origins to the present. Emphasizes the federal republic of Germany both before and after the German unification of 1990. *Preq:* GER 2020.

HON 1910 Freshman Colloquium: Arts and Humanities (Non-Literature) 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the "idea of the University." Explores historical eras, intellectual and artistic movements, or cultures emphasizing multiple tools of analysis, including literature, art, music, and film. Topics vary. *Preq:* Membership in Calhoun Honors College.

*** HON 2010 Structures and Society 3(3)** Interdisciplinary honors seminar that examines selected structures regarded as monuments to artistic creativity and technological genius and the ways that structures affect and are affected by the societies that produce them. *Preq:* Membership in Calhoun Honors College.

HON 2030 Society, Art, and Humanities 3(3) Combines readings and methodologies from the social sciences, arts, and humanities to study the interrelationships among the disciplines and their societal effects. Subjects vary. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

HON 2100 Experiencing the Arts 3(2,3) Interdisciplinary exploration of the arts through seminar discussions and attendance at performing and visual arts events on campus. Exploration of arts and aesthetics leading to performance previews, reviews, and experiences of Brooks Center and Lee Gallery events. May be repeated for a maximum of nine credits. *Preq:* Membership in Calhoun Honors College. *Coreq:* HON 2011

HON 2220 Studies in Arts and Humanities 3(3) Exploration of music, literature, film, philosophy or another area in humanities by examining a discipline specific topic. Focus may be on a particular scholar, era or culture idea or concept specific to a particular arts/humanities discipline. May be repeated for a maximum of six credits, but only if different disciplines are covered. *Preq:* Membership in Calhoun Honors College.

HUM 3010 Humanities 3(3) Introduction to humanistic studies focusing on relationships among disciplines—painting, sculpture, architecture, music, literature, philosophy, and drama—beginning with prehistory and continuing to the Renaissance.

HUM 3020 Humanities 3(3) Introduction to humanistic studies focusing on relationships among disciplines—painting, sculpture, architecture, music, literature, philosophy, and drama—beginning with the 17th century and continuing to the present.

HUM 3060 Creative Genius in Western Culture 3(3) Investigation of creativity through study of great innovators in art, literature, music, and ideas. May be repeated once for credit.

****HUM 3090 Studies in Humanities 3(3)** Interdisciplinary approach to the humanities. Special subject matter varies according to the instructor and as approved by the chair of the English Department. May be repeated once for credit.

JAPN 3070 Japanese Civilization I 3(3) Study of the significant aspects of the culture of Japan. *Preq:* JAPN 2020.

JAPN 3080 Japanese Civilization II 3(3) Study of significant aspects of the culture of Japan. *Preq:* JAPN 2020.

LANG 3400 Cosmopolis: The Myth of the City 3(3) Cross-cultural inquiry into the idea of the city through literary, political, and philosophical texts as well as film and architecture. *Preq:* Junior standing.

LANG 3420 Sacred and Profane Bodies 3(3) Cross-cultural inquiry into the ambivalence surrounding female sexuality implicit in images of women and, in particular, the division of women into earthly and divine categories. *Preq:* Junior standing.

LANG 3560 Faces of Evil 3(3) Cross-cultural inquiry into evil as an ineradicable challenge to representation disclosed by notions of the monstrous, the enemy, the infinite, and death in literature, cultural theory, and the arts. *Preq:* Junior standing.

LANG (ENGL) 4540 Selected Topics in International Film 3(2) Presents subtitled films of specific world cultures and basic film theory and discourse applicable to the selected areas. Taught in English. May be repeated for a maximum of six credits with consent of department chair. *Preq:* ENGL 3100. *Coreq:* ENGL 4541.

***LARC 1160 History of Landscape Architecture 3(3)** History of design on the land from prehistory to the present. Overview of the interface of aesthetics, science, technology, and natural features that influence cultures in shaping places. **Note:**

****MUSC 2100 Music Appreciation: Music in the Western World 3(3)** Deepens students' appreciation of their musical heritage through study of the elements of the musical language and its development in Western culture. Includes Honors sections.

MUSC 3080 Survey of Broadway Musicals I 3(3) Introduction to Broadway musical repertoire from the Golden Age of Broadway: 1943–1964. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as THEA 3080.

MUSC 3090 Survey of Broadway Musicals II 3(3) Survey of Broadway musical repertoire from new conceptual shows from 1965 to the present day. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as THEA 3090.

MUSC 3110 History of American Music 3(3) Music in America from 1620 to the present. Indigenous and borrowed influences are examined.

MUSC 3120 History of Jazz 3(3) Comprehensive survey of jazz elements and styles. A historical perspective from Dixieland to bebop to jazz/rock is included.

MUSC 3130 History of Rock and Roll 3(3) Comprehensive survey of rock elements, styles, and artists. Emphasizes the evolution of rock and roll including a broad examination of musical influences. Course content examines how rock and roll both reflected and influenced social issues.

****MUSC 3140 World Music 3(3)** Introduction to ethnomusicology and music of the world's peoples. Emphasis is placed on music through culture.

MUSC 3170 History of Country Music 3(3) Chronological study of country music origins, styles, and artists. Emphasizes the evolution of country music from a cultural expression of the South to a commercial art form of worldwide appeal.

MUSC 3610 Marching Band 1(3) Ensembles: devoted to musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. Offered fall semester only. *Preq:* Consent of director.

MUSC 3620 Symphonic Band 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3630 Jazz Ensemble 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3640 Concert Band 1(2) Devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of

director.

MUSC 3690 Symphony Orchestra 1(3) Mid-sized, college-community orchestra devoted to performing works from standard repertoire. Weekly evening rehearsals with one or more performances per semester. *Preq:* Consent of director.

MUSC 3700 Clemson University Singers 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given periodically in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3710 Women's Glee 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given in addition to the minimum rehearsal time. *Preq:* Consent of director.

MUSC 3720 Men's Glee 1(3) Ensembles: devoted to the musical training of ensemble members through reading and rehearsal of appropriate music. Public performances are given in addition to the minimum rehearsal time. *Preq:* Consent of director.

PHIL 1010 Introduction to Philosophic Problems 3(3) Discussion of representative philosophical questions that arise from human thought and action. Characteristic topics are values, knowledge, human nature, and society. Includes Honors sections.

PHIL 1020 Introduction to Logic 3(3) Introduction to methods of evaluating arguments. Gives simple valid argument forms, which can be joined together to produce the logical form of virtually any argument. Informal fallacies may also be considered. Includes Honors sections.

PHIL 1030 Introduction to Ethics 3(3) Philosophical consideration of the nature of ethics, basic ethical issues, and problems and modes of ethical reasoning. Includes Honors sections.

***PHIL 1240 Technology and Its Discontents 3(3)** Philosophical introduction to issues arising from the development of technologies, their implementation, and their integration into society. Considers theoretical questions regarding the nature of technology and its evaluation, as well as issues related to specific technologies.

***PHIL 2100 Evolution and Creation 3(3)** A critical comparison of evolution and creationism. Students examine the scientific, philosophical, and theological issues this clash brings to light, develop their ability to think through the various claims and counter claims critically, and then articulate a coherent position for themselves. Credit toward a degree will be given for only one of PHIL 2100 or BIOL 2100.

PHIL (CHIN) 3120 Philosophy in Ancient China 3(3) Study of the history of

Chinese philosophy from fifth century BCE, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

PHIL (CHIN) 3130 Philosophy in Modern China 3(3) Study of the history of Chinese philosophy from the 19th century to the present, including Confucianism, Daoism, Moism, legalism, Buddhism, Neo-Daoism, and Neo-Confucianism. Examination of Chinese philosophers' views and arguments on questions of life and death, history and society, education and personal cultivation. May not be used to satisfy general foreign language requirements.

