

## Human Services

Chair, Department of Human Services: Professor Kiser  
 Assistant Professors: Bailey, Fair, Langston  
 Adjunct Instructor: Gumm

The Human Services major prepares students to work as practitioners in a variety of professional service settings such as social services, mental health, family services, corrections, gerontology, child care, youth programs, group homes and many others. The Human Services curriculum guides the student through gaining the knowledge, skills and experience necessary to work effectively with a variety of populations.

Students engage in extensive fieldwork in Human Service agencies as part of their studies. Through the classroom and field components of the major, students examine critically a range of human and societal problems and the programs and services designed to address them, acquiring an understanding of the societal, cultural and personal variables which contribute to the development of human problems and to their solution.

The Human Services major draws upon knowledge in the social sciences, especially psychology and sociology, and emphasizes the application of this knowledge to the improvement of human life and society. In order to apply this knowledge effectively, students develop a variety of skills including those involved in oral and written communication, problem solving, developing professional helping relationships, organization and administration.

A major in Human Services requires the following courses:

HUS 111	Introduction to Human Services	4 sh
PSY 111	General Psychology	4 sh
SOC 111	Introductory Sociology	4 sh
HUS 212	Counseling Individuals & Families	4 sh
HUS 213	Counseling Groups & Communities	4 sh
SSC 285	Research Methods	4 sh
HUS 381	Practicum in Human Services	4 sh
HUS 411	Administration of Human Service Agencies	4 sh
HUS 412	Professional Communication	4 sh
HUS 461	Senior Seminar	4 sh
HUS 481	Internship in Human Services	8 sh
Eight semester hours selected from four hour Human Services courses		8 sh
<b>TOTAL</b>		<b>56 sh</b>

Prior to taking HUS 381 students must be approved by the Human Services department. A minimum grade point average of 2.1 is required to be eligible for Practicum.

Most of the other major requirements must be completed prior to taking HUS481. Students who enroll in HUS 481 may not take any courses other than the prescribed block courses. A minimum grade point average of 2.2 is required to be eligible for Internship. Applications for both Practicum and Internship must be completed by May 1 in order to enroll in these courses the following year. Applications are available in the office of the department chair.

**A minor in Human Services** requires the following courses:

HUS 111	Introduction to Human Services	4 sh
HUS 381	Practicum in Human Services	4 sh
One course from the following:		4 sh
PSY 111	General Psychology	
SOC 111	Introductory Sociology	
One course from the following:		4 sh
HUS 212	Counseling Individuals & Families	
HUS 213	Counseling Groups & Communities	
Four semester hours Human Services course		4 sh
<b>TOTAL</b>		<b>20 sh</b>

**HUS 101. LEADERSHIP** 2 sh

This course combines study and practical experience to increase knowledge and skills in leadership development and is appropriate for both emerging and established leaders. (No credit toward Human Services major.)

**HUS 102. PEER COUNSELING** 2 sh

In this study/practical experience course students develop skills in interpersonal relations, gain an understanding of personal and community problems and learn to view the residence hall as a community. Required of all Resident Assistants. (No credit toward Human Services major)

**HUS 111. INTRODUCTION TO HUMAN SERVICES/ELR** 4 sh

This course explores the history and values of the Human Services profession, examines theoretical approaches to Human Services work, provides an overview of the Human Services system in the United States and acquaints students with the roles and responsibilities of Human Services professionals. A minimum of 40 hours of field work in an approved Human Services setting is required. Meets ELR. Offered fall and spring.

**HUS 212. COUNSELING INDIVIDUALS AND FAMILIES** 4 sh

This course examines various theories and methods used in helping families and individuals resolve problems. Students gain skills in applying these theories and methods through use of case studies, role playing, simulations and other experimental methods. Prerequisite: HUS 111 or PSY 111.

**HUS 213. COUNSELING GROUPS AND COMMUNITIES** 4 sh

Students will examine the role and history of working with groups and communities in the Human Services system. Theories and methods used in working with groups and communities will also be studied. Topics addressed in the course include group dynamics and group development as well as leadership models and approaches. Students will gain skills in working with groups and communities through the use of case studies, simulations, role playing and other experimental methods. Prerequisite: HUS 111 or SOC 111.

- HUS 311. POVERTY AND SOCIAL WELFARE POLICY** 4 sh  
 Poverty is a core issue which underlies many social and human problems in the United States. This course will examine the social welfare system in the United States and the history and process of policy making in the United States around this issue. Alternative approaches to understanding and resolving the problem of poverty will also be explored. Emphasis will be placed on the role of the Human Services worker in policy making processes.
- HUS 312. HUMAN BEHAVIOR AND THE SOCIAL ENVIRONMENT** 4 sh  
 This course explores theoretical and empirical knowledge of human behavior and the social environment as a foundation for Human Services delivery to individuals, families, groups and communities. Emphasis is placed on life transitions and on the diverse social conditions and contexts that may support or inhibit human development and functioning. Factors such as race and ethnicity, gender, sexual orientation, disability, socioeconomic status and rural/urban differences are explored as they impact human behavior and human development. The course focuses on the application of this knowledge through the use of case studies and other methods.
- HUS 321. GROUP DYNAMICS AND LEADERSHIP** 4 sh  
 Students explore group dynamics, group structure, leadership and the group worker role and are encouraged to examine and refine their own group communication and leadership skills. Prerequisite: HUS 213.
- HUS 324. PERSPECTIVES AND ISSUES IN AGING** 4 sh  
 This introduction to gerontology explores the biological, sociological and psychological aspects of aging and presents cultural, economic and political issues related to aging such as ageism, retirement, living environments and the social security and health care movements.
- HUS 326. SPECIAL POPULATIONS IN HUMAN SERVICES** 4 sh  
 This course explores specific populations of Human Services clients such as persons with disabilities, children at risk, persons with HIV/AIDS, persons with terminal illnesses, etc. Needs of the particular populations under study are explored as well as programs, services and innovations in service provision. Specific populations studied vary based on current trends and issues in the field.
- HUS 331. PRINCIPLES OF COUNSELING** 4 sh  
 This course focuses on the theories and methods used in counseling individuals. The course is designed for persons who will work in the helping professions and includes role playing, videotaping and working with case material. Prerequisite: HUS 212.
- HUS 341. FAMILY COUNSELING** 4 sh  
 This course focuses on family assessment and intervention using systems theory as the primary conceptual model and emphasizes the use of family counseling concepts to understand family dynamics and relationships. Students make extensive use of case material and role play to apply theory to practice. Prerequisite: HUS 212.
- HUS 359. CRIMINAL JUSTICE** 4 sh  
 The field of Criminal Justice is examined in terms of three interdependent subsystems: law enforcement, corrections and the courts. Both theoretical models and practical applications will be used to encourage a broad understanding of the criminal justice system as a whole.
- HUS 361. SUBSTANCE ABUSE: ISSUES IN TREATMENT** 4 sh  
 Students become familiar with the contemporary theories and knowledge base concerning substance abuse. The course examines therapeutic issues involved in the treatment of substance-abusing persons and their families and reviews various types of treatment interventions. The course addresses innovative treatment modalities as well as the

lack of sufficient and appropriate rehabilitative services to meet the needs of various special populations.

