

Education

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The mission of Teacher Education at Elon University is to prepare quality teachers who are knowledgeable, responsible and thoughtful professionals. The conceptual framework, “Thoughtful Practice in a Community of Learners,” reflects the intention to create a learning environment in which teacher candidates inquire and collaborate to develop the knowledge, skills and dispositions for effective professional practice.

Knowledge

1. Demonstrate in-depth knowledge of the subject area(s) for which they seek licensure.
2. Use knowledge of students’ learning process to inform instruction.
3. Demonstrate understanding of pedagogical knowledge relevant to the subject area(s) for which they seek licensure.
4. Choose appropriately from among multiple instructional strategies to promote optimal student learning.
5. Choose appropriately from among a variety of resources, including technology, to promote active student learning.

Inquiry

6. Seek to understand students’ family and community cultures and to use knowledge to inform practice.
7. Inquire, actively and persistently, about student learning through the use of a variety of assessment procedures.
8. Analyze, through reflective practice, the effectiveness of their instruction and make appropriate adaptations to maximize student learning.

Professionalism

9. Establish positive classroom learning environments that support the social and academic growth of students.
10. Hold high expectations for the academic and social growth of all students.
11. Seek opportunities to further personal learning and professional growth.
12. Demonstrate enthusiasm and respect for the profession of teaching.

Elon’s education program prepares teachers for careers in the elementary, middle and high school grades. The program emphasizes practical hands-on experience in classrooms as well as educational theory and methods classes on campus. Yearly field experiences in public school classrooms begin the first year and culminate with a full semester of teaching in the teacher candidate’s licensure area.

Elon is widely recognized for the success of its Teacher Education program, which is accredited by the National Council for Accreditation of Teacher Education, and is one of only two private institutions in the state selected to offer the prestigious N.C. Teaching Fellows program.

Elon University offers programs leading to N.C. licensure in elementary education, middle grades education, special education (General Curriculum), special subject areas for grades K-12 and in seven areas at the secondary level.

The student who successfully completes any of the Teacher Education programs at Elon University will be eligible for licensure to teach in North Carolina. The state of North Carolina is party to the Interstate Certification Compact which qualifies Elon University graduates also to be licensed in all states party to this Compact. Currently there are 26 states which have entered into this reciprocity agreement. Any student planning to teach in a state not a part of the Interstate Certification Compact should obtain a copy of the licensure requirements for a public school teacher from the state superintendent of education of the state in which the student plans to teach.

Before being admitted into the Teacher Education program, the student must make application to the program, be recommended by the appropriate major department, be interviewed and approved by the Teacher Education Committee and meet minimum score requirements on the Preprofessional Skills Tests. North Carolina requires the following minimum scores: PPST Reading-176, PPST Mathematics-173 and PPST Writing-173. A minimum GPA of 2.5 is required for all coursework completed at the time of admission and must be maintained in order to continue in the program. In addition all students must pass a grammar competency test and earn a grade of C- or better in MTH 210 and PSY 321 to be admitted to the elementary education, special education or the middle grades programs.

In all cases, approval for admission to the program is subject to the discretion of the Teacher Education Committee, which bases its decision not only on the above factors, but also on satisfactory command of standard English usage (written and oral) and mental, physical, moral and emotional acceptability for teaching. The Teacher Education Committee may, at its discretion, dismiss a student from the Teacher Education program.

Application forms for the Teacher Education program are available in the office of the School of Education and must be filed by October 15 or March 15 of the semester immediately prior to the beginning of the student's junior year. A student must be unconditionally admitted to the program before being permitted to take education courses beyond the 200 level with the exception of EDU 398, Children's Literature (which does not require admission to the program). Any other exceptions to this policy must be approved by the dean of the School of Education.

To be recommended for teacher licensure, a teacher candidate must meet all academic requirements and have a minimum GPA of 2.5. A teacher candidate must also meet the North Carolina minimum score on the Specialty Area Test (minimum scores for these tests vary with content area) and have a recommendation from the school system in which student teaching was completed. They must also complete a technology portfolio as required by the North Carolina State Board of Education.

All students who are education majors or who already hold a bachelor's degree and are seeking only licensure are subject to the decisions and regulations of the N.C. State Board of Education. These decisions and regulations are binding on the student on the date and time specified by the board.

At Elon University, the Teacher Education programs are fully approved by the N.C. State Board of Education. While a student ordinarily may graduate and be licensed under the catalog requirements in effect at the time the student is admitted to the Teacher Education program, the board may mandate changes in standards of approved teacher education programs, requiring students to modify or add to their original degree programs to be eligible for licensure upon completion of graduation requirements. Students should consult their advisor about current program requirements.

A major in Elementary Education consists of the courses necessary to meet the requirements for elementary education (K-6) licensure in the public schools of North Carolina. The following courses are required of all elementary education majors:

FOUNDATIONAL COURSES

BIO 101	Topics in General Biology	3 sh
BIO 102	General Biology Lab	1 sh
SCI 121	Science Without Borders	4 sh
POL 111	American Government	4 sh
HST 123	The U.S. and N.C. since 1865	4 sh
* MTH210	Mathematics for Elementary and Middle Grades Teachers (GS Math requirement is a prerequisite)	4 sh
CIS 220	Computers and Teaching	3 sh
* PSY 321	Educational Psychology	4 sh
HED 362	Healthful Living in the Elementary School	2 sh
FNA 369	Fine Arts in the Public Schools	4 sh
EDU 398	Children's Literature	4 sh
EDU 211	School and Society	4 sh

Cultural Perspective Concentration **12 sh**

(see pages 109-113)

Passing score on Grammar Competency Test

EDU 323	Literacy Development I: Principles and Practices	3 sh
EDU 324	Literacy Development II: Strategies & Instruction for Struggling Readers	3 sh
EDU 346	Classroom Management	2 sh
EDU 451	Teaching Diverse Learners	4 sh

Principles of Learning and Teaching (PLT) I 8 sh

EDU 311 Principles of Learning and Teaching (PLT) I
Concentration areas:
Language Arts and Social Studies Methods and Materials

or

EDU 312 Principles of Learning and Teaching (PLT) I
Concentration areas:
Mathematics and Science Methods and Materials

and

Principles of Learning and Teaching (PLT) II 8 sh

EDU 411 Principles of Learning and Teaching (PLT) II
Concentration areas:
Language Arts and Social Studies Methods and Materials

or

EDU 412 Principles of Learning and Teaching (PLT) II
Concentration areas:
Mathematics and Science Methods and Materials

*C- or better required for admission to the program

Students who enroll in EDU 311 will enroll in EDU 412 in the following semester.
 Students who enroll in EDU 312 will enroll in EDU 411 in the following semester.
 This will ensure that all four content areas are addressed.

EDU 481	Supervised Observation and Student Teaching	10 sh
EDU 482	Critical Issues in Education: Capstone Seminar I	2 sh
EDU 483	Reflective Analysis of Practice: Capstone Seminar II	2 sh
TOTAL		95 sh

Cultural Perspective Concentrations

Elementary Education majors are encouraged to pursue a minor in one of the following areas:

- African/African American Studies
- Asian Pacific Studies
- Foreign Language
- International Studies
- Latin American Studies
- Women's Studies/Gender Studies

When a minor in one of these areas is not possible, Elementary Education majors are required to choose a minimum of 12 credit hours in a concentration with at least four hours at the 300–400 level. Students are strongly encouraged to study abroad for a semester or winter term to meet these requirements. Courses fulfilling the cultural perspective concentration requirement may, as appropriate, also fulfill general studies requirements. Minors in other areas, with a concentration, are also encouraged.