PHIL 3160 Modern Philosophy 3(3) Development of the modern view as seen in major Western philosophers of the 16th, 17th, and 18th centuries. Thought of Berkeley, Descartes, Hume, Leibniz, Locke, and Spinoza may be considered to illustrate the development of rationalism and empiricism.

PHIL 3170 Nineteenth-Century Philosophy 3(3) Development of 19th-century philosophy emphasizing selected works of philosophers such as Kant, Hegel, Marx, Nietzsche, and Kierkegaard.

PHIL 3180 Twentieth-Century Philosophy 3(3) Historical overview of selected significant movements in 20th-century Western philosophy such as Continental and/or analytic philosophy.

PHIL 3230 Theory of Knowledge 3(3) Examination of concepts, criteria, and decision procedures underlying rational belief and the justification of knowledge claims. Representative answers to the problem of skepticism are considered, with special attention to some leading theories of knowledge.

***PHIL 3240 Philosophy of Technology 3(3)** Examines technology and representative philosophical assessments of it with a focus on understanding its impact on the human condition.

PHIL 3250 Philosophy of Science 3(3) Philosophical study of problems generated by science, but that are not themselves scientific, such as what comprises a scientific theory; how scientists formulate theories and acquire knowledge; what, if anything, differentiates science from other ways of knowing; what role concepts play in scientific knowledge; whether scientific progress is rational.

***PHIL 3260 Science and Values 3(3)** Examination of several features of the relation between science and values. Topics may include ethical and social obligations of scientists, role of value judgments in scientific practice, and influence of social and political values on science and scientists.

PHIL 3270 Philosophy of Social Science 3(3) Inquiry into the philosophical foundations of social science, in particular questions of objectivity, explanatory structure, causality, agency, normativism and naturalism, and social determination of knowledge.

PHIL 3440 Business Ethics 3(3) Study of ethical issues created by business activities, relating them to fundamental questions of ethics generally. Representative topics may include hiring, firing, promotions, business and minorities, organizational influence in private lives, consumer interests, economic justice, and reindustrialization.

***PHIL 3450 Environmental Ethics 3(3)** Study of ethical problems in our dealings with the rest of nature and of how they relate to ethics in general. Representative topics include the basis of ethics, nature and intrinsic value, duties to future generations, economics and the environment, rare species, animal rights, ethics and agriculture, energy doctrine.

****REL 1010 Introduction to Religion 3(3)** Study of the variety of religious experience and expression in human life.

****REL 1020 World Religions 3(3)** Survey of major religious traditions of the world. Includes Honors sections.

REL 3010 The Old Testament 3(3) Survey of the books of the Old Testament with special consideration given to the development of the concepts, institutions, and theology of the ancient Hebrews.

REL 3020 Survey of New Testament Literature 3(3) Study of the books of the New Testament from the standpoint of their occasion, content, literary form, and basic theology.

REL 3030 The Quran 3(3) Survey of Islamic Scripture, its origins, content, and interpretation, with attention to the development of Hadith and Sunna as well.

REL 3060 Judaism 3(3) Examines the development of Judaism from biblical to modern times.

REL 3070 The Christian Tradition 3(3) Examination of the development of Christianity in Western civilization from the post-New Testament period to the present, stressing institutional growth and changes, theological currents, and interaction of Christianity with culture.

REL 3120 Hinduism 3(3) A study of the history, practices, ideas, and social institutions associated with the variety of Indian religious traditions commonly called "Hinduism" from their origins to the present.

REL 3130 Buddhism 3(3) A study of the history, practices, ideas, and social institutions associated with the variety of Buddhist traditions found throughout the world. Discussion topics focus on the development of classical Buddhism in India and its expansion into Tibet, and includes a treatment of the distinctive developments in China and Japan.

REL 3150 Islam 3(3) A study of the origins, development, and history of the religion of Islam and Islamic cultures from the time of the Prophet to the present.

RUSS 3400 Russian Culture of the Nineteenth Century 3(3) Study of achievements in art, science, music, and literature in Russia during the 19th century. Taught in English.

SPAN 3070 The Hispanic World: Spain 3(3) Introduction to the significant aspects of the culture of Spain from its origins to the present. Emphasizes the artistic, social, historical, political, and contemporary issues of the Iberian Peninsula. *Preq:* SPAN 2020.

SPAN 3080 The Hispanic World: Latin America 3(3) Introduction to the significant aspects of the culture of Spanish-American countries. Emphasis is placed on the development of the political, economical, geographical, social, and artistic aspects of Spanish America from the indigenous period to the present. *Preq:* SPAN 2020.

***STS 1010 Survey of Science and Technology in Society 3(3)** Surveys historical, philosophical, and social studies of science; introduces the basic requisites for scientific and technological literacy; and considers the problems of responsible participation in a scientifically and technologically advanced society.

***STS 1020 Ideas, Machinery, and Society 3(3)** Interdisciplinary discussion course introducing the fundamental themes of STS: the influence of social groups on the development of science and technology and the effects of science and technology on society.

***STS 2150 A Critical Approach to the Global Challenge of Technological Revolutions 3(3)** This course takes a broad, humanistic perspective for understanding the challenges posed by scientific and technological revolutions, including innovations like nanotechnology, environmental preservation, biotechnology, digital technology, and nuclear fusion. Students learn skills and strategies for thinking critically about the nature of radical change in science and technology as it affects society.

***STS 3010 Science in Context 3(3)** Develops an understanding of the social character of scientific activity. Through the study of current work by leading historians, sociologists, and philosophers of science, students develop a comprehensive grasp of the social foundations of modern scientific inquiry.

Note: Included for 2012-2013, 2013-2014, and 2014-2015 curricula, but not for 2011-2012 curriculum.

***STS 3030 Technology, Culture and Society 3(3)** Addresses issues that arise from the interaction of technology with its social and cultural context. To better understand how technologies relate to societies and cultures, students learn to use the analytic tools required to evaluate the significance of technology, as well as its relations to social endeavors and cultural endeavors.

THEA 2100 Theatre Appreciation 3(3) Examination of the theatre event approached through historical context, play reading, analysis of production practices, and field trips to live dramatic performances. Includes Honors sections.

THEA 2790 Theatre Practicum 1(0,3) Practical work in theatre on a production designed for public presentation. May be repeated for a maximum of four credits.

THEA 3080 Survey of Broadway Musicals I 3(3) Introduction to Broadway musical repertoire from the Golden Age of Broadway: 1943–1964. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as MUSC 3080.

THEA 3090 Survey of Broadway Musicals II 3(3).
Survey of Broadway musical repertoire from new conceptual shows from 1965 to the present day. Emphasizes the music with attention to production detail, historical perspective, and social milieu. May also be offered as MUSC 3090.

THEA 3150 Theatre History I 3(3) Historical survey of Western theatre. Emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from antiquity to the Renaissance. *Preq:* Sophomore standing.

THEA 3160 Theatre History II 3(3) Historical survey of Western theatre. Emphasis is placed on the changing roles of the playwright, director, actor, technician, and spectator from the Renaissance to the present. *Preq:* Sophomore standing.

THEA 3170 African-American Theatre I 3(3) Acquaints students with the origin and development of African-American playwrights, plays, players, and their contributions to the American theatre from the 19th century to the Civil Rights Movement.