**HUS 369. JUVENILE JUSTICE** 4 sh

This course examines the juvenile justice system, including a number of agencies which have jurisdiction over a juvenile from birth to the age of majority. System components included in this course are the social services, law enforcement, juvenile court and corrections. Ancillary and supportive services such as mental health, school systems, child advocacy groups and guardian ad litem programs are also explored.

**HUS 371-3. TOPICS IN HUMAN SERVICES** 4 sh

Students examine special topics in Human Services, such as developmental disabilities, mental health issues and services, family violence, etc.

**HUS 381. PRACTICUM IN HUMAN SERVICES** 4 sh

Students gain field experience in a Human Services organization observing and learning the roles, tasks, skills and methods of Human Services professionals in the assigned setting and becoming familiar with administrative processes in the organization (full-time for at least three weeks). Conferences with the supervising faculty member and the agency supervisor, assigned readings and journal writing provide further learning opportunities. Prerequisites: HUS 111, 2.1 GPA, status as a declared Human Services major or minor, and approval of application for practicum. Offered winter.

**HUS 411. ADMINISTRATION OF HUMAN SERVICES AGENCIES** 4 sh

This overview of principles and techniques of leadership and management in Human Services agencies exposes students to planning, organizing, staffing, and financing a project or an agency and working with a Board of Directors and the community. (Senior Block Course) Prerequisites: HUS 111, 381. Offered fall and spring.

**HUS 412. PROFESSIONAL COMMUNICATION** 4 sh

This course provides an in-depth study of interpersonal communication skills and writing skills essential to the Human Services worker, emphasizing the further development of written and oral communication skills. Special emphasis in this course is placed on cross-cultural communications within helping relationships. (Senior Block Course) Prerequisites: HUS 111, 381. Offered fall and spring.

**HUS 461. SENIOR SEMINAR** 4 sh

In this capstone course, students analyze their personal and professional development during their university experience and are required to research, write and present a scholarly paper. Prerequisites: Senior majors, SSC 285. Offered fall and spring.

**HUS 481. INTERNSHIP IN HUMAN SERVICES** 8 sh

Students participate in full-time, field-based experience in a Human Services agency for eight weeks, observing and practicing the roles, tasks and skills of Human Services professionals under the supervision of a faculty member and an agency supervisor. Conferences with both supervisors and assigned papers and readings enhance learning as the student makes the transition into full-time professional responsibility. Prerequisites: 2.2 GPA, senior majors, HUS 381, 411 and 412. Offered fall and spring.

**HUS 499. INDEPENDENT RESEARCH IN HUMAN STUDIES** -8 sh

Students engage in independent research projects related to the field of Human Services. Research is conducted under the supervision of Human Services faculty. Prerequisites: junior or senior status and departmental approval, SSC 285.

## ***Independent Major***

Coordinator: Associate Professor Braye, Director of General Studies

Students with intellectual and professional interests which cannot be met by other major and minor programs may create an independent major. Independent majors are interdisciplinary in nature and are suitable for highly motivated students willing to assume exceptional responsibility for their own education. Students must have a GPA of at least 3.0 and no more than 66 completed semester hours when applying. Advice from the Director of General Studies may be helpful in designing an independent major. Details concerning final approval for an independent major may be obtained in the office of the director of General Studies.

**An Independent Major** requires the following:

1. An Application for Independent Major, available from the Director of General Studies, must be completed before the student has earned 66 semester hours. This application also outlines the procedure to be followed for designing and declaring the Independent Major.
2. An interdisciplinary committee of three professors, including one designated as the principle advisor, must be assembled.
3. A curriculum must be designed with help from the committee. That curriculum must include:

Completion of the General Studies Requirements

An Independent Major includes:

- a minimum of 48 semester hours
- a minimum of 28 semester hours at the 300-400 level
- a capstone seminar
- a capstone interdisciplinary project
- a plan for assessing the completed major

The independent major courses must come from at least three departments, and no more than half may be from any one department. Upper-level courses taken to satisfy the requirements of an independent major will also satisfy the eight-hour advanced studies requirement when the independent major includes at least 12 hours of upper-level courses in three departments and at least two of the four areas listed under Liberal Studies. Students completing an independent major which designates an advanced GST Seminar as the capstone seminar must take another GST Seminar to fulfill the General Studies requirements.

No more than four semester hours of independent study may be included. This will usually be used for completion of the capstone interdisciplinary project.

## ***International Studies***

Coordinator: Professor Digre

Program Faculty: Professors: Arcaro, C. Brumbaugh, W. Rich

Associate Professors: Chakrabarti, Romer, Roselle

Assistant Professors: Chapman, J. Das

The International Studies major provides students with an interdisciplinary program through which they can gain a broad knowledge of international affairs as well as expertise on one of the world's regions. Study abroad experiences and foreign language study form integral parts of the program. Students, with the support of their advisers, have considerable freedom in designing their own program of study.

The major may form an attractive double major for students from a variety of disciplines, such as political science, history and foreign languages. It also might be profitably combined with a business minor. It should provide an educational background for those seeking international affairs careers in government, nongovernmental organizations (development/humanitarian), travel and business.

Students are required to include a study abroad experience in their programs. Students should choose an area relevant to their regional concentrations (see below). International (foreign) students at Elon satisfy this requirement due to the inherent cross-cultural character of their college education. Under specified provisions of the program, up to 16 credit hours of foreign study can be counted toward the major.

**A major in International Studies** requires 44 semester hours. These requirements are specified as follows:

### **Foundation Courses** 8 sh

POL/INT 141 International Relations

HST/INT 221 World in the Twentieth Century

### **Foreign Language Study** 8 sh

Students shall take at least eight hours of study in one modern foreign language. Students must demonstrate foreign language proficiency by successful completion of a foreign language course at the 310 level (or its equivalent). Students should choose a language relevant to their regional concentrations.