Following are the approved cultural perspective concentrations:

- Education for Social Justice
- International Studies
- Semester Abroad
- Society and Environment
- Women's Studies/Gender Studies

Education for Social Justice

Students choosing the Education for Social Justice Concentration are encouraged to expand the concentration to complete a minor in one of the following areas:

- African/African American Studies
- Non-Violence Studies
- International Studies Concentration

International Studies

Students choosing the *International Studies Concentration* should begin their course of study with HST/INT 221 (4 sh) World in the Twentieth Century.

Choose one of the following options:

- Foreign Language Study (8 sh of one modern foreign language)
- Regional Concentration
 - Africa
 - Asian/Pacific
 - Europe
 - Latin America

Students are encouraged to expand the *International Studies Concentration* to complete a minor in one of the following areas:

African/African American Studies

Asian Pacific Studies

Foreign Language

International Studies

Latin American Studies

*Global Studies is not an option.

Semester Abroad

A semester abroad may substitute for the concentration requirements. Check with your advisor for appropriate semester abroad options.

Society and Environment

This concentration is designed for teacher candidates who would like to pursue a more scientific approach to issues of diversity. This concentration is an exceptionally good fit with the elementary science curriculum.

Women's Studies/Gender Studies

Students choosing the Women's Studies/Gender Studies concentration are encouraged to expand the concentration to complete a minor in Women's Studies/Gender Studies.

The courses listed under each concentration provide *examples* of possibilities. Courses in the minor and additional courses may be approved by the department chair in education in consultation with the appropriate department chair or program director. These courses may also count toward general studies requirements.

Education for Social Justice

ENG 255	Topics in Literature (as thematically appropriate)
ENG 238	African-American Literature before 1945
ENG 239	African-American Literature since 1945
ENG 337	Asian Literature of Social Change
ENG 359	African-American Novels
ENG 370	Simple Living
ENG 372	Literature of Non-Violence
ENG/GST 373	America and Vietnam
MUS 343	African-American Composers (cross-listed with GST 343)
PHL 352	Eastern Philosophy
PHL 348	Environmental Ethics
PHL/GST 330	Economic Justice
HST 133	Civil Rights Movement
HST 363	African-American History, 1850-Present
HST 388	History of the Caribbean
REL 341	Christian Ethics
REL 345	Theology of Human Liberation
REL 348	Environmental Ethics
REL 353	Buddhism
REL 377	Feminist Ethics

REL 279	Topics in Eastern Religion
GEO 310	Development and the Environment in Latin America, Africa, Southeast Asia
GEO 320	Geography of Africa
GEO 331	Study Abroad: Analyzing Your Experience
GEO 342	Gender and Environment in South America
POL 141	International Relations
POL 324	Civil Liberties
POL 342	U.S. Foreign Policy
POL 345	International Terrorism
POL 367	Politics of Africa
POL 368	Latin American Politics
POL 374	Judicial Administration
POL 377	Politics of Victimization
POL 441	Peace, War and Conflict Resolution
PSY 325	Psychology of American Protest Music
PSY 327	Psychology of Non-Violence
PSY 357	Criminal Behavior
SOC 241	Social Issues and Problems
SOC 245	Non-Violence of the Brave: From Ghandhi to King
SOC 341	Ethnic and Race Relations
SOC 343	Social and Cultural Change

International Studies

HST/INT 221 (4) World in the Twentieth Century

This course is required in this concentration.

Regional Concentration: Africa

ART 341	African Art (4)
ENG 255	Topics in Literature (as thematically appropriate)
ENG 338	African Experiences in Literature
FRE 362	Francophone Cultures Outside France
HST 313	Modern Africa
HST 314	History of Southern Africa
GEO 320	Geography of Africa
POL/INT 141	International Relations
POL 367	Politics of Africa
JCM 346	African Film
AAA 361	Seminars in African/African American Studies
AAA 491	Independent Study

Regional Concentration: Asian/Pacific

ENG 255	Topics in Literature (as thematically appropriate)
ENG 337	Asian Literature of Social Change
PHL 352	Eastern Philosophy
PHL 353	Zen and the Culture of Japan
HST 320	China, Japan and the Pacific Century
REL 353	Buddhism
REL 356	Hinduism

- POL/INT 141 International Relations
- POL 363 Politics of Asia
- POL 365 Politics of Eurasia
- SOC 329 Peoples & Cultures of Southeast Asia
- SOC 344 Socio/cultural Change in India
- ENS 310 Environmental Issues of Southeast Asia

Regional Concentration: Europe

- ENG 222 British Literature II
- ENG 325 Romanticism
- ENG 326 Realism and the Later 19th Century
- ENG 356 The Novel: British Women Writers
- PHL 433 Marx, Darwin and Freud
- FRE 332 Introduction to French Literature II
- FRE 361 French Civilization
- SPN 333 Spanish Civilization
- SPN 351 Studies in Peninsular Literature
- SPN 353 Survey in Peninsular Literature
- HST 316 The History of Imperial Russia to 1917
- HST 317 Russia & the Soviet Union since 1917
- HST 324 England Within the British Empire
- HST 326 History of Ireland
- HST 327 History of Scotland
- HST 335 Growth of Modern Europe
- HST 336 Europe, 1914-1945
- HST 337 Europe, 1945 to present
- HST 338 Germany, Democracy & Hitler 1914-1945
- HST 339 A History of the Holocaust
- POL/INT 141 International Relations
- POL 364 Politics of Europe
- POL 365 Politics of Eurasia
- POL 428 Comparative Public Policy

Regional Concentration: Latin America

- ENG 255 Topics in Literature (as thematically appropriate)
- ENG 335 Latin American Literature and Culture
- SPN 334 Latin American Civilization
- SPN 352 Survey of Latin American Literature
- SPN 354 Studies in Latin American Literature
- HST 341 Modern Central American History
- HST 350 History of Brazil
- HST 351 History of Mexico
- HST 353 Colonial Latin America
- HST 354 Modern Latin America
- GEO 342 Gender and Environment in South America
- ENS 365 Natural History, Ecology of Latin America
- POL/INT 141 International Relations
- POL 368 Latin American Politics
- SOC 363 Latin American Social Movements
- SOC 364 Inequality and Development in Latin America

Society and Environment

ENG 339	American Environmental Writers
PHL/REL 348	Environmental Ethics
ECO 335	Economics of Environmental Issues (prereq. ECO 201)
GEO 310	Development and the Environment in Latin America, Africa and South Asia
POL 224	Environmental Policy and Law
POL 344	International Environmental Policy
BIO 112, 114	Introduction to Population Biology and Lab
BIO 215	Organismal Biology and Field Techniques
ENS 111, 113	Introduction to Environmental Science and Lab
PHY 110	Energy and the Environment
BIO 335 IS	Field Biology in Belize
BIO 379 IS	Field Biology in the Galapagos
ENS 310	Environmental Issues of Southeast Asia
ENS 365	Natural History, Ecology of Latin America
ENS 372	Environmental Visions – Alternative Futures
BIO 344	Evolution
ENS/GEO 350	Introduction to Geographic Information Systems