WS 3010 Introduction to Women's Studies: Women's Lives 3(3) Interdisciplinary course exploring the unique features of women's lives from childhood to old age. Content is based on new research in many disciplines, including psychology, sociology, history, literature, and the arts. *Preq:* Sophomore standing

LIST S – Social Science Elective (2014-15)

(The following list was compiled from the General Education Sections of the 2011-1012 University Announcements, the 2012-2013 University Announcements, the 2013-2014 University Announcements, and the 2014-2015 University Announcements. This list is same for all of the curriculum years mentioned above.)

Credits Required: 6

Restrictions:

- Courses must be selected from two different fields (departments).

Note: Courses on the Social Science list below which also satisfy the Science and Technology in Society (STS) requirement or the Cross-Cultural Awareness (CCA) requirement are marked with * or **, respectively. (If courses selected to satisfy the Non-Literature requirement or the Social Science requirement do not also satisfy the CCA requirement and the STS requirement, then additional courses must be selected from the CCA and/or STS course lists shown on p. 38 of the 2014-2015 University Announcements.)

****ANTH 2010 Introduction to Anthropology 3(3)** Offers a four-field overview: primates and human biological origins; the development of agriculture and complex societies in the archaeological record; contemporary human societies cross-culturally; and the relationship between languages and cultures. An anthropological perspective on contemporary human problems is also presented.

APEC 2020 Agricultural Economics 3(3) Analytical survey of the various subdivisions of agricultural economics, including farm organization, enterprise, land economics, marketing, farm prices, governmental farm policies, and the relation of agriculture to the national and international economy.

APEC 2570 Natural Resources, Environment, and Economics 3(3) Economic principles applied to resource allocation problems related to environmental and natural resource issues.

ECON 2000 Economic Concepts 3(3) One-semester survey of basic economic concepts that offers an overview of both microeconomics and macroeconomics. Not intended for business majors or other students seeking a comprehensive introduction to economic analysis and its applications. Credit will not be given to students who have received credit for ECON 2110 or 2120.

ECON 2110 Principles of Microeconomics 3(3) Introduction to economic reasoning and its application to the study of the behavior of consumers and business firms. Particular topics include competition, monopoly, international trade, and the impact of selected public policies. Intended as the first of a two-semester sequence in the foundations of economics. Includes Honors sections.

ECON 2120 Principles of Macroeconomics 3(3) Continuation of ECON 2110 in which fundamental economic principles are applied to the study of aggregate economic performance. Topics include the forces determining the rates of inflation, unemployment, and economic growth, with particular emphasis on the influence of fiscal and monetary policies through financial markets. Includes Honors sections.
Preq: ECON 2110.

GEOG 1010 Introduction to Geography 3(3) Survey of the nature of geography emphasizing the discipline's organizing themes of earth science, relations between people and their environments, interrelations between places, locational analysis, and area studies.

****GEOG 1030 World Regional Geography 3(3)** Systematic and descriptive survey of the major regions of the world, including their physical and cultural features. Provides a global context for courses in the social sciences and humanities.

GEOG 1060 Geography of the Physical Environment 4(3,3) Examines the condition of the physical environment, especially the earth's surface and the processes that act on it. Topics range from earth-sun relations to the evolution of landscapes; human habitats and human alteration of the environment. *Coreq:* GEOG 1061.

HIST 1010 History of the United States 3(3) Political, economic, and social development of the American people from the period of discovery to the end of Reconstruction. Includes Honors sections.

HIST 1020 History of the United States 3(3) Political, economic, and social development of the American people from the end of Reconstruction to the present. Includes Honors sections.

***HIST 1220 History, Technology, and Society 3(3)** Topics in the history of technology with emphasis on how technology affects society and how society shapes technology. Emphasis is on 19th and 20th century America, but some material from other periods of Western Civilization and other world regions may be discussed. Includes Honors sections.

***HIST 1240 Environmental History Survey 3(3)** Introduction to environmental history, in the United States and globally, with emphasis on changing attitudes toward the environment and the interaction between science and public policy. Includes

Honors sections.

****HIST 1720 The West and the World I 3(3)** Examines the history of the West from early times until 1628. After a comparative evaluation of the emergence of civilization around the globe, course concentrates on the history of the peoples of Europe up to the age of European exploration and overseas expansion. Includes Honors sections.

****HIST 1730 The West and the World II 3(3)** Surveys the history of the West in modern times, from the late 17th century to the present. Particular emphasis is placed on Europe's interaction with non-western societies. Through cross-cultural comparisons, European history is placed in global context. Includes Honors sections.

****HIST 1930 Modern World History 3(3)** Political, economic, social, and cultural history of the modern world from the 19th century to the present.

HON 1920 Freshman Colloquium: Social Science 3(3) Intellectually intensive seminar that engages freshman honors students in dialogue about the "idea of the University." Explores foundations and consequences of human thought and behavior at the individual and societal levels, with emphasis on concepts and tools that organize scholarly inquiry across the social and behavioral sciences. Topics vary. *Preq:* Membership in Calhoun Honors College.

HON 2020 Science, Culture, and Human Values 3(3) Interdisciplinary honors seminar that unifies natural scientific, social scientific, and humanistic disciplines into a holistic view of the modern world and its future. May be repeated for a maximum of six credits, but only if different topics are covered. *Preq:* Membership in Calhoun Honors College.

HON 2200 Studies in Social Science 3(3) Discipline specific social science seminar including a disciplinary introduction (anthropology, economics, history, political science, psychology or sociology) and a detailed examination of specific theories and methods within that discipline. May be repeated for a maximum of six credits, but only if different disciplines are covered. *Preq:* Membership in Calhoun Honors College.

****PAS 3010 Introduction to Pan African Studies 3(3)** Study of African American experience from an Afrocentric perspective from colonial America to the present.

POSC 1010 American National Government 3(3) Introduction to American national government and politics examining topics such as the Constitution, federalism, political institutions, political behavior, and political participation.

****POSC 1020 Introduction to International Relations 3(3)** Overview of both theory and practice in contemporary global politics. Topics include the structure of and primary actors in the international system; reasons conflict occurs; and roles of

international institutions, law, and policy. Includes Honors sections.

POSC 1030 Introduction to Political Theory 3(3) Introduction to major themes and thinkers in the Western tradition of political thought. Students examine classic primary texts of the ancient and modern periods, including Plato, Aristotle, Hobbes and Locke, to acquire a working conceptual vocabulary of normative and theoretical terms, political ideologies, and basic patterns of political organization. Includes Honors sections.

****POSC 1040 Introduction to Comparative Politics 3(3)** Introduction to the study of comparative politics in the post-Cold War era, with emphasis on theories and applications. Topics include democratic and nondemocratic systems; ideology; political culture; party systems; and legislative, executive, and judicial structures. Includes Honors sections.

PSYC 2010 Introduction to Psychology 3(3) Introduction to the study of behavior. Analysis of the biological bases of behavior, learning, thinking, motivation, perception, human development, social behavior, and the application of basic principles to more complex phenomena such as education, personal adjustment, and interpersonal relations. Includes Honors sections.

****PSYC 2500 Pursuing Happiness 3(3)** Introduces psychological theories and principles used to study human behavior (methods, cognition, motivation, etc.). The concept of happiness is investigated as a psychological construct across cultures. Offered summer session only.

***PSYC 2750 Applied Psychology and Transportation 3(3)** Introduces psychological principles used to study human behavior (methodological, cognitive, perceptual, etc.). These psychological principles, in addition to ethical, legal, and societal perspectives, are applied to transportation issues.

RS 3010 Rural Sociology 3(3) Study of human social relationships as influenced by life in the open country and in small towns and villages, including considerations of the rural population, rural social institutions, processes of change in agricultural technology, and community area planning and development. Offered spring semester only.