### **Global Studies** 12 sh

Students must take courses from at least two of the following five areas. Appropriate special topics courses, as approved by the program coordinator, may be included in the global studies category.

#### ***Politics and Economics***

BUS 416 Global Marketing

BUS 430 International Business Management

ECO 201 Principles of Economics /INT  
(taught from an international perspective)

ECO 314 International Trade and Finance

POL 114 Model United Nations

POL 261 Comparative Politics

POL 342 U.S. Foreign Policy

- POL 343 International Law and Organizations
- POL 344 International Environmental Policy
- POL 345 International Terrorism
- POL 359 Political Communication

***History and Geography***

- GEO 131 The World's Regions
- HST 112 Europe and the Mediterranean World Since 1660
- GEO 310 Development and the Environment in Latin America, Africa and South Asia

***Literature and Foreign Language***

- ENG 231 World Literature
- ENG 331 Advanced World Literature
- Foreign languages 310, 321, 322 relevant to student's regional concentration

***Society and Culture***

- PSY 366 Psychology in Cultural Context
- REL 121 World Religions
- SOC 121 Cross Cultural Encounters
- SOC 212 Cultural Anthropology
- SOC 322 Ethnography
- SOC 328 Culture and the Modern World

***Study Abroad***

Students who have study abroad course credit that cannot be counted under Foreign Language Study or regional concentration may count four semester hours under this category.

**Regional Concentration**

12 sh

At least three courses taken on one geographic region. Courses should be chosen from at least two disciplines. Study abroad and special topics courses, as approved by the program coordinator, may be included under the regional concentration.

Approved courses for regional concentrations in Africa, the Asian/Pacific area and Europe are listed below. In addition, special area concentrations designed by student and adviser may be approved by the program coordinator.

***Africa***

- ART 341 African Art
- ENG 338 The African Experience in Literature
- FRE 362 Francophone Cultures Outside France
- GEO 320 Geography of Africa
- HST 313 Modern Africa
- HST 314 A History of Southern Africa
- JCM 346 African Film
- POL 367 Politics of Africa

***Asian/Pacific***

- ENG 337 Asian Literature of Social Change
- ENS 310 Environmental Issues of Southeast Asia
- HST 320 China, Japan and the Pacific Century

PHL 352	Eastern Philosophy
POL 363	Politics of Asia
POL 365	Politics of Eurasia
REL 353	Buddhism
REL 356	Hinduism
SOC 329	Peoples and Cultures of Southeast Asia
SOC 344	Sociocultural Change in India

**Europe**

ENG 222	British Literature II
ENG 325	Romanticism
ENG 326	Realism and the Later 19th Century
ENG 356	The Novel: British Women Writers
FRE 332	Introduction to French Literature II
FRE 361	French Civilization
HST 316	The History of Imperial Russia to 1917
HST 317	Russia and 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 the Present
HST 338	Germany, Democracy and Hitler, 1914-1945
HST 339	A History of the Holocaust
PHL 433	Marx, Darwin and Freud
POL 364	Politics of Europe
POL 365	Politics of Eurasia
POL 428	Comparative Public Policy
SPN 332	Spanish Literature II
SPN 361	Spanish Civilization

**Senior Seminar**

INT 461	Senior Seminar in International Studies	4 sh
<b>TOTAL</b>		<b>44 sh</b>

**A minor in International Studies** requires the following:

POL/INT 141	International Relations	4 sh
HST/INT 221	The World in the Twentieth Century	4 sh

Twelve semester hours based on the program of study for the international studies major 12 sh

Choose one of the following options:

- a. A Regional Concentration
- b. The Global Studies Field
- c. Foreign language study (8 semester hours) plus one elective selected from courses approved for the major

<b>TOTAL</b>	<b>20 sh</b>
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Students are strongly encouraged to include a study abroad.

- INT 221. THE WORLD IN THE TWENTIETH CENTURY** 4 sh  
 (Same course as HST 221. See HST 221 for description.)
- INT 141. INTERNATIONAL RELATIONS** 4 sh  
 (Same course as POL 141. See POL 141 for description.)
- INT 461. SENIOR SEMINAR** 4 sh  
 The senior seminar is a capstone experience designed for majors. This course offers practical experience in researching, writing, and presenting a senior thesis which builds on previous work in global studies and the regional concentration.
- INT 481. INTERNSHIP IN INTERNATIONAL STUDIES** 2-4 sh  
 Designed to provide students with opportunities to work in professional positions related to international affairs. Internships are intended to provide practical experience for future careers in government, nongovernmental organizations (development/ humanitarian) and business. They may be arranged both in the United States and overseas. Prerequisite: Permission of program coordinator.
- INT 491. INDEPENDENT STUDY** 2-4 sh  
 Open to junior or senior majors with permission of instructor.
- INT 499. RESEARCH** 1-4 sh  
 Designed to allow students the opportunity to engage in an empirical or theoretical study in collaboration with a faculty member. Research projects may include reviewing relevant literature, developing a research design, data collection, analysis and presentation of findings. This may also include a presentation to the International Studies faculty and/or a SURF presentation. Prerequisite: permission of program coordinator.

## *Journalism and Communications*

Chair, School of Journalism and Communications: Associate Professor Hamm

Professor: P. Parsons

Associate Professors: Copeland, Costello, Grady, B. Lee, Padgett

Assistant Professors: J. Anderson, Barnett, Book, Duvall, Frontani, Fulkerson, Gibson, Gisclair, W. Johnson, T. Nelson

Students who choose majors in journalism/communications prepare for exciting careers in newspapers, magazines, radio, television, cable, public relations, advertising, corporate relations and film. Separate majors are offered in journalism and communications (offering emphases in broadcast communications, corporate communications and film ).

Majors complete courses offering study in the theory, history, law and ethics of communications, as well as hands-on experience in modern computer labs, state-of-the-art television studios and well-equipped audio and video editing labs.

Students complement in-class work with involvement in campus media including the campus newspaper, *The Pendulum* and Pendulum Online, WSOE radio and Elon Student Television (ESTV).

*Students completing a major in the School of Communications must have at least 80 credit hours outside the School of Communications, with 65 or more of those hours in the liberal arts and sciences.*

All majors are required to earn at least a "C" in JCM 215, Introduction to Communications as well as having a passing score on the Media Mechanics Exam to enroll in JCM 218. All majors are required to earn at least a "C" in JCM 218, Writing and Information Gathering, before advancing to courses requiring JCM 218 as a prerequisite.