Women's Studies/Gender Studies

ENG 255	Topics in Literature (as thematically appropriate)
ENG 333-WG	Women in Literature: Feminist Approaches
ENG 356-WG	The Novel: British Women Writers
ENG 361-WG	Gender Issues in Cinema
PHL 345-WG	Feminist Philosophy
HST 364-WG	History of Women in the U.S.
REL 347-WG	Women and Religion
ECO 270-WG	Economics of Gender
GEO 342	Gender and Environment in South America
POL 241-WG	International Relations
PSY 215-WG	Psychology of Personal Relationships
PSY 315-WG	Psychology of Sex and Gender
SOC 311-WG	The Family
SOC 345-WG	Sociocultural Perspectives on Gender
GST 270-WG	Women, Men and Society
GST 257-WG	Women, Culture and Development
GST 369-WG	Men and Masculinity
GST 269	Women and Leadership
WGS 300	Current Controversies in Feminism
WGS 461-469	Special Topics in Women's Studies/Gender Studies
WGS 481	Internship in Women's Studies/Gender Studies
WGS 491	Independent Study

The Special Education (General Curriculum) is a dual licensure program in which teacher candidates complete the requirements for licensure in Special Education (General Curriculum) and one of the following areas: Elementary Education, Middle Grades Education, English Education, Mathematics Education, Social Studies/History Education, or Science Education (biology concentration).

All **Special Education (General Curriculum)** students must take the following core courses:

Core courses

EDU 211	School and Society	4 sh
EDU 342	Foundations of Special Education	3 sh
EDU 345	Planning and Managing the Learning Environment in Special Education	4 sh
EDU 435	Assessment Methods and Interpretation in Special Education	4 sh
EDU 444	Language, Literacy and Mathematics in Special Education	4 sh
EDU 445	Teaching/Learning Strategies for Students in Special Education	4 sh
TOTAL		23 sh

Special Education and Elementary Education

CORE COURSES 23 sh

FNA 369	Fine Arts in the Public Schools	4 sh
HED 362	Healthful Living in the Elementary School	2 sh
HST 123	The U.S. and N.C. since 1865	4 sh
POL 111	American Government	4 sh
BIO 101	Topics in General Biology	3 sh
BIO 102	General Biology Lab	1 sh
SCI 121	Science without Borders	4 sh
PSY 321	Educational Psychology	4 sh
MTH 210	Mathematics for Elementary and Middle Grades Teachers (GS Math requirement is a prerequisite)	4 sh
CIS 220	Computers and Teaching	3 sh
	Cultural Concentration Courses	12 sh
EDU 323	Literary Development I: Principles and Practices	3 sh
EDU 398	Children's Literature	4 sh
	<u>Principles of Learning and Teaching (PLT) I</u>	8 sh
EDU 311	Principles of Learning and Teaching (PLT) I <i>Concentration areas:</i> Language Arts and Social Studies Methods and Materials	
	or	
EDU 312	Principles of Learning and Teaching (PLT) I <i>Concentration areas:</i> Mathematics and Science Methods and Materials	

and

	<u>Principles of Learning and Teaching (PLT) II</u>	8 sh
EDU 411	Principles of Learning and Teaching (PLT) II <i>Concentration areas:</i> Language Arts and Social Studies Methods and Materials	
	or	

EDU 412	Principles of Learning and Teaching (PLT) II <i>Concentration areas:</i> Mathematics and Science Methods and Materials	
EDU 481	Student Teaching – Winter Term	4 sh
EDU 481	Student Teaching – Spring Semester	10 sh
EDU 482	Critical Issues in Education: Capstone Seminar I	2 sh
EDU 483	Reflective Analysis of Practice: Capstone Seminar II	2 sh

TOTAL **109 sh**

Special Education and Middle Grades Education

CIS 220	Computers and Teaching	3 sh
PSY 321	Educational Psychology	4 sh
CORE COURSES		23 sh

Middle Grades Concentration – choose one

Communication Skills Concentration

ENG 205	Grammar	4 sh
ENG 224	American Literature II	4 sh
ENG 250	Interpretations of Literature	4 sh
ENG 319	Writing Center Workshop	4 sh
ENG 399	Young Adult Literature	4 sh
EDU 421	Materials and Methods of Teaching Middle Grades and Secondary English	4 sh

One course from the following: 4 sh

- ENG 238 African-American Literature before 1945
- ENG 239 African-American Literature since 1945
- ENG 359 African-American Novels

concentration total **28 sh**

OR Social Studies Concentration

ECO 201	Principles of Economics	4 sh
GEO 131	The World's Regions	4 sh
HST 112	Europe and the Mediterranean World since 1660	4 sh
HST 123	U.S. & N.C. Since 1865	4 sh
HST 221	The World in the Twentieth Century	4 sh
POL 111	American Government	4 sh
EDU 425	Materials and Methods of Teaching Middle Grades and Secondary Social Studies	4 sh

concentration total **28 sh**

OR Mathematics Concentration

MTH 112	General Statistics	4 sh
MTH 115	Trigonometry	4 sh
MTH 121	Calculus and Analytic Geometry I	4 sh
MTH 221	Calculus and Analytic Geometry II	4 sh

MTH 210	Mathematics for Elementary and Middle Grades Teachers	4 sh
MTH 206	Discrete Structures	4 sh
EDU 422	Materials and Methods of Teaching Middle Grades and Secondary Mathematics	4 sh

concentration total **28 sh**

OR Science Concentration

BIO 101	Topics in General Biology	3 sh
BIO 102	General Biology Lab	1 sh
SCI 121	Science without Borders	4 sh
CHM 111	General Chemistry I	3 sh
CHM 113	General Chemistry Lab	1 sh
PHY 110	Energy and the Environment	4 sh
PHY 102	Introduction to Astronomy	4 sh
PHY 103	Introduction to Geology	4 sh
EDU 424	Materials and Methods of Teaching Middle Grades and Secondary Science	4 sh

concentration total **28 sh**

EDU 441	Foundations of Middle Level Teaching	3 sh
EDU 442	Effective Middle Level Teaching	4 sh
EDU 481	Student Teaching	10 sh
EDU 482	Critical Issues in Education: Capstone Seminar I	2 sh
EDU 483	Reflective Analysis of Practice: Capstone Seminar II	2 sh

TOTAL **79 sh**

Special Education and English Education

CIS 220	Computers and Teaching	3 sh
PSY 321	Educational Psychology	4 sh

CORE COURSES **23 sh**

ENG 221	British Literature I	4 sh or
ENG 222	British Literature II	4 sh
ENG 219	Writing	4 sh
ENG 205	Grammar	4 sh
Eight hours	300-level literature	8 sh
ENG 206	Introduction to TESOL	4 sh
ENG 223, 224, 238, or 239	(American Literature)	4 sh
ENG 331, 335, 337, or 338	(World Literatures)	4 sh
ENG 319	Writing Center Workshop	4 sh
ENG 342	Shakespeare	4 sh
ENG 495	Senior Seminar: Literature	4 sh
EDU 421	Materials and Methods of Teaching Middle Grades and Secondary English	4 sh
EDU 480	Student Teaching Seminar	2 sh

EDU 481	Student Teaching	10 sh
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TOTAL		90 sh
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Special Education and Mathematics Education