SOC 2010 Introduction to Sociology 3(3) Sociological perspective: the study of contemporary groups, organizations, and societies in terms of human social behavior, social change, social structure, and social institutions. Includes Honors sections.

SOC 2020 Social Problems 3(3) Social problems involving the family, education, health care, political and legal systems, economy, population, environment, community; and special problems associated with age, economics, racial status, and gender inequality.

Appendix 1

List T – Technical Electives (Electrical Engineering) (for 2008-15)

Credits required: 9 credits

Restrictions:

1. Two courses must be selected from the same Subject Area to satisfy the Depth Requirement.
2. A maximum of 3 credits from the “Other” category can be used to satisfy the Technical Elective requirements.

Courses are listed by Subject Area; some courses are included in more than one Subject Area.

Combined BS/MS Program. The 6xxx version of the courses listed below as *ECE 4xxx have been approved for the combined BS/MS Electrical Engineering program. Additional courses approved for the combined program are also listed below as ECE *8xx. Students who qualify for the combined program can use up to 9 credits of approved courses to jointly satisfy undergraduate technical elective requirements and graduate curriculum requirements of one or more graduate EE focus areas. (See Appendix D of the ECE Graduate Student Handbook to see the list of courses approved for each graduate focus area.)

http://www.clemson.edu/ces/departments/ece/resources/grad_resources/grad_handbook.html

Applied Electromagnetics (AEM)

*** ECE 4350 Grounding and Shielding 3(3) (Spring)**

Catalog Description

Introduction to electromagnetic compatibility concepts and techniques for students who will be designing or working with electronic systems when they graduate. Topics include electromagnetic interference and noise control, crosstalk and signal integrity grounding, filtering, shielding, circuit board layout, lighting and electrostatic discharge protection.

Prerequisite

ECE 3810 – Fields, Waves, and Circuits

*** ECE 4360 Microwave Circuits 3(3) (Fall)**

Catalog Description

Analysis of microwave networks comprising transmission lines, waveguides, passive elements, interconnects, and active solid-state microwave circuits. Use of modern CAD tools to design RF/Microwave passive/active networks. Fabrication

of typical circuits.

Prerequisite

ECE 3810 – Fields, Waves, and Circuits

Prerequisite or Concurrent Enrollment

MATH 3110 – Linear Algebra or MATH 4340 – Advanced Engineering Mathematics

*** ECE 4390 Fiber Optics 3(3) (Check with Department)**

Catalog Description

Covers the underlying principles of design for optical fibers in practical systems. Examines optical fiber as a wave-guide using wave optics and ray optics. Discusses design criteria for using mono-and multi-mode fibers. Other topics include fabrication, measurement.

Prerequisite

ECE 3810 – Fields, Waves, and Circuits

Prerequisite or Concurrent Enrollment

MATH 4340 – Advanced Engineering Mathematics

*** ECE 4460 Antennas and Propagation 3(3) (Spring)**

Catalog Description

Study of the theoretical and practical aspects of antenna design and utilization, input impedances, structural considerations, and wave propagation.

Prerequisites

ECE 3300 – Systems, Signals, and Transforms and ECE 3810 – Fields, Waves, and Circuits or EE 4360 – Microwave Circuits; and one of MATH 3110 – Linear Algebra or MATH 4340 – Advanced Engineering Mathematics.

*** ECE 8270 Finite Difference Methods in Electromagnetics 3(3)**

Catalog Description

Investigates finite-difference methods (FD) as applied to electromagnetics; FD approximations, error, stability and numerical dispersion; solution of Poisson's, Helmholtz and wave equations; banded matrices, iterative methods and eigensolutions; the finite-difference time-domain method, Yee Lattice, mesh truncation methods, perfectly matched layers, source conditions, near- to-far field transformation, subcellular modeling for fine features and wide-band characterization.

Prerequisites

ECE 4360 – Microwave Circuits or 4460 – Antennas and Propagation or equivalent.

Prerequisite or Concurrent Enrollment

ECE 8300.

*** ECE 8290 Special Functions in Engineering 3(3)**

Catalog Description

Complex calculus and analytic functions; origin of special functions in engineering; series and integral representations of special functions; properties

and applications of gamma, Bessel, Legendre, Chebyshev, etc. functions; computation of special functions; applications in selected engineering problems.

Prerequisite Courses

ECE 3810 – Fields, Waves and Circuits and MATH 4340 – Advanced Engineering Mathematics.

*** ECE 8300 Electromagnetics 3(3)**

Catalog Description

Wave equations and waves, electromagnetic potentials, theorems and advanced concepts, guided waves, radiation, boundary value problems and simple Green's functions.

Prerequisite or Concurrent Enrollment

ECE 8290 – Special Functions in Engineering

Computer Systems and Architecture (CSA)

ECE 2200 Systems Programming Concepts for Computer Engineering 3(3)

Catalog Description

Development of computer systems programming and code reading techniques. Tools, programming languages, libraries, operating systems, and software. Code reading is emphasized. Programming projects reinforce course topics.

Prerequisite

CP SC 1110 – Elementary Computer Programming in C/C++

ECE 4170 Elements of Software Engineering 3(3) (Spring)

Catalog Description

Foundations of software design, reasoning about software, the calculus of programs, survey of formal specification techniques and design languages.

Prerequisites

ECE 3220/3290 – Computer System Structures and ECE 3520 – Programming Systems MATH 4190 – Discrete Mathematics

ECE 4290 Organization of Computers 3(3) (Fall)

Catalog Description

Computer organization and architecture. Topics include a review of logic circuits, bus structures, memory organization, interrupt structures, arithmetic units, input-output structures, state generation, central processor organization, control function implementation, and data communication. Registered Transfer Language (RTL) for description and design of digital systems.

Prerequisite

ECE 2720 – Computer Organization

*** ECE 4420 Knowledge Engineering 3(3) (Fall)**

Catalog Description

Introduction to the theoretical and practical aspects of knowledge engineering or applied artificial intelligence. Topics include symbolic representation structures and manipulation, unification, production systems and structures, rule-based and expert systems, planning and AI system architectures; system design in PROLOG and LISP. Project is required.

Prerequisites

ECE 3220 – Computer Systems Structures and ECE 3520 – Programming Systems

*** ECE 4680 Embedded Computing 3(3) (Spring)****Catalog Description**

Principles of using computing in the larger context of a system. Topics include bus and processor design types (e.g., microprocessor, microcontroller, DSP), codecs, digital circuit power management, real time scheduling, and embedded operating systems. Lab work consists of projects on embedded hardware (e.g. PC-104+).

Prerequisites

ECE 2230 – Computer Systems Engineering and ECE 3710 – Microcontroller Interfacing.

Corequisite

ECE 4681 – Embedded Computing Laboratory

ECE 4730 Introduction to Parallel Systems 3(3) (varies: Spring or Fall)**Catalog Description**

Introduces parallel algorithms and their programming. Includes an introduction to MPE and OPENMP and a number of engineering problems, including numerical simulations. Introduces scalability analysis.

Prerequisites

ECE 3220 – Introduction to Operating Systems

Communications Systems and Networks (CSN)*** ECE 4300 Digital Communications 3(3) (varies: Spring or Fall)****Catalog Description**

Introduction to modern digital communication systems, emphasizing modulation and detection, taking into account the effects of noise. Includes Honors sections.

Prerequisites

ECE 3170 –Random Signal Analysis and ECE 3300 – Signals, Systems, and Transforms and consent of instructor. Consent is not required for Honors students.

