

## Academic Credit

All courses, including special topics courses, offered for academic credit must meet minimum standard course and lecture approval requirements. One credit represents satisfactory completion of 750 minutes of lecture or 1,500 of supervised laboratory, or 2,250 minutes of supervised or unsupervised laboratory, whichever is appropriate to the course objectives. Course numbers for academic credit are 050-499 (undergraduate) and 600-699 (graduate). Academic credit is applicable toward academic programs, with the exception of 050-099, which is considered pre-college level, and 500-599, which is professional development credit.

For classes of less than one semester in duration, course hours may not be compressed into fewer than three days per credit (and no more than one credit may be earned per week, per student). Students are expected to put in two hours of outside effort for every one hour in class in accordance with the standard Carnegie unit of credit.

## Internships

Internships are experience-based courses that involve placing students in an organization under the supervision of both a qualified professional in the agency and a faculty member from the discipline.

Internships require satisfactory completion of a minimum of four hours per week for each credit (0 + 0 + 4) for which students are registered for the duration of the semester. To apply for an internship, students must be admitted to a University program. Students must also demonstrate educational preparation for the internship and the connection between the internship and their educational goals. A maximum of 9 hours can apply to an associate's degree; 12 credit hours to a bachelor's degree. Departments may have additional requirements for internships.

## Practica

Practica are supervised practical applications of a previously studied theory conducted under the supervision of a qualified professional in cooperation with a faculty member.

Practica courses require satisfactory completion of a minimum of four hours of supervised experience per week for each credit (0 + 0 + 4) for which students are registered for the duration of the semester. These courses are generally at off-campus settings where students are under the direct supervision of agency personnel. A maximum of 9 credit hours can apply to an associate's degree; 12 credit hours to a bachelor's degree.

## Independent Study

Independent study courses are those in which the course content, learning activities, and evaluative criteria are developed primarily by the student with guidance and concurrence from a faculty sponsor. Final approval for enrolling in independent study must be gained from a faculty sponsor and the appropriate Academic Dean (or equivalent) or campus director. Independent study courses bear a course number ending in "97" and are offered at the 200, 300, 400, and 600 levels only. No more than 12 credits earned in independent study may be applied to an undergraduate baccalaureate degree, no more than 6 credits to an associate degree, and no more than 3 credits to an undergraduate certificate. Independent studies will not duplicate catalog courses. If the independent study is designed to be conducted over more than one semester, approval must be gained at the time the dean or campus director approves the course. Approval to enroll is accomplished with an Instructor Approval Form, which is submitted with registration material.

## Directed Study

A directed study course is identical to a catalog course with regard to title, objectives, content, and evaluative criteria. A directed study is not normally approved during the semester in which the course is regularly offered. Such courses shall bear the regular course title and number on the permanent record with the designation "Directed Study" (DS).

## Seminar

Seminars are regularly scheduled meetings of students for the purpose of discussion and reports on special topics and are conducted under the guidance of

a faculty member. Seminars require a minimum of 750 minutes of scheduled classroom time for each credit earned (1 + 0).

## Stacked Courses

Occasionally two or more courses are scheduled in the same classroom at the same time. These are referred to as “stacked courses.” Catalog descriptions of these courses include the statement “May be stacked.” The semester class schedule will indicate if a class is being offered in stacked format and will list which course(s) are being stacked.

## Special Topics

Special Topics Courses, which bear the designator 93, are credit courses designed to pilot test course content or to provide a specialty content areas on a one-time basis. Special topics must meet the same standard as academic credit courses in every way.

## Cross-Listed

Occasionally it is appropriate to designate a course as being in more than one discipline. The content of the cross-listed course is the same but students may select the designator appropriate to their major.

## Professional Development Courses

Courses with the numbers 500–599 are designed to provide continuing education for various professional groups and cannot be applied to degree programs. Such courses are post-baccalaureate in nature but are not applicable to degree requirements. The measurement of student effort is indicated by professional development credits. One credit requires at least 12.5 classroom contact hours, two credits at least 25, and three credits at least 37.5, etc. These courses are graded Pass/Fail or with normal grading, and courses are provided on a self-support basis.

## Continuing Education Unit (CEU)

The CEU is a nationally recognized unit of credit granted for participation in educational experiences under responsible sponsorship, capable direction, and qualified instruction that has a ten-contact-hour-per-credit ratio. CEUs are not convertible to degree credit. Course numbers for continuing education courses are 001–049.

## Distance Delivery Instruction

UAS distance classes count towards residency credits at UAS. Distance course coverage is equivalent and stu-

dent outcomes comparable to the same course delivered on campus. The faculty groups and administration of campuses delivering distance classes will periodically review the scope and method of distance delivery.

## Prerequisites For Courses

Students are responsible for checking to make sure that prerequisites have been met. Prerequisites are listed in individual course descriptions in this catalog. If a student has not taken the necessary prerequisites but feels confident of performing the coursework, he or she may request permission from the instructor of the course to enroll in the class.

## Course Numbering System

Course numbers indicate the level of academic preparation required as well as the year of study. The following course numbers show the categories to which they apply:

001–049	Noncredit courses
050–099	Pre-college level or remedial courses; associate and baccalaureate degree credit not allowed.
100–199	Undergraduate courses normally taken in the first year.
200–299	Undergraduate courses normally taken in the second year.