CORE COURSES		23 sh
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CSC 130	Computational Programming	4 sh
MTH121	Calculus and Analytic Geometry I	4 sh
MTH 221	Calculus and Analytic Geometry II	4 sh
MTH 231	Mathematical Reasoning	4 sh
MTH 311	Linear Algebra	4 sh
MTH 312	Abstract Algebra	4 sh
MTH 321	Calculus and Analytic Geometry III	4 sh
MTH 331	Modern Geometry	4 sh
MTH 341	Probability Theory and Statistics	4 sh
MTH 425	Analysis	4 sh
MTH 361	Seminar I	2 sh
MTH 461	Seminar II	2 sh
PHY 113	Physics w/Calculus	4 sh
PSY 321	Educational Psychology	4 sh
EDU 422	Materials and Methods of Teaching Middle Grades and Secondary Math	4 sh
EDU 480	Student Teaching Seminar	2 sh
EDU 481	Student Teaching	10 sh

TOTAL		91 sh
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Special Education and History Education

CIS 220	Computers and Teaching	3 sh
PSY 321	Educational Psychology	4 sh

CORE COURSES		23 sh
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HST 111	Europe and the Mediterranean World to 1660	4 sh
HST 112	Europe and the Mediterranean World since 1660	4 sh
HST 121	United States History through 1865	4 sh
HST 123	U.S. & N.C. Since 1865	4 sh
HST 301	Research Methods	4 sh

One history seminar course		4 sh
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Twelve hours HST electives at the 300-400 level chosen from each of the following areas:		12 sh
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- 1) US Minority History (African-Americans, Native Americans and Women in the U.S.)
- 2) Europe
- 3) Developing World (Africa, Latin America and Asia)

GEO 131	The World's Regions	4 sh
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POL 111	American Government	4 sh
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ECO 201	Principles of Economics	4 sh
EDU 425	Materials and Methods of Teaching Middle Grades and Secondary Social Studies	4 sh
EDU 480	Student Teaching Seminar	2 sh
EDU 481	Student Teaching	10 sh
TOTAL		94 sh

Special Education and Science Education

CIS 220	Computers and Teaching	3 sh
PSY 321	Educational Psychology	4 sh

CORE COURSES 23 sh

BIO 111	Introductory Cell Biology	3 sh
BIO 112	Introductory Population Biology	3 sh
BIO 113	Cell Biology Lab	1 sh
BIO 114	Population Biology Lab	1 sh
BIO 221	Zoology	4 sh
BIO 222	Botany	4 sh
BIO 322	Molecular/Cellular Biology	4 sh
CHM 111	General Chemistry I	3 sh
CHM 112	General Chemistry II	3 sh
CHM 113	General Chemistry I Lab	1 sh
CHM 114	General Chemistry II Lab	1 sh
CHM 211	Organic Chemistry I	3 sh
CHM 213	Organic Chemistry I Lab	1 sh

Select one course from: 4 sh

- BIO 312 Comparative Vertebrate Anatomy
- BIO 321 Microbiology
- BIO 325 Human Histology
- BIO 342 Plant Physiology
- BIO 452 General Ecology

Select one course from: 4 sh

- CHM 212/214 Organic Chemistry II & Lab
- CHM 205 Inorganic Chemistry

PHY 102	Astronomy	4 sh
PHY 103	Geology	4 sh
EDU 424	Materials and Methods of Teaching Middle Grades and Secondary Science	4 sh
EDU 480	Student Teaching Seminar	2 sh
EDU 481	Student Teaching	10 sh
TOTAL		94 sh

A major in Middle Grades Education consists of the courses necessary to meet the requirements for middle grades (6-9) licensure in the public schools of North Carolina. The following Core Courses are required of all middle grades majors:

CIS 220	Computers and Teaching	3 sh
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PSY 321	Educational Psychology	4 sh
EDU 211	School and Society	4 sh
EDU 324	Literacy Development II: Strategies & Instruction for Struggling Readers	3 sh
EDU 346	Classroom Management	2 sh
EDU 441	Foundations of Middle Level Education	3 sh
EDU 442	Effective Middle Level Teaching	4 sh
EDU 451	Teaching Diverse Learners	4 sh
EDU 481	Supervised Observation and Student Teaching	10 sh
EDU 482	Critical Issues in Education: Capstone Seminar I	2 sh
EDU 483	Reflective Analysis of Practice: Capstone Seminar II	2 sh
One subject area concentration		28 sh
TOTAL		69 sh

In addition to the **Core Courses**, a student majoring in middle grades education must select one subject area concentration from the following:

Communication Skills Concentration

ENG 205	Grammar	4 sh
ENG 224	American Literature II	4 sh
ENG 250	Interpretations of Literature	4 sh
ENG 319	Writing Center Workshop	4 sh
ENG 399	Young Adult Literature	4 sh
EDU 421	Materials and Methods of Teaching Middle Grades and Secondary English	4 sh
One course from the following:		4 sh
ENG 238	African-American Literature before 1945	
ENG 239	African-American Literature since 1945	
ENG 359	African-American Novels	

concentration total **28 sh**

Social Studies Concentration

ECO 201	Principles of Economics	4 sh
GEO 131	The World's Regions	4 sh
HST 112	Europe and the Mediterranean World since 1660	4 sh
HST 123	U.S. & N.C. Since 1865	4 sh
HST 221	The World in the Twentieth Century	4 sh
POL 111	American Government	4 sh
EDU 425	Materials and Methods of Teaching Middle Grades and Secondary Social Studies	4 sh

concentration total **28 sh**

Mathematics Concentration

MTH 112	General Statistics	4 sh
MTH 115	Trigonometry	4 sh

MTH 121	Calculus and Analytic Geometry I	4 sh
MTH 221	Calculus and Analytic Geometry II	4 sh
MTH 210	Mathematics for Elementary and Middle Grades Teachers	4 sh
MTH 206	Discrete Structures	4 sh
EDU 422	Materials and Methods of Teaching Middle Grades and Secondary Mathematics	4 sh
concentration total		28 sh

Science Concentration

BIO 101	Topics in General Biology	3 sh
BIO 102	General Biology Lab	1 sh
SCI 121	Science without Borders	4 sh
CHM 111	General Chemistry I	3 sh
CHM 113	General Chemistry Lab	1 sh
PHY 110	Energy and the Environment	4 sh
PHY 102	Introduction to Astronomy	4 sh
PHY 103	Introduction to Geology	4 sh
EDU 424	Materials and Methods of Teaching Middle Grades and Secondary Science	4 sh
concentration total		28 sh

The student planning to teach at the high school level completes a major in a discipline and the necessary **Professional Studies** courses for teacher licensure at the secondary level (grades 9-12). Secondary education licensure is available in biology, chemistry, comprehensive science, English, history, mathematics, physics and social studies. Specific requirements for each program are listed with the appropriate department in this catalog. In general, the following Professional Studies courses must be satisfactorily completed:

EDU 211	School and Society	4 sh
EDU 322	Reading in the Content Areas	2 sh
Choose an appropriate methods course:		4 sh
EDU 421	Materials and Methods of Teaching Middle Grades and Secondary English	
EDU 422	Materials and Methods of Teaching Middle Grades and Secondary Mathematics	
EDU 424	Materials and Methods of Teaching Middle Grades and Secondary Science	
EDU 425	Materials and Methods of Teaching Middle Grades and Secondary Social Studies	
EDU 430	Foundations of Education	3 sh
EDU 450	Meeting Special Learning Needs of Children	3 sh
EDU 480	Student Teaching Seminar	2 sh
EDU 481	Supervised Observation and Student Teaching	10 sh
CIS 220	Computers and Teaching (Not required for Mathematics Education majors)	3 sh
PSY 321	Educational Psychology	4 sh
TOTAL		35 sh

Programs leading to licensure in Special Subject Areas (K-12) level are available in French, health education, music education, physical education and Spanish. Specific requirements for these programs are listed with the appropriate department in this catalog. In general, the following Professional Studies courses must be satisfactorily completed:

EDU 211	School and Society	4 sh
EDU 322	Reading in the Content Areas	2 sh
One of the following courses:		4 sh
EDU 423	Materials and Methods of Teaching Physical Education	
EDU 427	Materials and Methods of Teaching Health and Safety	
EDU 428	Materials and Methods of Teaching Foreign Languages	
MUS 461	Music Education in the Public Schools	
EDU 430	Foundations of Education	3 sh
EDU 450	Meeting Special Learning Needs of Children (Not required for Physical Education majors)	3 sh
EDU 480	Student Teaching Seminar	2 sh
EDU 481	Supervised Observation and Student Teaching	10 sh
CIS 220	Computers and Teaching	3 sh
PSY 321	Educational Psychology	4 sh
TOTAL		35 sh

EDU 211. SCHOOL AND SOCIETY **4 sh**

This course is designed to introduce students to the cultural, social, historical, legal and philosophical foundations of education. Students examine critical issues that impact education in the 21st century. An integrated field experience enables students to analyze a variety of perspectives on the purposes of education and instructional practices related to classroom management, learning environment and meeting the needs of learners who are diverse in culture, language and ability. Students will develop skills in critical thinking, leadership, observing, interviewing, reading, writing and oral communications. Offered fall, winter and spring.

121

**EDU 311. PRINCIPLES OF LEARNING AND TEACHING I:
LANGUAGE ARTS AND SOCIAL STUDIES METHODS AND MATERIALS** **8 sh**

Students learn how to investigate, evaluate and select content, methods and materials used in organizing and teaching language arts and social studies in elementary school. They develop appropriate curricula and examine personal beliefs and dispositions. They design and implement differentiated lessons based on state standards and develop technology-enhanced, project-based learning units. They gain a sound pedagogical knowledge base, an understanding of the importance of inquiry and professionalism and have opportunities to participate in a community of learners. A concurrent practicum offers opportunities to apply concepts and skills. Prerequisites: EDU 211, PSY 321, CIS 220. Corequisite: EDU 323. Admission to Teacher Education Program. Offered fall and spring.

**EDU 312. PRINCIPLES OF LEARNING AND TEACHING I:
MATHEMATICS AND SCIENCE METHODS AND MATERIALS** **8 sh**

Students learn how to investigate, evaluate and select content, methods and materials used in organizing and teaching mathematics and science in the elementary school. They develop appropriate curricula and examine personal beliefs and dispositions. They design and implement differentiated lessons based on state standards and develop technology-enhanced, project-based learning units. They gain a sound pedagogical knowledge base, an understanding of the importance of inquiry and professionalism and have

opportunities to participate in a community of learners. A concurrent practicum offers opportunities to apply concepts and skills. Prerequisites: EDU 211, MTH 210, PSY 321, CIS 220. Admission to Teacher Education Program. Offered fall and spring.

EDU 321. READING IN THE ELEMENTARY SCHOOL **4 sh**

Study focuses on developing the philosophical framework, knowledge and methodology necessary for planning learning experiences to enhance students' language development. Key course components include theory and process, pedagogy, assessment, the learner and professional development. Prerequisites: EDU 211, PSY 321. Corequisites: EDU 311, 312, 411 or 412. Admission to the Teacher Education Program. Offered fall and spring.

EDU 322. READING IN THE CONTENT AREAS **2 sh**

The focus of this course is on reading strategies to guide middle school and high school instruction. Prospective teachers apply readability formulas to content area readings and design activities to promote vocabulary development, comprehension, study skills and writing. Prerequisites: EDU 211, PSY 321. Offered fall and spring.

EDU 323. LITERACY DEVELOPMENT I: PRINCIPLES AND PRACTICES **3 sh**

This course involves the study of the fundamental processes by which a child learns to read both linear and non-linear communication. Attention is given to readiness factors, vocabulary development, word attack, comprehension skills, assessment, writing and reading, interest in reading, the interrelatedness of all areas of the language arts to the reading process, and the integration of technology into the development of literacy. A variety of methodologies and instructional strategies focusing on providing balanced reading instruction to meet diverse student strengths and needs include language experience, phonics, reading for meaning, literature circles, reading workshop, basal book, electronic book discussions, technology projects and monitoring reading progress. Prerequisites: EDU 211, PSY 321. Admission to the Teacher Education Program. Corequisites: EDU 311 or 312. Offered fall and spring.

EDU 324. LITERACY DEVELOPMENT II: STRATEGIES & INSTRUCTION FOR STRUGGLING READERS **3 sh**

The focus of this course is on planning and modifying elementary classroom instruction to address the needs of children who, for a variety of reasons, experience difficulty in acquiring basic literacy skills. Emphasis is placed on using assessment of children's strengths and weaknesses to guide instructional decision making. Students practice administering a variety of diagnostic tools, interpreting the data, and using the information to design and, when warranted, modify instruction. They acquire skills necessary to design explicit, systematic instruction in phonemic awareness, decoding, spelling, reading fluency, vocabulary, reading comprehension and writing. Prerequisites: EDU 211, PSY 321 (for all students), and EDU 323 or EDU 441 (Middle Grades only). Admission to the Teacher Education Program. Corequisite: EDU 411 or 412. Offered fall and spring.

EDU 342. FOUNDATIONS OF SPECIAL EDUCATION **3 sh**

This course addresses the evolution of the field of special education, its philosophical and theoretical foundations, legal underpinnings, and current trends and controversies. Emphasis is on acquiring a broad knowledge base regarding the characteristics of students with exceptional learning needs and the process and procedures for providing special education. Consideration is given to how issues of human diversity impact families, cultures and schools and how these issues affect delivery of special education services. Admission to the Teacher Education Program. Offered fall.

EDU 345. PLANNING AND MANAGING THE LEARNING ENVIRONMENT FOR STUDENTS WITH EXCEPTIONAL LEARNING NEEDS **4 sh**

This course provides teacher candidates with the competencies and skills to use positive behavioral supports to establish a classroom environment that promotes the academic

and social development of students with exceptional learning needs. Candidates will learn to use strategies such as social skills training, functional behavioral assessment, cognitive problem solving and self-regulation of behavior. The needs of families and how to involve families in educational programming for their children are considered. Admission to the Teacher Education Program. Offered spring.