*** ECE 4380 Computer Communications 3(3) (Spring)****Catalog Description**

Digital data transmission techniques, modems and communications channels, communications software and protocols, multiprocessors and distributed

processing; concurrency and cooperation of dispersed processors.

Prerequisite

Senior standing in Electrical or Computer Engineering or Computer Science.

*** ECE 4400 Performance Analysis of Local Computer Networks 3(3) (Fall)**

Catalog Description

Introduction to the design and performance analysis of local computer networks. Emphasizes performance analysis of representative multi-access procedures. Three common types of networks are considered in detail.

Prerequisites

ECE 2720 – Computer Organization and ECE 3170 – Random Signal Analysis

*** ECE 8180 Random Process Applications in Engineering 3(3)**

Catalog Description

Theory of random processes emphasizing engineering applications; stochastic convergence and limit theorems; martingales; mean-square calculus; Karhunen-Loeve expansions; systems with stochastic inputs; Poisson processes; shot noise; Weiner processes; white noise processes; Markov systems; queuing systems; and estimate theory.

Prerequisites

ECE 3170 – Random Signal Analysis and ECE 3300 – Signals, Systems, and Transforms.

*** ECE 8210 Digital Communication Systems II 3(3)**

Catalog Description

Continuation of both ECE 6300 – Digital Communications and ECE 8200 – Digital Communication Systems I.

*** ECE 8480 Telecommunication Network Modeling and Analysis 3(3)**

Catalog Description

Protocols, modeling and analysis of telecommunication networks with emphasis on quantitative performance modeling of networks and systems using packet switching and circuit switching techniques.

Prerequisite

ECE 4380 – Computer Communications or CPSC 8250

*** ECE 8570 Coding Theory 3(3)**

Catalog Description

Principles of algebraic coding and its application to transmission of information over noisy communications channels; introduction to abstract algebra; code performance bounds; code representations; linear codes of the Hamming and Bose-Chandhuri types and burst- error correcting codes; problems of implementation and decoding.

Prerequisite

ECE 3170 – Random Signal Analysis.

Digital Signal Processing (DSP)

*** ECE 4420 Knowledge Engineering 3(3) (Fall)**

Catalog Description

Introduction to the theoretical and practical aspects of knowledge engineering or applied artificial intelligence. Topics include symbolic representation structures and manipulation, unification, production systems and structures, rule-based and expert systems, planning and AI system architectures; system design in PROLOG and LISP. Project is required.

Prerequisites

ECE 3220 – Computer Systems Structures and ECE 3520 – Programming Systems

*** ECE 6670 Introduction to Digital Signal Processing 3(3) (Fall and Summer)**

Catalog Description

Introduction to characteristics, design, and applications of discrete time systems; design of digital filters; introduction to the Fast Fourier Transform (FFT); hardware for signal processing applications.

Prerequisite

ECE 3300 - Signals, Systems, and Transforms

*** ECE 8180 Random Process Applications in Engineering 3(3)**

Catalog Description

Theory of random processes emphasizing engineering applications; stochastic convergence and limit theorems; martingales; mean-square calculus; Karhunen-Loeve expansions; systems with stochastic inputs; Poisson processes; shot noise; Weiner processes; white noise processes; Markov systems; queuing systems; and estimate theory.

Prerequisites

ECE 3170 – Random Signal Analysis and ECE 3300 - Signals, Systems, and Transforms

*** ECE 8190 Detection and Estimation Theory 3(3)**

Catalog Description

Theory of statistical testing of hypotheses applied to detection and estimation of communication signal parameters; detection of signals with random amplitude, phase and arrival time in noise; detection of single and multiple observation; estimates and their properties; signal resolution.

Prerequisite

ECE 6300 – Digital Communications or ECE 8180 – Random Process Applications in Engineering or 8200 - Digital Communication Systems I

*** ECE 8440 Digital Signal Processing 3(3)**

Catalog Description

Digital filter design; discrete Hilbert transforms; discrete random signals; effects of finite register length in digital signal processing; homomorphic signal

processing; power spectrum estimation; speech processing, radar and other applications.

Prerequisite

ECE 4670 – Introduction to Digital Signal Processing

*** ECE 8460 Digital Processing of Speech Signals 3(3)**

Catalog Description

Application of digital signal processing techniques to problems related to speech synthesis, recognition and communication; digital models and representations of speech wave forms; Fourier analysis; homomorphic processing; linear predictive coding; algorithms for recognizing isolated words and continuous speech; man-machine communications by voice.

Prerequisite

ECE 4670– Introduction to Digital Signal Processing

*** ECE 8470 Digital Image Processing 3(3)**

Catalog Description

Review of fundamental concepts, issues and algorithms in image processing. Includes image formation, file formats, filters, edge detection, stereo, motion and color.

Prerequisite

ECE 4670 – Introduction to Digital Signal Processing

*** ECE 8560 Pattern Recognition 3(3)**

Catalog Description

Several approaches to general pattern recognition problems with practical computer-oriented applications; feature extraction; classification algorithms; discriminant functions; learning schemes; statistical methods; information theoretic approaches; applications; current developments.

*** ECE 8720 Artificial Neural Networks 3(3)**

Catalog Description

Design, analysis and application of artificial neural networks, neuron models, network architectures, training (supervised and unsupervised) and hardware implementation; extended studies of selected applications and simulation exercises.

Prerequisite

MATH 3110 – Linear Algebra

*** ECE 8770 Computer Vision 3(3)**

Catalog Description

Investigation into fundamental concepts, issues and algorithms in computer vision. Includes segmentation, texture, detection, 3-D reconstruction, camera calibration, shape and energy minimization.

Prerequisite

ECE 8470 - Digital Image Processing

Electronics (ELE)

*** ECE 4040 Semiconductor Devices 3(3) (Fall)**

Catalog Description

Consideration of the principles of operation, external characteristics, and applications of some of the more important semiconductor devices presently available.

Prerequisite

ECE 3200 – Electronics I

Prerequisite or Concurrent Enrollment

MATH 3110 - Linear Algebra or MATH 4340 – Advanced Engineering Mathematics

*** ECE 4060 Introduction to Microelectronics Processing 3(3) (Fall)**

Catalog Description

Microelectronic processing, MOS and bipolar monolithic circuit fabrication, thick and thin film hybrid fabrication, applications to linear and digital circuits, fundamentals of device design.

Prerequisite

ECE 3200 – Electronics I

Prerequisite or Concurrent Enrollment

MATH 3110 – Linear Algebra or MATH 4340 – Advanced Engineering Mathematics

*** ECE 4220 Electronic System Design I 3(3) (Check with Department)**

Catalog Description

Emphasizes the application of theory and skills to the design, building, and testing of an electronic system with both analog and digital components. Application varies each semester. Computer software tools are used extensively in the design process.

Prerequisites

ECE 3210 – Electronics II and ECE 3300 – Signals, Systems, and Transforms and 3600 – Electric Power Engineering and ECE 3710 – Microcontroller Interfacing and ECE 3810 – Fields, Waves, and Circuits.

*** ECE 4320 Instrumentation 3(3) (Spring)**

Catalog Description

Theory and analysis of transducers and related circuits and instrumentation. Generalized configurations and performance characteristics of instruments are considered. Transducer devices for measuring physical parameters such as motion, force, torque, pressure, flow, and temperature are discussed.