**A major in Journalism** requires the following courses:

JCM 215	Introduction to Journalism and Communications	4 sh
JCM 218	Writing and Information Gathering	4 sh
JCM 225	Reporting and Newswriting	4 sh
JCM 325	Editing and Layout	4 sh
JCM 425	Advanced Reporting	4 sh
JCM 315	Media and Society	4 sh
JCM 360	Media History	4 sh
JCM 465	Media Law and Ethics	4 sh
JCM 495	Senior Seminar	4 sh
Twelve semester hours of JCM elective at the 200-400 level (no more than four semester hours at the 200 level)		12 sh
<b>TOTAL</b>		<b>48 sh</b>

**A major in Communications with Broadcast Emphasis** requires the following courses:

JCM 211	Public and Presentational Speaking	4 sh or
JCM 245	Broadcast Performance	4 sh
JCM 215	Introduction to Journalism and Communications	4 sh
JCM 218	Writing and Information Gathering	4 sh
JCM 240	Television Production	4 sh
JCM 335	Writing for Electronic Media	4 sh
JCM 315	Media and Society	4 sh
JCM 360	Media History	4 sh
JCM 465	Media Law and Ethics	4 sh
JCM 495	Senior Seminar	4 sh
Twelve semester hours of JCM elective at the 200-400 level (no more than four semester hours at the 200 level)		12 sh
<b>TOTAL</b>		<b>48 sh</b>

**A major in Communications with Corporate Emphasis** requires the following courses:

JCM 211	Public and Presentational Speaking	4 sh
JCM 215	Introduction to Journalism and Communications	4 sh
JCM 218	Writing and Information Gathering	4 sh
JCM 318	Organizational Communications	4 sh
JCM 333	Public Relations	4 sh
JCM 240	Television Production	4 sh
JCM 327	Corporate Publishing	4 sh or
JCM 352	Corporate Video	4 sh
JCM 465	Media Law and Ethics	4 sh
JCM 495	Senior Seminar	4 sh
Eight semester hours of JCM elective at the 200-400 level		8 sh
Eight semester hours of 200-400 level electives in JCM or		

from the disciplines of the Love School of Business. At least four semester hours must be in BUS, ECO or ACC 8 sh

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**TOTAL** 52 sh

**A major in Communications with Film Emphasis** requires the following courses:

JCM 215	Introduction to Journalism and Communications	4 sh
JCM 218	Writing and Information Gathering	4 sh
JCM 240	Television Production	4 sh
JCM 261	Development of the Cinema	4 sh
JCM 495	Senior Seminar	4 sh

***Film History and Theory***

Twelve semester hours selected from the following: 12 sh

JCM 337	The Documentary
JCM 346	African Film
JCM 349	The South in Film
JCM 361/ENG 361	Gender Issues in Cinema
JCM 362/ENG 362	Film Criticism
JCM 364	Movies about Media
JCM 390	Film Censorship
JCM 463	The Auteur Director (4-8 sh)

***Film Production***

Eight semester hours selected from the following: 8 sh

JCM 230	Audio Production
ENG 314	The Screenplay or
JCM 344	Screenwriting
JCM 355	Advanced Video Production
JCM 358	Film Production
JCM 384	Internship in Film Production (2-4 sh)

The following classes may apply as either History/Theory or Production:

JCM 265	Film Aesthetics and Design	4 sh
JCM 320	The Art of Film and Video Editing	4 sh
JCM 491	Independent Study in Film	1-4 sh

Electives 8 sh

Select an additional eight hours from any of the areas above, from other JCM courses and Independent Study. Additional transfer credits may not be applied in this category.

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**TOTAL** 48 sh

**A minor in Journalism/Communications** requires the following courses:

JCM 211	Public and Presentational Speaking	4 sh
JCM 215	Introduction to Communications	4 sh
JCM 218	Writing and Information Gathering	4 sh
Four semester hours of JCM elective at the 200-400 level		4 sh
Eight semester hours of JCM elective at the 300-400 level		8 sh

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**TOTAL** 24 sh



- JCM 230. AUDIO PRODUCTION** 4 sh  
 This course introduces audio as one element of mass communications. Course work familiarizes students with basic production techniques applicable in radio, television and film. Students also learn basic studio operation, producing, writing and performing, with a focus on experience through exercises and production assignments. Offered spring.
- JCM 240. TELEVISION PRODUCTION** 4 sh  
 This introduction to basic principles, techniques and technologies of television production emphasizes video while using audio to enhance the visual image. Students learn through field news and production assignments, editing and studio production. Offered fall and spring.
- JCM 245. BROADCAST PERFORMANCE** 4 sh  
 To help students become more effective communicators and performers in electronic media, this course emphasizes communication of ideas on radio and television, particularly vocal and visual presentation, voice and diction, pronunciation, appearance, gestures and movement. Prerequisite: JCM 240. Offered fall.
- JCM 251. COMMUNICATIONS STUDIES ABROAD** 4 sh
- JCM 261. DEVELOPMENT OF CINEMA** 4 sh  
 To gain an appreciation of the historical development of film as an art form, students view significant films and study the contributions of important directors. Offered fall and spring
- JCM 265. FILM AESTHETICS AND DESIGN** 4 sh  
 This course examines the artistic aspects of film and television, including production design, camera composition, color, motion, editing, sound effects and music. Clips of films will be used as examples. Students will be evaluated on the basis of a class notebook and short production exercises.
- JCM 310. INTERPERSONAL COMMUNICATION** 2 sh  
 The fundamental assumption of interpersonal communication is that skills can be acquired, changed, developed and/or improved that will enhance effectiveness in creating and sustaining interpersonal relationships. Topics include self-concept, perception, listening and conversation skills and conflict resolution.
- JCM 312. SMALL GROUP COMMUNICATIONS** 2 sh  
 This course provides an understanding of small group processes in secondary groups such as committees, task forces, quality circles, work groups, boards and teams. Through discussion, application and practice, students will develop skills likely to serve them in future work and community life.
- JCM 315. MEDIA AND SOCIETY** 4 sh  
 This study of the role of mass communications media in society examines the structure, function and interaction of mass media, with consideration to media constraints and effects on society. Prerequisite: JCM 215. Offered fall and spring.
- JCM 318. ORGANIZATIONAL COMMUNICATIONS** 4 sh  
 As an introduction to process and patterns of communications within organizations, this course covers techniques of information dissemination and the application of various media and methods. Offered fall and spring.
- JCM 320. THE ART OF FILM AND VIDEO EDITING** 4 sh  
 This course is an in-depth analysis of film editing including historical perspective and study of the theory of editing. Prerequisite: JCM 240.
- JCM 325. EDITING AND LAYOUT** 4 sh  
 Students study and practice in design and makeup of the modern newspaper, including copy editing, headline writing, scaling and cropping of photographs, caption writing,

page layout and use of art and graphics. Prerequisite: JCM 218. Offered spring.