EDU 346. CLASSROOM MANAGEMENT

2 sh

This course focuses on the important aspects of establishing a healthy, positive classroom environment that promotes children's academic growth and social development. The role of the teacher in regard to managing student behavior will be explored from the cognitive, ecological and behaviorist perspectives. Teacher candidates are taught to take a proactive stance toward behavior management, thereby decreasing problem behaviors in the classroom. Included in this course are strategies for establishing a classroom in which children feel safe to take academic risks, as well strategies for effectively addressing specific behavior problems. The important role of family involvement will be discussed, as well as means of effectively inviting family members to form beneficial partnerships with classroom teachers. Elementary and Middle Grades only. Co-requisite: EDU 311, 312, 411, or 412. Admission to the Teacher Education Program.

EDU 347. NATURE AND NEEDS OF STUDENTS WITH LEARNING DISABILITIES

3 sh

A course designed to consider the specific area of disability in depth, including etiology, prevalence and characteristics. This course will review and analyze current practice and research on issues relating to the education of students with learning disabilities. Historical and legal aspects pertaining to the particular area of disability will be reviewed as well. Admission to the Teacher Education Program. Offered winter.

EDU 398. CHILDREN'S LITERATURE

4 sh

This course is a survey of children's literature, historical and contemporary. Students will read deeply and critically works from the United States and around the world as they develop an awareness of children's books and authors. Students will revisit and revise common stereotypes and misconceptions concerning children's literature to gain a clearer understanding of how effective literature speaks to children, reflects their experience and provides insight into themselves, people and the world. Students will gain an understanding of how children's literature can bring greater sensitivity and an alternative perspective to any course of study. Offered fall, winter and spring.

EDU 411. PRINCIPLES OF LEARNING AND TEACHING II:

LANGUAGE ARTS AND SOCIAL STUDIES METHODS AND MATERIALS

8 sh

Students learn how to investigate, evaluate and select content, methods and materials used in organizing and teaching language arts and social studies in the elementary school. They develop appropriate curricula and examine personal beliefs and dispositions. Building on knowledge acquired in PLT I, students design and implement integrated technology-enhanced, problem-based learning units, incorporating the elements of Universal Design (UD). National standards provide the context. They gain a more in-depth pedagogical knowledge base, a deeper understanding of the importance of inquiry and professionalism and have additional opportunities to participate in a community of learners. A concurrent practicum offers opportunities to apply concepts and skills. Prerequisites: EDU 211, PSY 321, CIS 220, EDU 312. Prerequisite or corequisite: EDU 324. Admission to Teacher Education Program. Offered fall and spring.

EDU 412. PRINCIPLES OF LEARNING AND TEACHING II:

MATHEMATICS AND SCIENCES METHODS AND MATERIALS

8 sh

Students learn to investigate, evaluate and select content, methods and materials used in organizing and teaching mathematics and science in the elementary school. They develop and implement appropriate curricula and examine personal beliefs and dispositions. Building on knowledge acquired in PLT I, students design and implement integrated technology-enhanced, problem-based learning units, incorporating the elements of Universal Design (UD). National standards provide the context. They gain a more in-

depth pedagogical knowledge base, a deeper understanding of the importance of inquiry and professionalism and have additional opportunities to participate in a community of learners. A concurrent practicum offers opportunities to apply concepts and skills. Prerequisites: EDU 211, PSY 321, CIS 220, EDU 311, MTH 210. Admission to Teacher Education Program. Offered fall and spring.

- EDU 421. MATERIALS AND METHODS OF TEACHING MIDDLE GRADES AND SECONDARY ENGLISH** 4 sh
- In this study of the content and organization of the English curriculum with emphasis on methods and materials used in teaching literature, language skills and composition, students review print and nonprint media, create lesson and unit plans, lead classroom discussions and conduct teaching demonstrations. Public school classroom observation and assistance are required. Prerequisites: EDU 211, PSY 321. Offered fall semester.
- EDU 422. MATERIALS AND METHODS OF TEACHING MIDDLE GRADES AND SECONDARY MATHEMATICS** 4 sh
- Students study the objectives and content of the mathematics curriculum in grades 6–12, including the materials, techniques and methods of evaluation used in teaching mathematics in middle and high school grades. A practicum in the public schools is required. Prerequisites: EDU 211, PSY 321. Offered fall semester.
- EDU 423. MATERIALS AND METHODS OF TEACHING PHYSICAL EDUCATION** 4 sh
- This course covers the methods, materials and techniques of teaching physical education, including organization and planning of the total curriculum and daily programs. Students also observe and conduct activity classes. Public school practicum required. Prerequisites: EDU 211, PSY 321. Offered fall semester.
- EDU 424. MATERIALS AND METHODS OF TEACHING MIDDLE GRADES AND SECONDARY SCIENCE** 4 sh
- Students develop, select and evaluate content, methods and materials used in teaching science at the middle or high school level. Study examines current trends in teaching the natural sciences and addresses safety concerns. Observations and practicum in middle and/or high schools required. Prerequisites: EDU 211, PSY 321. Offered fall semester.
- EDU 425. MATERIALS AND METHODS OF TEACHING MIDDLE GRADES AND SECONDARY SOCIAL STUDIES** 4 sh
- This study of the materials and methods of teaching social studies emphasizes planning, organization, objectives and evaluation. Public school practicum required. Prerequisites: EDU 211, PSY 321. Offered fall semester.
- EDU 427. MATERIALS AND METHODS OF TEACHING HEALTH AND SAFETY** 4 sh
- This course emphasizes methods of curriculum planning, analyzing and developing content area, unit plans and teaching approaches for all levels of school (K–12). Public school practicum required. Prerequisites: EDU 211, PSY 321. Offered fall semester, even-numbered years.
- EDU 428. MATERIALS AND METHODS OF TEACHING FOREIGN LANGUAGES** 4 sh
- This study of the content and organization of the foreign language curriculum in the public schools emphasizes methods and materials used in teaching at all levels (K–12) and covers how teaching the four basic skills and the target culture varies at each level. Students discuss theories of planning, instruction, choice of materials and evaluation, and gain practical experience by participating in a public school classroom. Prerequisites: EDU 211, PSY 321. Offered fall semester.
- EDU 430. FOUNDATIONS OF EDUCATION** 3 sh
- This foundations course is a study of the historical development and philosophical basis for public education in the U.S., including the role and influence of schools in society

and the teacher's role as it has emerged from the philosophies, practices and policies of public education. Offered fall and spring.

EDU 435. ASSESSMENT METHODS AND INTERPRETATION IN SPECIAL EDUCATION 4 sh

This course provides teacher candidates with knowledge required to design assessment plans for students with exceptional learning needs. Consideration is given to legal policies and ethical principles in regard to the administration and interpretation of assessment procedures. Candidates learn to evaluate standardized assessment instruments in terms of reliability, validity and adequacy of norm sample and to collaborate with families and other professionals to gather information and share assessment results. Admission to the Teacher Education Program. Offered spring.

EDU 441. FOUNDATIONS OF MIDDLE LEVEL EDUCATION 3 sh

This course provides a foundation for middle level (6-9) education majors with concentrations in math, science, social studies and language arts. The course explores the unique physical, intellectual, social and personal characteristics of the young adolescent (age 10-14) with implication for curriculum development and instruction. Emphasis is on young adolescent learning needs, middle school philosophy and organization, classroom diversity with emphasis on students with limited English proficiency, responsive curriculum design and scholarly research related to issues of diversity, access to learning, and literacy; management of the learning environment; and professional leadership. Prerequisites: Admission to program. Offered fall.