Prerequisite

ECE 3210 – Electronics II

Prerequisite or Concurrent Enrollment

MATH 3110 – Linear Algebra or MATH 4340 – Advanced Engineering Mathematics

*** ECE 4590 Integrated Circuit Design 3(2) (Check with Department)**

Catalog Description

Design concepts and factors influencing the choice of technology; fundamental MOS device design; silicon foundries, custom and semicustom integrated circuits; computer-aided design software/hardware trends and future developments; hands-on use of CAD tools to design standard library cells; systems design considerations, testing, and packaging.

Prerequisite

ECE 3210 – Electronics II

Prerequisite or Concurrent Enrollment

MATH 3110 – Linear Algebra or MATH 4340 – Advanced Engineering Mathematics

Corequisite

ECE 4591 = Integrated Circuit Design Laboratory

*** ECE 8110 Integrated Circuit Design 3(2)**

Catalog Description

Design concepts and factors influencing the choice of technology; fundamental MOS device design; silicon foundries; custom and semicustom integrated circuits; computer-aided design software/hardware trends and future developments; the hands-on use of CAD tools to design MOS standard cells; systems design, testing and packaging.

Prerequisite

ECE 4590 – Integrated Circuits Design

Corequisite

ECE 8111 = Integrated Circuit Design Laboratory

*** ECE 8230 Integrated Circuit Technology 3(3)**

Catalog Description

Physical and chemical principles underlying the major processing operations used in the fabrication of integrated circuit semiconductor devices, process simulation, diagnostic testing and factors affecting device yield and reliability.

Prerequisite

Consent of instructor.

*** ECE 8400 Physics of Semiconductor Devices 3(3)**

Catalog Description

Semiconductor device physics emphasized rather than circuits; detailed analysis of the p-n junction, traps, surface states and conduction processes, and devices; analysis and models of Schottky diode, MIS diode, MOSFET, charge couples devices and solar cells; charge control concepts, transit time effects, surface-type devices and practical aspects of device process.

Prerequisites

ECE 4040 – Semiconductor Devices and ECE 4060 – Introduction to Microelectronics Processing.

Intelligent Systems (CRB)*** ECE 4420 Knowledge Engineering 3(3) (Fall)****Catalog Description**

Introduction to the theoretical and practical aspects of knowledge engineering or applied artificial intelligence. Topics include symbolic representation structures and manipulation, unification, production systems and structures, rule-based and expert systems, planning and AI system architectures; system design in PROLOG and LISP. Project is required.

Prerequisite

ECE 3220 – Computer Systems Structures and ECE 3520 – Programming Systems

*** ECE 4550 Robot Manipulators 3(3) (Summer)****Catalog Description**

Analysis of robot manipulator systems with special focus on interaction of these technologies with society. Emphasis is on rigid-link robot manipulator systems. Topics include history of robot technology, kinematics, dynamics, control, and operator interfaces. Case studies reinforce impact of robot technology on society and vice versa.

Prerequisites

MATH 2060 – Calculus of Several Variables and MATH 3110 – Linear Algebra.

ECE 4570 Fundamentals of Wind Power 3(3) (summer)**Catalog Description**

Introduction to wind turbine systems including wind energy potential and application to power generation. Topics include wind energy principles, wind site assessment, wind turbine components, power generation machinery, control systems, connection to the electric grid, and maintenance.

Prerequisite

ECE 2070 – Basic Electrical Engineering or ECE 3200 – Electronics I

*** ECE 4670 Introduction to Digital Signal Processing 3(3) (Fall and summer)****Catalog Description**

Introduction to characteristics, design, and applications of discrete time systems; design of digital filters; introduction to the Fast Fourier Transform; hardware for signal processing applications.

Prerequisite

ECE 3300- Signals, Systems, and Transforms

*** ECE 4680 Embedded Computing 3(3) (Spring)**

Catalog Description

Principles of using computing in the larger context of a system. Topics include bus and processor design types (e.g., microprocessor, microcontroller, DSP), codecs, digital circuit power management, real time scheduling, and embedded operating systems. Lab work consists of projects on embedded hardware (e.g. PC-104+).

Prerequisites

ECE 2230 – Computer Systems Engineering and ECE 3710 – Microcontroller Interfacing.

Corequisite

ECE 4681 – Embedded Computing Laboratory

*** ECE 8010 Analysis of Linear Systems 3(3)**

Catalog Description

Foundations of linear system analysis; matrix algebra, linear graph theory and operational mathematics applied to formulation and solution of system equations in time and frequency domains.

*** ECE 8470 Digital Image Processing 3(3)**

Catalog Description

Review of fundamental concepts, issues and algorithms in image processing. Includes image formation, file formats, filters, edge detection, stereo, motion and color.

Prerequisite

ECE 4670 – Introduction to Digital Signal Processing

*** ECE 8540 Analysis of Tracking Systems 3(3)**

Catalog Description

Methods of designing and operating robotics systems for advanced automation; on-line identification and description of 3-D objects by digitized images; off-line collision-free path planning and on-line collision avoidance traveling using artificial intelligence.

Prerequisite

ECE 8010 – Analysis of Linear Systems

*** ECE 8550 Artificial Intelligence 3(3)**

Catalog Description

Emulating intelligent behavior by computer; models of cognitive processes; logical foundations; constraint satisfaction problems; natural language understanding; pattern-directed inference and chaining paradigms; goal-directed behavior, planning and search; learning; advanced database structure and inference strategies; examples of LISP, PROLOG, and OPS5.

Prerequisite

ECE 4420 – Knowledge Engineering

*** ECE 8560 Pattern Recognition 3(3)**

Catalog Description

Several approaches to general pattern recognition problems with practical computer-oriented applications; feature extraction; classification algorithms; discriminant functions; learning schemes; statistical methods; information theoretic approaches; applications; current developments.

*** ECE (ME) 8590 Intelligent Robotic Systems 3(3)**

Catalog Description

Integration and fusion of data from multiple sensors on multiple robots; intelligent decision making on motion planning and execution based on sensed data involving mutual compliance; simultaneous force and position controls using computers.

Prerequisite

ECE 8540 – Analysis of Tracking Systems

*** ECE 8690 Advanced Kinematics in Robotics 3(3)**

Catalog Description

Complex robotic systems, such as multi-fingered robot hands, dual-armed robots and multi-joint “snakelike” robots; kinematic redundancy, load distribution and dexterous manipulation; effective modeling and solution techniques for these types of under constrained systems.

Prerequisites

ECE 4090 – Continuous and Discrete Systems Design and ECE 4550 – Robot Manipulators

*** ECE 8720 Artificial Neural Networks 3(3)**

Catalog Description

Design, analysis and application of artificial neural networks, neuron models, network architectures, training (supervised and unsupervised) and hardware implementation; extended studies of selected applications and simulation exercises.

Prerequisites

MATH 3110 – Linear Algebra

*** ECE 8740 Advanced Nonlinear Control 3(3)**

Catalog Description

Basics of nonlinear control based on Lyapunov techniques; adaptive control design, robust control design and observer design; understanding and development of Lyapunov control design tools.

Prerequisite

ECE 8010 - Analysis of Linear Systems

*** ECE 8770 Computer Vision 3(3)**

Catalog Description

Investigation into fundamental concepts, issues and algorithms in computer vision. Includes segmentation, texture, detection, 3-D reconstruction, camera calibration, shape and energy minimization.

Prerequisite

ECE 8470 – Digital Image Processing

Power (POW)

*** ECE 4180 Power System Analysis 3(3) (Fall)**

Catalog Description

Study of power system planning and operational problems. Topics include load flow, economic dispatch, fault studies, transient stability, and control of problems. System modeling and computer solutions are emphasized through class projects.