- JCM 326. FEATURE WRITING** 4 sh  
 The study of basic types of feature articles for newspapers and magazines emphasizes applying techniques of fiction (narrative, characterization, dialogue and scenes) to non-fiction writing. Prerequisite: JCM 218.
- JCM 327. CORPORATE PUBLISHING** 4 sh  
 This introduction to print and other nonbroadcast media used in corporate and institutional settings to communicate with internal and external publics includes basic design and layout using desktop publishing and presentational software and emphasizes writing for corporate purposes. Prerequisite: JCM 218. Offered fall and spring.
- JCM 328. MAGAZINE EDITING AND PRODUCTION** 4 sh  
 This course provides an examination of the magazine publishing industry from concept to marketing and promotion of the finished product. The course will examine industry trends and processes including the complete planning, editing and production cycle. Students will use desktop publishing technology to propose, design and create a finished prototype of an all new magazine.
- JCM 330. BROADCAST JOURNALISM** 4 sh  
 In this critical approach to the gathering, reporting and production of radio and television news, students discuss and evaluate news, commentary and sports features. Each student creates and produces documentary and feature programs. Prerequisites: JCM 218, 240.
- JCM 333. PRINCIPLES OF PUBLIC RELATIONS** 4 sh  
 A combined survey of intermediate level courses covering basic public relations objectives and problems, this course emphasizes research, use of communication tools and use of the media to reach various publics. Prerequisite: JCM 218. Offered fall and spring.
- JCM 335. WRITING FOR ELECTRONIC MEDIA** 4 sh  
 This general course acquaints students with the style, forms and content approaches used in writing for radio, television and other audio/visual presentations. Prerequisite: JCM 218. Offered fall and spring.
- JCM 337. THE DOCUMENTARY** 4 sh  
 Students trace the origins of the documentary, subsequent developments and its current status in this survey course.
- JCM 344. SCREENWRITING** 4 sh  
 Students will learn the techniques of writing for the cinema. Various film formats such as drama, comedy and documentary will be explored. Students will be required to write several scripts of varied lengths.
- JCM 345. ADVANCED AUDIO PRODUCTION** 4 sh  
 The advanced study of audio production techniques (editing, music and sound effects, signal processing and multi-channel production) includes announcing, commercials, news and documentary production. Prerequisites: JCM 230.
- JCM 346. AFRICAN FILM** 4 sh  
 This course examines films produced in Africa by Africans. The course will concentrate on the history of the continent and the problem of modernity versus tradition as expressed in the films. Students will be asked to study the film "language" created by African cinema.
- JCM 349. THE SOUTH IN FILM** 4 sh  
 This course investigates films about the American South produced during the twentieth century. Each film is studied from two viewpoints: the time of the film and the time of the filming. The time of the film refers to the historical setting of the production. The time of the filming places the film within the historical context of the time in which the film was produced.

- JCM 352. CORPORATE VIDEO PRODUCTION** 4 sh  
 As they learn to research, write, rewrite and produce video productions for internal and external corporate presentations, students use studio and remote production equipment to produce projects. Course work emphasizes achieving an organizations' goals through the video medium by informing, persuading and entertaining. Prerequisites: JCM 218, JCM 240. Offered spring.
- JCM 355. ADVANCED VIDEO PRODUCTION** 4 sh  
 As an advanced study of video production techniques for use in television broadcasting and other video media, this course concentrates on electronic field production and emphasizes the aesthetics of teleproduction. Students research, write and produce public service announcements, commercials and newscasts. Prerequisite: JCM 240. Offered fall.
- JCM 358. FILM PRODUCTION** 4 sh  
 This course provides students with the basic concepts of film style cinematography and editing. Students will write, shoot and edit their own productions utilizing video. Prerequisite JCM 240.
- JCM 360. MEDIA HISTORY** 4 sh  
 By examining major trends, important personalities, technological advancements and the historical impact of mass communications, students gain an understanding of how various media are interrelated and the interaction between media and society. Offered fall and spring.
- JCM 361. GENDER ISSUES IN CINEMA** 4 sh  
 (Same course as ENG 361. See ENG 361 for description.)
- JCM 362. FILM CRITICISM** 4 sh  
 (Same course as ENG 362. See ENG 362 for description.)
- JCM 363. KENNEDY ASSASSINATION AND FILM** 4 sh  
 This course will explore the details of the assassination of President John F. Kennedy and the way it has been presented in film. Special emphasis will be placed on the study of the assassination as a film genre and any residual effects on the world of motion pictures.
- JCM 364. MOVIES ABOUT MEDIA** 4 sh  
 This course examines print journalism, radio, television and motion pictures by looking at films which use these media as central subject matter. Possible films to be viewed include "Absence of Malice," "All the President's Men," "The Paper," "Pump up the Volume," "Broadcast News," "Network," "Day for Night," "The Player" and "The Stunt Man."
- JCM 365. INTRODUCTION TO INTERACTIVE MEDIA** 4 sh  
 The successes of the CD-ROM, DVD and the World Wide Web have ushered in an age of interactive communication that few could imagine only a few years earlier. This course will examine the history and structure of interactive media as well as explore its potential uses in education and communication. Using the framework of traditional theories of media and models drawn from the fields of cognition and graphic design, the class will deconstruct E-zines, games, web sites, encyclopedias and other interactive products. Finally, students will work in creative teams to construct their own interactive presentations for a client using Macromind Director, Photoshop and other industry standard software for the Macintosh.
- JCM 371. SEMINAR: SPECIAL TOPICS** 1-4 sh  
 Recent studies in seminars have included magazine journalism, propaganda and mass media, rock music and mass media.