EDU 442. EFFECTIVE MIDDLE LEVEL TEACHING 4 sh

This course is designed for middle grades majors (6-9) with concentration areas in math, science, social studies and language arts. The course builds upon and extends the foundational experiences in EDU 441 through in-depth exploration of theory as related to young adolescent learning; focused inquiry, collaboration and teaching on middle level interdisciplinary teams; service learning instructional design; and scholarly research related to issues of diversity, access to learning, and literacy; management of the learning environment; and professional leadership. Prerequisite: EDU 441. Offered spring.

EDU 444. LANGUAGE, LITERACY AND MATHEMATICS METHODS IN SPECIAL EDUCATION 4 sh

In this course, teacher candidates become familiar with the theory and research base on effective instructional techniques for children with exceptional learning needs. They learn how to apply specific methods that involve explicit, systematic and intensive instruction to help children with learning difficulties acquire foundational skills in reading, language arts and mathematics. Candidates learn to use curriculum-based assessment as a basis for planning, monitoring and modifying instruction. Admission to the Teacher Education Program. Offered fall.

EDU 445. TEACHING AND LEARNING STRATEGIES FOR STUDENTS WITH EXCEPTIONAL LEARNING NEEDS 4 sh

This course focuses on effective teaching and learning strategies for adolescents with mild to moderate learning needs. The course emphasizes strategies that reflect a cognitive/metacognitive instructional approach to learning. Consideration is given to the use of technology as a tool for learning and to the assessment of strategy effectiveness by monitoring student progress. Teacher candidates learn to consider learning environments, cultural, linguistic and socioeconomic factors in addition to student abilities in their selection and use of strategies. Admission to the Teacher Education Program. Offered fall.

EDU 450. MEETING SPECIAL LEARNING NEEDS OF CHILDREN 3 sh

This course prepares teachers for using individualized programs for students with special learning needs. Students survey the literature related to instruction of these students, including assessing individual needs and modes of learning with implications for mainstreamed classroom teaching. Secondary Education majors only. Admission to the Teacher Education Program. Offered fall and spring.

EDU 451. TEACHING DIVERSE LEARNERS**4 sh**

This course is designed to prepare elementary and middle grades teacher candidates to work effectively in inclusive classrooms. The course is comprised of four modules: I. The Ideas in IDEA, which introduces candidates to the historical and legal factors that have contributed to practices governing students with special needs; II. The Differentiation of Instruction, which acquaints candidates with a means for providing flexible and equitable instruction and assessment; III. The Management of Behavior, which encourages candidates to analyze the causes of behavior and provide systems of positive behavioral support; IV. Respectful Collaboration, which promotes linkages with families, colleagues and community agencies to enhance the educational experiences of diverse learners. Elementary and middle grades majors only. Co-requisite: EDU 311, 312, 411 or 412, admission to the Teacher Education Program.

EDU 480. STUDENT TEACHING SEMINAR**2 sh**

This seminar focuses on classroom management strategies, legal aspects of teaching, the teacher as decision maker and creating a professional development plan. Must be taken concurrently with EDU 481. Offered fall and spring. Secondary majors only.

EDU 481. SUPERVISED OBSERVATION AND STUDENT TEACHING**10 sh**

Students experience the classroom full time for one semester, with periodic conferences with the university supervisor(s) and classroom teacher(s). The student becomes acquainted with the duties and observes the methods and activities of an experienced teacher, with gradual induction into full-time teaching responsibilities. Corequisite: EDU 480. Prerequisites: EDU 211 and grade of C or better in appropriate methods course(s). Offered fall and spring.

EDU 482. CRITICAL ISSUES IN EDUCATION: CAPSTONE SEMINAR I**2 sh**

This course is an inquiry-based capstone course that explores social, historical, political and philosophical issues that impact K-12 education nationally and internationally. Special emphasis is placed in diversity and equality issues, leadership, community service and ethical advocacy. Students are involved in a leadership/diversity project that involves local or international service learning or scholarly inquiry. Prerequisite: Admission to Teacher Education Program. This course is to be taken the semester prior to student teaching. Elementary, Middle Grades and Special Education majors only.

EDU 483. REFLECTIVE ANALYSIS OF PRACTICE: CAPSTONE SEMINAR II**2 sh**

This course is an inquiry-based capstone seminar that is taken concurrently with student teaching. It is designed to strengthen the professional skills of reflection as related to instructional practice, assessment of student learning and analysis of personal philosophy. Emphasis is placed on leadership, ethical advocacy and family-community relationships. Corequisite: EDU 481. Elementary, Middle Grades and Special Education majors only.

EDU 499. RESEARCH**1-4 sh**

Students engage in undergraduate research under the direction of an education department faculty member. Maximum of eight semester hours total credit. Prerequisites: eligibility as determined by the undergraduate research guidelines of Elon University and approval by the department.

Engineering

Director: Associate Professor D'Amato

Assistant Professor: Hargrove-Leak

Engineers have the opportunity to be of profound service to humanity. Engineering means problem solving. Through the application of mathematics and science, an engineer may be solving problems dealing with energy, space exploration, environmental issues, product manufacturing, construction or any number of interesting areas of study. Possible engineering disciplines include aerospace engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, environmental engineering, industrial engineering, materials science engineering, mechanical engineering, nuclear engineering and textile engineering.

The unique dual-degree engineering programs at Elon support students in working toward two degrees: one from Elon and one from an engineering university. Elon currently has affiliations with North Carolina State University, Georgia Tech, Virginia Tech, Columbia University, Washington University in St. Louis and North Carolina A&T State University. The student will complete three years at Elon. These years will include a full array of science, mathematics, computer science and general studies courses along with their discipline-specific courses. Also included will be foundational engineering courses every fall and spring taught by engineering faculty. After finishing these three years at Elon and also satisfying the entry requirements of the affiliate engineering university, the student will transfer to this engineering institution, normally for two more years. Upon completion of these years of study, a student will receive either a B.S. degree from Elon in Engineering Physics, Environmental Studies/Environmental Engineering or Engineering Mathematics or an A.B. degree in Chemistry/Chemical Engineering or Computer Science/Engineering. Students will also receive a B.S. degree from the engineering school in an engineering area of choice. Students must complete Elon's General Studies program requirements, the engineering core and one of the five options listed below.

All dual-degree engineering programs require the following core courses:

CHM 111	General Chemistry I	3 sh
CHM 113	General Chemistry I Lab	1 sh
CHM 112	General Chemistry II	3 sh
CHM 114	General Chemistry II Lab	1 sh
PHY 113	General Physics I with Calculus w/lab	4 sh
PHY 114	General Physics II with Calculus w/lab	4 sh
MTH 121	Calculus and Analytic Geometry I	4 sh
MTH 221	Calculus and Analytic Geometry II	4 sh
MTH 321	Calculus and Analytic Geometry III	4 sh
MTH 421	Differential Equations	4 sh
CSC 130	Introduction to Computer Science	4 sh
TOTAL		36 sh

Engineering Foundations

EGR 101	Introduction to Engineering	1 sh
EGR 102	Introduction to Engineering Graphics and Design	2 sh
EGR 206	Engineering Mechanics - Statics	3 sh

EGR 208	Engineering Mechanics - Dynamics	3 sh
EGR/PHY 211	Circuit Analysis	3 sh
EGR/PHY 212	Circuit Analysis Lab	1 sh
EGR/PHY 310	Engineering Thermodynamics	4 sh
TOTAL		17 sh