Prerequisites

ECE 3600 – Electric Power Engineering and ECE 3800 – Electromagnetics

*** ECE 4190 3(3) Electric Machines and Drives (Spring)**

Catalog Description

Performance, characteristics, and modeling of AC and DC machines during steady-state and transient conditions. Introduction to power electronic devices and their use in adjustable speed motor drives.

Prerequisites

ECE 3210- Electronics II and ECE 3600 – Electric Power Engineering and ECE 3800 – Electromagnetics

Prerequisites or Concurrent Enrollment

MATH 4340– Advanced Engineering Mathematics.

*** ECE 8020 Electric Motor Control 3(3)**

Catalog Description

Dynamic modeling and analysis of electrical machines for design of AC and DC drive systems; implementation of such models on a digital computer; voltage-fed inverters; pulse width modulation and analysis techniques for inverters; harmonic generation and reduction.

Prerequisite

MATH 4340– Advanced Engineering Mathematics

*** ECE 8070 Computer Methods for Power Systems Analysis 3(3)**

Catalog Description

Electric power system operation; development of models of transmission line components and networks; computer methods for solving linear and nonlinear systems of network equations; operating problems in load flow, scheduling and economic dispatch.

Prerequisite

ECE 4180 - Power System Analysis

*** ECE 8160 Electric Power Distribution System Engineering 3(3)**

Catalog Description

Radial circuit analysis techniques, feeder and transformer modeling, load modeling, loss minimalization and voltage control, causes of power quality problems, motor starting analysis, strategies for analyzing impacts of disturbances.

Prerequisite

ECE 4180 - Power System Analysis

*** ECE 8170 Power System Transients 3(3)**

Catalog Description

Electrical transients in power systems; frequency domain and time domain techniques for power systems transient analysis; capacitor switching, load switching, fault-induced transients, line reclosing and single pole switching.

Prerequisite

ECE 4180 - Power System Analysis

*** ECE 8240 Power System Protection 3(3)**

Catalog Description

Coordination of power system protection components including microprocessor based relay-adaptive protection of power system, power system disturbance identification and system restoration following a major disturbance.

Prerequisite

MATH 4340– Advanced Engineering Mathematics

*** ECE 8620 Real Time Computer Application in Power Systems 3(3)**

Catalog Description

Principles of monitoring, control and operation of power systems; load frequency control, on-line load flow, power system state estimation, unit commitment and load forecasting.

Prerequisite

ECE 4180 - Power System Analysis

*** ECE 8630 Power System Dynamics and Stability 3(3)**

Catalog Description

Modeling of synchronous machines and their control systems; power system stability for small and large disturbances; excitation systems, governor control, power system stabilizers and state variables formulation for power systems dynamic stability studies.

Prerequisite

ECE 4180 - Power System Analysis and ECE 4190 – Electric Machines and Drives

Biomedical Systems

BIOE 2010 Introduction to Biomedical Engineering 3(3)

Catalog Description

Provides engineering, biological, and physical science students with an overview of the replacement of human body parts and the problems related to artificial devices.

Prerequisites

CH 1020 – General Chemistry, and one of BIOE 1010 – Biology for Bioengineers or BIOL 1030 – General Biology I or BIOL 1100 – Principles of Biology I.

BIOE 3700 Bioinstrumentation and Bioimaging 3(2)**Catalog Description**

Introduction of fundamental topics in bioinstrumentation and bioimaging focused on the acquisition and monitoring of vital signals. Basic principles for the selection and appropriate use of instruments for solving bioengineering and medical problems such as microscopy, magnetic resonance imaging, and ultrasounds, among others, are addressed.

Prerequisites

MATH 2080 – Introduction to Ordinary Differential Equations; and ECE 2020 – Electric Circuits I or ECE 2070 – Basic Electrical Engineering.

Co-requisite

BIOE 3701 - Bioinstrumentation and Bioimaging Laboratory

BIOE 4710 Biophotonics 3(3)**Catalog Description**

Biophotonics is an interdisciplinary subject of applying photonics to study biological samples from individual cells to the entire body. Introduces fundamental and frontier topics in optical imaging aspects of biophotonics for senior- level undergraduates and graduate students to gain the ability to solve bioimaging-related biomedical problems.

Prerequisites

MATH 2080; and PHYS 2210; and either ECE 2070 or ECE 3200.

Renewable Energy and Electric Vehicles*** ECE 4190 Electric Machines and Drives 3(3) (Spring)****Catalog Description**

Performance, characteristics, and modeling of AC and DC machines during steady-state and transient conditions. Introduction to power electronic devices and their use in adjustable speed motor drives.

Prerequisites

ECE 3210- Electronics II and ECE 3600 – Electric Power Engineering and ECE 3800 – Electromagnetics

Prerequisite or Concurrent Enrollment

MATH 4340 – Advanced Engineering Mathematics or consent of instructor

ECE 4200 Renewable Energy Penetration on the Power Grid 3(3) (Spring)**Catalog Description**

Introduces the basic definition of electric power, interfacing primary sources, generator/load characteristics, and renewable energy resources. Topics include solar energy grid interfacing, wind energy grid interfacing, battery charging/management, harmonic distortion, voltage sag, and national standards.

Prerequisites

ECE 2070 – Basic Electrical Engineering or ECE 3200 – Electronics I

ECE 4570 Fundamentals of Wind Power 3(3) (summer)**Catalog Description**

Introduction to wind turbine systems including wind energy potential and application to power generation. Topics include wind energy principles, wind site assessment, wind turbine components, power generation machinery, control systems, connection to the electric grid, and maintenance.

Prerequisite

ECE 2070 – Basic Electrical Engineering or ECE 3200 – Electronics I

ECE 4610 Fundamentals of Solar Energy 3(3) (Fall)**Catalog Description**

Introduces solar energy conversion systems. Topics include environmental benefits of solar energy, solar thermal systems, concentration solar power, photovoltaic (PV) cell design and manufacturing, sizing of PV system, hybrid photovoltaic/thermal systems, energy storage, and urban/rural applications.

Prerequisite

ECE 3200

ECE 4700 Vehicle Electronics 3(3) (Fall)**Catalog Description**

Introduction to vehicle electronic systems and networks. topics include a review of electronic systems in automotive and aerospace applications; vehicle components, sensors and actuators; communication busses; electric power generation and distribution in vehicle systems; vehicle diagnostics; reliability; and trends in vehicle system design.

Prerequisite

ECE 3200 - Electronics I.

ECE 4710 Electric Vehicles and Energy Storage 3(3) (Spring)**Catalog Description**

Introduction to hybrid electric propulsion systems and energy storage systems. topics include a review of fundamentals of electric vehicles and hybrid electric vehicles architectures covering reasons for hybridization, energy analysis of architecture and components; overview of energy storage systems (batteries and super capacitors); modeling of components; vehicle simulation; and supervisory

control.

Prerequisite

ECE 3200 - Electronics I

Other

(A maximum of 3 credits in this category can be used to satisfy the Technical Elective requirements)

ECE 4050 1-3 (1-3) Design Projects in Electrical and Computer Engineering

Catalog Description

Individually defined projects oriented toward providing experience in establishment of objectives and criteria, synthesis, analysis, construction, testing, and evaluation. Develops student creativity through the solution of open-ended problems. Includes individual instruction in design methodology. May be repeated for a maximum of three credits.

Prerequisite

ECE 3300 or ECE 4090; and consent of project supervisor.

ECE 4600 Computer-Aided Analysis and Design 3(3)

(Part of Summer Study Abroad Program)

ECE 4910 Undergraduate Honors Research 1-6 (1-6)

Catalog Description

Individual research projects conducted under the direct supervision and guidance of a faculty member. May be repeated for a maximum of six credits.