- JCM 380. MEDIA WORKSHOP** 1-4 sh  
 In an on-campus practicum in radio or television production or broadcasting, newspaper publishing or public relations, students must arrange a learning contract with the instructor at the beginning of each term. Prerequisites: junior/senior status, permission of instructor.
- JCM 381. COMMUNICATIONS INTERNSHIP** 2-4 sh  
 An off-campus, advanced-level work experience in journalism and communications is offered on an individual basis when suitable opportunities can be arranged. Prerequisites: junior/senior status, permission of instructor. Offered fall and spring.
- JCM 387. WEB PUBLISHING AND DESIGN** 4 sh  
 Students develop an understanding of online publishing, the effective use of this vehicle as a publication tool and its impact on society. Students will experiment with diverse ways of using different media such as text, graphics, sound and video to effectively express their ideas.
- JCM 390. FILM CENSORSHIP** 4 sh  
 The focus of this course is on the evolution of film censorship in the United States. Some films that have been suppressed or censored will be viewed and discussed in class. Students will study this topic within the framework of First Amendment rights guaranteed by the U.S. Constitution.
- JCM 425. ADVANCED REPORTING** 4 sh  
 This study of sophisticated reporting techniques includes investigative reporting techniques and the editor's role in covering community news. The campus newspaper, *The Pendulum*, serves as a lab. Prerequisites: JCM 218, 225. Offered fall.
- JCM 430. TV NEWS REPORTING** 4 sh  
 In this advanced study of electronic news gathering, students analyze current examples of news and public affairs programming as well as research, write, edit and produce television news packages to be assembled into television newscasts. Prerequisites: JCM 218, 240, 330.
- JCM 460. INTERNATIONAL COMMUNICATIONS** 4 sh  
 Students examine the media systems of many countries, stressing the chief problem of communications across cultural, economic, sociological and political barriers.
- JCM 462. POLITICS IN MASS MEDIA** 4 sh  
 This course examines the effects of mass media on the American political system and traces the evolution of media impact from print journalism through radio and television.
- JCM 463. THE AUTEUR DIRECTOR** 4 sh  
 The auteur theory proposes that the greatest movies are dominated by the personal vision of one person, the director. This course examines the career of a specific director, emphasizing his/her auteur characteristics. Students view selected films from the director's filmography and prepare a paper on a particular auteur characteristic.
- JCM 465. MEDIA LAW & ETHICS** 4 sh  
 Study covers law and ethics in print journalism and broadcasting with particular emphasis on libel laws, invasion of privacy, free press, fair trial, obscenity and pornography, censorship and federal regulations of broadcasting content. Offered fall and spring.
- JCM 490. RESEARCH METHODS** 4 sh  
 This course presents the theoretical and methodological knowledge necessary to conduct mass communication research, political polling, marketing research and the reporting of research.
- JCM 491. INDEPENDENT STUDY** 1-4 sh

**JCM 495. SENIOR SEMINAR**

4 sh

This capstone course for majors examines current issues and research in journalism, broadcast communications, corporate communications and film. Students demonstrate competence in areas (such as communication theory, history and law) through projects and examinations. Prerequisite: senior status. (Students must pass this course with a grade of "C-" or better.) Offered fall and spring.

***Leisure/Sport Management***

Chair, Department of Health Promotion, Leisure and Human Performance: Professor J.P. Brown

Professors: Beedle, Calhoun

Associate Professor: Drummond, Walker

Assistant Professor: Orejan

Study in Elon's Leisure/Sport Management program located within the Health Promotion, Leisure and Human Performance department offers preparation for those wishing to enhance quality of life for themselves and others through leisure opportunity. Specifically, students develop a philosophical foundation in leisure and sport, acquire a knowledge base in business administration, study interpersonal skills applicable to the leisure setting and learn by active participation.

**A major in Leisure/Sport Management** requires the following courses:

L/SM 212	Introduction to Leisure/Sport Management	4 sh
L/SM 326	Facility Planning and Maintenance Management	4 sh
L/SM 327	Leadership and Events Management	4 sh
L/SM 351	Leisure/Sport Sales and Marketing	4 sh
L/SM 365	International Aspects of Leisure/Sport	4 sh
L/SM 405	Legal Aspects of Leisure/Sport	4 sh
L/SM 426	Leisure/Sport Policy	4 sh
L/SM 461	Senior Seminar	4 sh
L/SM 481	Internship in Leisure/Sport Management	6 sh
ESS 432	Research Methods	4 sh
ACC 201	Principles of Accounting I	4 sh
BUS 202	Business Communications	4 sh
BUS 303	Introduction to Managing	4 sh
<b>Total</b>		<b>54 sh</b>

**A minor in Leisure/Sport Management** requires the following courses:

L/SM 212	Introduction to Leisure/Sport Management	4 sh
L/SM 326	Facility Planning and Maintenance Management	4 sh
L/SM 327	Leadership and Events Management	4 sh
Eight semester hours chosen from the following:		8 sh
L/SM 351 Leisure/Sport Sales and Marketing		
L/SM 365 International Aspects of Leisure/Sport		
L/SM 405 Legal Aspects of Leisure/Sport		
L/SM 426 Leisure/Sport Policy		
<b>Total</b>		<b>20 sh</b>

- LSM 212. INTRODUCTION TO LEISURE/ SPORT MANAGEMENT** 4 sh  
An introduction to leisure/sport management fundamentals emphasizing the role and relevance of each to society. Students study terminology, philosophies and evolution of leisure, internal and external recreation motivation factors, leisure concepts and relevant contemporary issues
- LSM 326. FACILITY PLANNING AND MAINTENANCE MANAGEMENT** 4 sh  
This study focuses on area and facility planning and maintenance principles in leisure settings, including developing a master plan and analyzing the relationship of maintenance and planning to risk management, visitor control, vandalism and law enforcement.
- LSM 327. LEADERSHIP AND EVENTS MANAGEMENT** 4 sh  
Students study the principles of leadership and group dynamics as they apply to leisure activity programming and learn to identify, develop and apply component skills such as needs assessment, inventory, evaluation, etc. Students will participate in an actual event project.
- LSM 351. LEISURE/SPORT SALES AND MARKETING** 4 sh  
This course examines the theory and pragmatic aspects of service marketing, promotions and public relations and their application to the leisure/sport industry. Students will participate in an actual event project.
- LSM 365. INTERNATIONAL ASPECTS OF LEISURE/SPORT** 4 sh  
Leisure and sport are universal. Today, the leisure industry is one of the most financially important and pervasive industries in the world. This course seeks to expand student awareness and appreciation for cultural diversity through examination of the various meanings which leisure and sport have within different cultural groups.
- LSM 405. LEGAL ASPECTS OF LEISURE/SPORT** 4 sh  
The United States is the most litigious nation in the world. Consequently, as a major sector of the economy, the leisure/sport industry managers must be aware of component legal issues in order to operate safely and efficiently. This course will allow students to examine pertinent legal issues such as contracts, personal and product liability, risk management, gender discrimination, human resources and drug testing.
- LSM 426. LEISURE/SPORT POLICY** 4 sh  
This course examines policy development in various sectors of the leisure/sport industry. Study will focus on issues such as land-use policy, public-private funding arrangements, leisure funding legislation, antitrust, labor relations, taxation and the Olympic movement. Students will critique existing leisure/sport policy through case studies and attendance of relevant local public meetings. Senior standing or permission of instructor.
- LSM 461. SENIOR SEMINAR** 4 sh  
Students review their major work and education and demonstrate ability to analyze contemporary issues/problems in leisure and sport management
- LSM 481. INTERNSHIP IN LEISURE/SPORT MANAGEMENT** 6 sh  
This course provides students with 240 supervised hours (agency/university) of experiential exposure in the area of their vocational interest. Students demonstrate knowledge, skills, abilities and competencies in the areas of organization and administration, leadership techniques, program planning and implementation, fiscal administration, personnel development and supervision, public and political relations and area/facility planning, development and maintenance. Students will submit the following to the academic supervisor: learning objectives, weekly reports and an agency survey showing comprehensive knowledge of the agency. Arrangements with a professor should be made prior to the semester in which the internship is taken. Prerequisite: must have a 2.0 GPA in the major, for majors only. Offered fall, spring and summer.
- LSM 491. INDEPENDENT STUDY** 1-4 sh