The student will select one of the following five options:

I. Engineering Physics

PHY 213	Introduction to Modern Physics	4 sh
PHY 311	Classical Electrodynamics	4 sh
PHY 397-98	Physics Lab/Seminar	4 sh
Eight semester hours of Physics at the 300-400 level (excluding PHY 305)		8 sh
TOTAL		20 sh

II. Engineering Mathematics

MTH 231	Mathematical Reasoning	4 sh
MTH 311	Linear Algebra	4 sh
MTH 312	Abstract Algebra	4 sh
MTH 341	Probability Theory and Statistics	4 sh
MTH 415	Numerical Analysis	4 sh
CSC 230	Algorithm Development	4 sh
TOTAL		24 sh

III. Computer Science/Engineering

MTH 206	Discrete Structures	4 sh or
MTH 231	Mathematical Reasoning	4 sh
CSC 230	Algorithm Development	4 sh
CSC 331	Algorithm Analysis	4 sh
CSC 342	Computer Organization and Architecture	4 sh
CSC 351	Theory of Computation	4 sh
CSC 441	Operating Systems/Networking	4 sh

In addition, one upper-level course in programming languages at another institution (if electrical or computer engineering). For another engineering degree, an additional upper level CSC course is required.

TOTAL		28 sh
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IV. Chemistry/Chemical Engineering

CHM 125	The Chemical Literature	1 sh
CHM 205	Inorganic Chemistry I	4 sh
CHM 211	Organic Chemistry I	3 sh
CHM 213	Organic Chemistry Lab I	1 sh
CHM 212	Organic Chemistry II	3 sh
CHM 214	Organic Chemistry Lab II	1 sh
CHM 311	Quantitative Analysis	4 sh

CHM 332	Physical Chemistry I	4 sh
CHM 461	Senior Seminar	1 sh
TOTAL		22 sh

V. Environmental Studies/Environmental Engineering

POL 224	Environmental Policy and Law	4 sh
REL 348	Environmental Ethics	4 sh
ENS 461	Senior Seminar	4 sh
CHM 211/213	Organic Chemistry I w/Lab	4 sh
BIO 112/114	Intro Population Biology w/Lab	4 sh
BIO 452	General Ecology	4 sh
ENS 215	Organismal Biology and Field Techniques	4 sh
ENS 381	Internship (during summer)	2-4 sh
CE 323	Earth Systems Chemistry at engineering school	4 sh
CE 373	Fundamentals of Env. Engineering at engineering school	3 sh
ST 370	Probability and Statistics for Engineers at engineering school	3 sh
TOTAL		40-42 sh

EGR 101. INTRODUCTION TO ENGINEERING 1 sh

This course provides general information on engineering disciplines, common engineering practices, the engineering profession and history, engineering education, engineering design, engineering ethics and engineering opportunities from the instructor and/or invited speakers. Preliminary work on a design project will be undertaken by student teams. Offered fall.

EGR 102. INTRODUCTION TO ENGINEERING GRAPHICS AND DESIGN 2 sh

This course introduces the student to graphics as used by engineers. Both hand sketching and computer graphics will develop the student's ability to communicate graphically. This course also investigates the engineering design process. Students will work in teams to acquire a client and design a solution to meet the needs enumerated by this client. This design project is a continuation of design work done in EGR 101. Each aspect of the design process will be discussed. Several exercises will attempt to develop the student's creativity, clarity and focus of thought. The semester will end with a full presentation of each team's design work which will incorporate their newly acquired graphics ability. Offered spring.

EGR 206. ENGINEERING MECHANICS - STATICS 3 sh

This course is designed to introduce students to the effects of forces on bodies in static equilibrium and to familiarize them with mathematical techniques for finding reactive forces in bodies, frames, mechanics and trusses. Concepts covered include forces, moments, couples, equilibrium of rigid bodies, centroids, moments of inertia and friction resistance. Prerequisite: PHY 113. Corequisite: MTH 221. Offered fall.

EGR 208. ENGINEERING MECHANICS - DYNAMICS 3 sh

Kinematics and kinetics of particles in rectangular, cylindrical and curvilinear coordinate systems; energy and momentum methods for particles; kinetics of systems of particles; kinematics and kinetics of rigid bodies in two and three dimensions; and motion relative to rotating coordinate systems are studied. Prerequisites: EGR 206 and MTH 221. Corequisite: MTH 321. Offered spring.

EGR 211. CIRCUIT ANALYSIS**3 sh**

This course is an introduction to the theory, analysis and design of electric circuits. Studies include circuit parameters and elements: voltage, current, power, energy, resistance, capacitance, inductance. Also included is the application of Kirchhoff's laws, techniques of circuit analysis, the op-amp, the responses of RL, RC and RLC circuits, an introduction to sinusoidal steady-state analysis, Laplace transforms and Fourier series. Prerequisites: MTH 421 and PHY 114. Corequisite: EGR/PHY 212. Offered spring.

EGR 212. CIRCUIT ANALYSIS LAB**1 sh**

This course involves laboratory application of concepts and principles discussed in EGR 211. Corequisite: EGR/PHY 211. Offered spring.

EGR 310. ENGINEERING THERMODYNAMICS**4 sh**

This course introduces the concept of energy and the laws governing the transfers and transformations of energy. Study emphasizes thermodynamic properties and First and Second Law analysis of systems and control volumes. Integration of these concepts into the analysis of basic power cycles is introduced. Prerequisites: MTH 421 and PHY 114. Offered fall.

EGR 381. INTERNSHIP IN ENGINEERING**1-4 sh**

The internship provides advanced work experiences in some aspect of engineering. It is offered on an individual basis, under the guidance of the engineering program director, when suitable opportunities can be arranged. It will typically be taken in the summer of the sophomore year. This experience will broaden the practical work experience of the student and enhance his/her classroom abilities. Prerequisite: permission of the department. Offered summer.

English

Chair, Department of English: Professor Lyday-Lee

Professors: Angyal, Blake, Bland, Boyle, Braye, Gill, Haskell, Warman

Associate Professors: Cassebaum, Gordon, Mackay, Peeples, Schwind

Assistant Professors: Hairston, Kapper, Kircher, Layne, Myers, Nickoson-Massey, Perry, Rosinski

Lecturer: Holmes, Strickland

The field of English involves the theoretical study of literature, language and writing, as well as the practice of literary criticism and analysis, creative writing and other kinds of writing. The English department provides a balanced curriculum that includes all these elements. A group of five core courses in literature, language study and writing beyond the freshman level ensures that English majors have experience in the three principal areas of the discipline. In addition to the common core, the English curriculum also encourages majors to follow their own talents and interests by requiring one of four distinct concentrations: literature, professional writing and rhetoric, creative writing or English teacher licensure. Double concentrations in the major or minors in literature and creative writing, along with interdisciplinary minors in professional writing and multimedia authoring, are additional options.

A NOTE ON THE GENERAL STUDIES LITERATURE COURSE REQUIREMENT

With the exception of film studies courses, ENG 200 and department courses in the 220-279 and 320-379 range normally fulfill the General Studies literature requirement in Studies in Arts and Sciences.

English department courses in the 201-219 and 301-319 range (i.e., courses in language study, writing and creative writing) do NOT normally fulfill that requirement.