ECE 4920 Special Problems 1-3 (1-3)

Catalog Description

Special assignment in electrical or computer engineering. Some typical assignments include computer programs, term papers, technical literature searches, hardware projects, and design project leadership. May be taken only once for credit.

ECE 4930 Selected Topics 1-3 (1-3)

Catalog Description

Classroom study of current and new technical developments in electrical and computer engineering. May be repeated for a maximum of six credits, but only if different topics are covered.

Prerequisite

Consent of instructor.

ECE 4990 Creative Inquiry – Electrical and Computer Engineering 1-4 (1-4)

Catalog Description

In consultation with and under the direction of a faculty member, students pursue scholarly activities individually or in teams. These creative inquiry projects may be interdisciplinary. Arrangements with mentors must be established prior to registration. May be repeated for a maximum of eight credits. Includes Honors sections.

Prerequisite

Consent of faculty member/mentor

Appendix 2

List M –Advanced Math Electives (Electrical Engineering) (for 2008-15)

Credits required: 3 credits

MATH 4190, 6190 Discrete Mathematical Structures I 3(3) Applies theoretical concepts of sets, functions, binary relations, graphs, Boolean algebras, propositional logic, semigroups, groups, homomorphisms, and permutation groups to computer characteristics and design, words over a finite alphabet and concatenation, binary group codes, and other communication or computer problems. Includes Honors sections.

Prerequisite

MATH 3110.

MATH 4340, 6340 Advanced Engineering Mathematics 3(3) Fourier series, Laplace and Fourier transform, and numerical methods for solving initial value and boundary-value problems in partial differential equations are developed. Applications to diffusion wave and Dirichelet problems are given. Matrix methods and special functions are utilized.

Prerequisite

MATH 2080.

MATH 435, 635 Complex Variables 3(3)

Elementary functions; differentiation and integration of analytic functions; Taylor and Laurent series; contour integration and residue theory; conformal mapping; Schwartz-Christoffel transformation. Includes Honors sections.

Prerequisite

MATH 2060.

MATH 453, 653 Advanced Calculus I 3(3)

Limits, continuity, and differentiation of functions of one and several variables, the Riemann integral, and vector analysis. Includes Honors sections.

Prerequisite

MATH 2080.

MATH 454, 654 Advanced Calculus II 3(3) Continuation of MATH 4530.

Transformations, multiple integrals, line and surface integrals, infinite sequences and series, and improper integrals. Includes Honors sections.

Prerequisite

MATH 4530.

(Appendix 3)

List C – Oral Communications Electives (2008-15)

Credits required: 3 credits

COMM 1500 Introduction to Human Communication 3(2) Overview of theoretical approaches to the study of communication, including the theory and practice of interpersonal/small group/ intercultural/public communication. Includes a laboratory.

Corequisite Courses

COMM 1501 – Introduction to Human Communication Laboratory

COMM 2500 Public Speaking 3(3) Practical instruction in public speaking; practice in the preparation, delivery, and criticism of short speeches. Develops an understanding and knowledge of the process of communication. Includes a laboratory.

Corequisite Courses

COMM 2501 – Public Speaking Laboratory

HON 2230 Studies in Communications 3(3) Explores various topics in communications. Focus may be on a particular type of communication, medium or theory. May be repeated for a maximum of six credits, but only if different topics are covered.

Prerequisite

Membership in Calhoun Honors College.

OR:

For ROTC student, an approved cluster of courses such as:

A S 3090, 3100, 4090, 4100

or

M L 1010, 1020

Appendix 4

List Z – Special Requirement Electives (Electrical Engineering) **(only required for 2011-12, 2012-13, 2013-14, and 2014-15 curriculum years)**

Credits required: 3 credits

- An additional 3 credit hours must be selected from:

List T (EE Technical Electives) or

List M (Advanced Math Electives) or

List H (Arts & Humanities Electives) or

List SS (Social Science Electives), or

List 5HS (Courses that satisfy the old Engineering “5th Humanities and Social Science Course” Requirement”)

OR

One of the courses listed below:

ELE 3010 Executive Leadership and Entrepreneurship I 3(3) Cross-disciplinary course which seeks to create an appreciation of the opportunities and uncertainties in an entrepreneur’s life through extensive readings and interactions with entrepreneurs.

Prerequisite

MGT 2010

ELE 4010 Executive Leadership and Entrepreneur- ship II 3(3) Continuation of ELE 3010 with extensive use of a computer-simulated business start-up.

Prerequisite

ELE 3010.

MATH 3110 Linear Algebra 3(3) Introduction to the algebra of matrices, vector spaces, polynomials, and linear transformations. Includes Honors sections.

Prerequisite

MATH 1080 or MATH 1110.

MTHS 4120/6120 Introduction to Modern Algebra 3(3) Introduction to the concepts of algebra. Topics include the number system and the elementary theory of groups, rings, and fields. Includes Honors sections.

Prerequisite

MATH 3110.

MATH 4400/6400 Linear Programming 3(3) Introduction to linear programming covering the simplex algorithm, duality, sensitivity analysis, network models, formulation of models, and the use of simplex codes to solve, interpret, and analyze problems. Includes Honors sections.

Prerequisite

MATH 2060 and MATH 3110

MATH 4410 6410 Introduction to Stochastic Models 3(3) Introductory treatment of stochastic processes, finite-state Markov chains, queueing, dynamic programming, Markov decision processes, reliability, decision analysis, and simulation. Both theory and applications are stressed. Includes Honors sections.

Prerequisite

MATH 4000.

Appendix 5

List 5HS – Courses Satisfying Old ENGR 5th HSS Requirement

Applied Economics

AP EC 1xxx (any 1000 level AP EC course)

AP EC 2xxx (any 2000 level AP EC course)

Anthropology

ANTH xxxx (any ANTH course)

Architecture, Arts and Humanities

AAH xxxx

Art

ART xxxx

College of Architecture, Arts and Humanities

CAAH 2010

Communications Studies

COMM xxxx (not 1010, 1500, 2500)

Dance

DANCE xxxx

East Asian Studies

EAS 1230

Economics

ECON xxxx

English

ENGL 2xxx (not 2170 or 2310)

ENGL 3xxx (not 3000, 3040, 3120, 3140, 3150, 3160)

ENGL 4xxx (not 4000 or 4010)

Great Works

GW xxxx

Geography

GEOG xxxx

History
HIST xxxx

Honors
HON xxxx

Humanities
HUM xxxx

International Studies
IS 2100

Language
LANG xxxx

Law
LAW xxxx

Music
MUSIC xxxx

Pan African Studies
PAS xxxx

Performing Arts
PA xxxx

Philosophy
PHIL xxxx

Political Science
POSC xxxx

Psychology
PSYCH xxxx

Religion
REL xxxx

Rural Sociology
RS xxxx

Sociology
SOC xxxx

Science and Technology in Society

STS 1010, 1020

Theater

THEA xxxx

Women's Studies

WS xxxx

Languages

ASL xxxx (not native language, unless on Gen Ed list)

ARAB xxxx (not native language, unless on Gen Ed list)

CHIN xxxx (not native language, unless on Gen Ed list)

FR xxxx (not native language, unless on Gen Ed list)

GER xxxx (not native language, unless on Gen Ed list)

ITAL xxxx (not native language, unless on Gen Ed list)

JAPN xxxx (not native language, unless on Gen Ed list)

PORT xxxx (not native language, unless on Gen Ed list)

RUSS xxxx (not native language, unless on Gen Ed list)

SPAN xxxx (not native language, unless on Gen Ed list)