## Mathematics

Chair, Department of Mathematics: Assistant Professor Allis

Professors: Francis, Haworth

Associate Professors: Barbee, J. Clark, Richardson

Assistant Professors: J. Beuerle, Coles, T. Lee, Russell

Instructor: L. Beuerle

Adjunct Instructors: Dymmel, Walton, Whiffen

The Department of Mathematics offers programs leading to the A.B. or B.S. degree with a major in mathematics. A minor in mathematics is available for students majoring in another discipline.

Mathematics is an excellent major for the student whose immediate objective is to acquire a good liberal arts education. Students who complete a bachelor's degree in mathematics may choose several postgraduate alternatives, including an advanced degree in either mathematics or another closely related field (computer science, biometry, information science, statistics or operations research).

Students who combine mathematics with another discipline that uses mathematics can also pursue graduate work in the second discipline. These areas include biology, chemistry, economics, medicine, physics and many of the social science disciplines. In addition, mathematics majors may teach at the secondary level or work in business, industry or government positions which emphasize analytical reasoning.

The Bachelor of Arts and the Bachelor of Science degrees in Mathematics require the following core courses:

MTH 121	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 425	Analysis	4 sh
MTH 361	Seminar I	2 sh
MTH 461	Seminar II	2 sh
<b>TOTAL</b>		<b>32 sh</b>

A Bachelor of Arts degree in Mathematics requires the following courses:

Core courses in Mathematics	32 sh	
One course selected from	4 sh	
MTH 331	Modern Geometry	
MTH 341	Probability and Statistics	
MTH 351	Theory of Computation	
MTH 415	Numerical Analysis	
MTH 421	Differential Equations	
MTH elective(s) at the 300-400 level (excluding MTH 481)	4 sh	
CSC 130	Computational Programming	4 sh
PHY 113	Physics with Calculus I	4 sh
<b>TOTAL</b>		<b>48 sh</b>

**A Bachelor of Science degree in Mathematics** requires the following courses:

Core courses in Mathematics	32 sh
One course selected from	4 sh
MTH 331 Modern Geometry	
MTH 341 Probability and Statistics	
MTH 351 Theory of Computation	
MTH 415 Numerical Analysis	
MTH 421 Differential Equations	
MTH elective(s) at the 300-400 level (excluding MTH 481)	4 sh
CSC 130 Computational Programming	4 sh
One CSC course numbered above 130	4 sh
PHY 113 Physics with Calculus I	4 sh
PHY 114 Physics with Calculus II	4 sh
<hr/> <b>TOTAL</b>	<hr/> <b>56 sh</b>

**Secondary Teaching Licensure in Mathematics**

Students planning to teach mathematics at the secondary level must complete a bachelor of arts or bachelor of science degree in mathematics and include MTH 331 and 341 among the mathematics requirements, in addition to the required professional education courses. (See professional education course requirements listed under Education.)

**A Bachelor of Science degree in Engineering Mathematics:** see requirements listed under Engineering.

**A minor in Mathematics** requires the following courses:

MTH 121 Calculus and Analytic Geometry I	4 sh
MTH 221 Calculus II	4 sh
MTH 231 Mathematical Reasoning	4 sh
MTH 311 Linear Algebra	4 sh
Elective(s) from MTH 112 or Mathematics courses numbered 200 or above (excluding MTH 210 and MTH 481) Computer Science courses, or Economics 203	4 sh
<hr/> <b>TOTAL</b>	<hr/> <b>20 sh</b>

A student may exempt MTH 112, 115, and/or 121 by demonstrating proficiency.

Once a student has received credit, including transfer credit for a course, credit may not be received for any course with material that is equivalent to it or is a prerequisite for it, without permission of the mathematics department.

**MTH 100. ALGEBRAIC CONCEPTS**

4 sh

This course is designed to develop and maintain proficiency in basic algebra skills and to prepare students for future mathematics work in college courses. Topics include exponents, factoring, equation solving, rational expressions, radicals, quadratic equations and graphs of functions. A specific graphing calculator is required. This course must be completed with “C-” or better before taking any other mathematics course. Elective credit only. No credit will be given to students having passed MTH 115 or higher. Offered fall and spring.

**MTH 112. GENERAL STATISTICS**

4 sh

This course provides an introduction to modern statistics. Students will analyze and critically interpret real world data using information such as the U.S. Census, election results and health issues. This course emphasizes communication, use of technology and collaborative learning. Topics covered include descriptive statistics, inferential statistics and regression analysis. A specific graphing calculator is required. Prerequisite: MTH 100 or placement exemption Offered fall, and spring.

**MTH 115. TRIGONOMETRY**

4 sh

This course provides a study of algebraic, trigonometric, exponential and logarithmic functions and their behavior. Constructing, analyzing and describing mathematical models of everyday phenomena is emphasized. A specific graphing calculator is required. Prerequisite: MTH 100 or placement exemption. Offered fall and winter.

**MTH 116. APPLIED MATHEMATICS WITH CALCULUS**

4 sh

This introduction to linear systems and differential calculus emphasizes applications to problem solving in business and economics. Students gain enhanced ability to analyze a problem mathematically and study the following topics: functions, limits, derivatives and applications of derivatives. No credit for students with MTH 121 or its exemption. A specific graphing calculator is required. Prerequisite: MTH 100 or placement exemption. Offered fall, winter and spring.

**MTH 121. CALCULUS AND ANALYTIC GEOMETRY I**

4 sh

Students are introduced to analytic geometry, functions, limits and continuity, differentiation of algebraic functions with applications, the definite integral, and the fundamental theorem of integral calculus. A specific graphing calculator is required. Prerequisite: MTH 115 or placement exemption. Offered fall and spring.

**MTH 210. MATHEMATICS FOR ELEMENTARY AND MIDDLE GRADES TEACHERS**

4 sh

This course is open only to students majoring in elementary education, special education or middle grades education with a concentration in mathematics. Topics include problem solving, numeration systems, set theory, rational and irrational numbers (concepts, operations, properties and algorithms), geometry, measurement and selected topics in probability and statistics. Prerequisite: General Studies mathematics requirement. Offered fall and spring.

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**MTH 221. CALCULUS AND ANALYTIC GEOMETRY II**

4 sh

Students explore applications of the definite integral, differentiation and integration of transcendental functions, techniques of integration, indeterminate forms, improper integrals, infinite sequences and series. A specific graphing calculator is required. Prerequisite: MTH 121. Offered fall and spring.

**MTH 231. MATHEMATICAL REASONING**

4 sh

This study of proof techniques and reasoning skills introduces the student to another side of mathematics, namely proof. The student's preceding courses (e.g., precalculus and calculus) usually focus on calculations. Topics include mathematical logic, sets, mathematical induction, combinatorics, relations and countability arguments. Approved for advanced-level designation. Prerequisite: MTH 121. Offered fall and spring.

**MTH 241. DISCRETE STRUCTURES**

4 sh

This course offers an intensive introduction to discrete mathematics as it is used in computing sciences. Topics include functions, relations, propositional and predicate logic, simple circuit logic, proof techniques and elementary and discrete probability. Prerequisite: MTH 116 or MTH 121. Offered spring.

**MTH 311. LINEAR ALGEBRA**

4 sh

This introductory course in linear algebra includes systems of linear equations, matrices, determinants, vector spaces, eigenvalues, eigenvectors, orthogonality and linear transformations. Proofs of the major theorems and a variety of applications are also covered. Prerequisites: MTH 221, 231. Offered fall and spring.

- MTH 312. ABSTRACT ALGEBRA** 4 sh  
 Students who have had an introduction to the rules of logic and proof construction are introduced to abstract algebra, including topics such as functions, groups (cyclic, permutation, normal and quotient), properties of groups, rings, fields, homomorphisms, isomorphisms, real and complex numbers and polynomials. Prerequisites: MTH 231, 311. Offered spring.
- MTH 321. CALCULUS AND ANALYTIC GEOMETRY III** 4 sh  
 This course provides a study of advanced techniques of differential and integral calculus, including plane curves and polar coordinates, three-dimensional analytic geometry including vectors, differentiation and integration of multivariable functions and applications. A specific graphing calculator is required. Prerequisite: MTH 221.
- MTH 331. MODERN GEOMETRY** 4 sh  
 This rigorous treatment of axiomatic foundations of Euclidean geometry through Hilbert's axioms includes the role and independence of the parallel postulate (revealed through models and neutral geometry), straightedge and compass constructions, historical, and philosophical implications of the discovery of nonEuclidean geometry with an introduction to both hyperbolic and elliptic geometry. Prerequisite: MTH 231. Offered fall of odd-numbered years.
- MTH 341. PROBABILITY THEORY AND STATISTICS** 4 sh  
 Topics include axiomatic probability, counting principles, discrete and continuous random variables and their distributions, sampling distributions, central limit theorem, confidence intervals, and hypothesis testing. Prerequisites: MTH 221 and 231. Offered fall of even-numbered years.
- MTH 351. THEORY OF COMPUTATION** 4 sh  
 (Same course as CSC 351. See CSC 351 for description.)
- MTH 361. SEMINAR I** 2 sh  
 This course prepares mathematics majors for Seminar II, the capstone seminar, by instruction and experience in library research and formal oral presentations on advanced mathematical topics selected by the instructor and students. Prerequisite: junior/senior standing or permission of the mathematics department. Offered spring.
- MTH 371. SPECIAL TOPICS** 2-4 sh  
 Topics are selected to meet the needs and interests of students.
- MTH 415. NUMERICAL ANALYSIS** 4 sh  
 This introduction to numerical analysis includes floating point arithmetic, interpolation, approximation, numerical integration and differentiation, nonlinear equations and linear systems of equations. Prerequisites: CSC 130; MTH 311, 321; or permission of the instructor. (CSC 415 is the same as MTH 415.) Offered spring of even-numbered years.
- MTH 421. DIFFERENTIAL EQUATIONS** 4 sh  
 Topics in this in-depth study of methods of solution and applications of ordinary differential equations include first- order differential equations (linear and nonlinear), linear differential equations of higher order, mathematical models using second-order equations, systems of differential equations and numerical techniques including Euler, Improved Euler and the Runge-Kutta method. Computers or programmable calculators may be used. Prerequisite: MTH 321. Offered spring.
- MTH 425. ANALYSIS** 4 sh  
 This course provides an in-depth study of topics introduced in the three-course calculus sequence, including sequences and series, continuity and differentiation of functions of a single variable, the Riemann integral and the fundamental theorem of calculus. Prerequisites: MTH 312 and 321. Offered fall.

- MTH 461. SEMINAR II** 2 sh  
In this capstone experience for senior mathematics majors, students conduct extensive research on a mathematical topic and formally present their work in writing and orally. Course requirements include a satisfactory score on the ETS major field achievement test. Prerequisites: MTH 361 and junior/senior standing or permission of the department. Offered fall.
- MTH 471. SPECIAL TOPICS** 2-4 sh  
Topics are selected to meet the needs and interests of the students.
- MTH 481. INTERNSHIP IN MATHEMATICS** 1-4 sh  
The internship provides advanced work experiences in some aspect of mathematical sciences and is offered on an individual basis when suitable opportunities can be arranged. Prerequisite: permission of the department.
- MTH 491. INDEPENDENT STUDY** 1-4 sh  
Prerequisite: permission of the department. May be repeated with different topics for up to a total of eight semester hours.

### ***Medical Technology***

Chair, Department of Biology and Allied Health: Assistant Professor Vick

Program Director: E. Anderson

Medical Director: Lipford

University Program Director: H. House

See Biology