As a general guideline upper-division courses require at least junior standing or equivalent experience in addition to any stated prerequisites. Students are expected to have adequate preparation and background to complete courses at this level.

300–399	Undergraduate courses normally taken in the third year.
400–499	Undergraduate courses normally taken in the fourth year.
500–599	Professional Development courses (these do not appear in this catalog).

Graduate standing, admission, or equivalent is required for graduate-level courses in addition to any stated prerequisites.

600–699	Graduate courses. Not open to undergraduate students except by special permission.
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## Special or Reserved Numbers

–75	Current Issues
–91	Internships
–92	Seminar
–93	Special topics courses intended to be offered only during one academic year

- 94 Practica
- 97 Independent study
- 98 Individual research
- 99 Thesis

Courses bearing these numbers may be repeated for credit provided the course content differs each time the student registers for the course.

## Non-Credit Course

A course offering for which no credit is awarded by the institution, although certificates of completion may be given. Course numbers for noncredit courses are 001–049.

## Course Classifications

The following classifications of courses meet category requirements as follows:

### Humanities

- Art
- Communication
- Dance
- English
- History\*
- Humanities
- Journalism
- Languages
- Library Science
- Linguistics
- Literature
- Music
- Philosophy
- Religion
- Theatre

*\*History courses may be counted as meeting either humanities or social science requirements but not both.*

### Mathematics and Logic

- Mathematics
- Statistics
- Logic

### Natural Sciences

- Astronomy
- Biology
- Chemistry
- Environmental Sciences
- Fisheries
- Geology
- Natural Science
- Oceanography
- Physical Anthropology

- Physical Geography
- Physical Sciences
- Physics

### Social Sciences

- Anthropology
- Economics
- Geography
- Government
- History\*
- Political Science
- Psychology
- Sociology

*\*History courses may be counted as meeting either humanities or social science requirements but not both.*

# COURSE DESCRIPTIONS

The courses offered by the University of Alaska Southeast on all three campuses are described in this section. Courses are listed alphabetically and by course number.

The designation of J, K, or S (Juneau, Ketchikan, or Sitka) indicates which campus regularly offers the course. The designation JCSFOS means the course is offered in Juneau by the Juneau Center for UAF's School of Fisheries and Ocean Sciences. The designation GER means the course fills a General Education Requirement. Courses are offered in a scheduled six-year sequence. For more information, see [www.uas.alaska.edu/provost](http://www.uas.alaska.edu/provost) and choose "6-Year Course Sequence."

The number of credits offered for a course is shown following the course number and title. The figures in parenthesis indicate the number of lecture and lab hours the class meets each week for one semester. The first number represents lecture hours; the second number represents required lab hours (a third number represents practicum or internship hours). For example, ED S101, 3 credits (2 + 2) indicates that the class has the equivalent of two hours of lecture and two hours of lab work per week for an entire semester. The number of credits listed is for each semester.

## Accounting (ACCT)

### **ACCT S100 Recordkeeping for Small Businesses**

**3 credits (3+0) J, S**

Introduction to recordkeeping for accounting purposes for the small business entrepreneur. Course covers all monthly activities necessary to and required by government including: reconciliation of bank statements, trial balances, income statements, payroll preparation and reports, employee earnings, maintaining a journal and subsidiary ledgers and preparation of tax forms.

### **ACCT S121 Introduction to Accounting I** **3 credits (3+0) J, K, S**

Covers the fundamentals of accounting using a service business to illustrate the analysis of business transactions, journalizing, posting and preparation of trial balances and financial statements. Adjusting entries, closing procedures and payroll are introduced. Beginning Fall 1996, ACCT S121 and S122 together will satisfy the ACCT S201 requirement.

### **ACCT S122 Introduction to Accounting II**

**3 credits (3+0) J, K, S**

Continuation of fundamental accounting principles. Covers accounting for receivables, uncollectible accounts, inventories, fixed assets, and intangible assets. Accounting for partnerships and an overview of corporate stock transactions are covered. Provides an introduction to cash flow statements and ratio analysis. ACCT S121 and S122 together satisfy ACCT S201. Prerequisite: ACCT S121.

### **ACCT S190 Individual Income Tax Update**

**1 credit (1+0) J**

A brief overview of recent changes in individual income tax laws. Emphasis is on the preparation of individual returns. May be repeated for credit.

### **ACCT S201 Principles of Financial Accounting**

**3 credits (3+0) J, K, S**

Introduction to accounting concepts and procedures for a business. Emphasis is on the accounting cycle and the recording, summarizing and interpretation of accounting data. This course will satisfy the requirements for ACCT S121 & ACCT S122 in the certificate program. ACCT S121 and ACCT S122 will substitute for ACCT S201.

### **ACCT S202 Principles of Managerial Accounting**

**3 credits (3+0) J, K, S**

A continuation of elementary accounting concepts and procedures with the introduction of manufacturing operations and time value of money and cost accounting principles. Job order costing, process costing, cost-volume-profit, budgeting, and variances are introduced. Cash flows and financial statements analysis are also covered. Prerequisite: ACCT S201 and MATH S055 or instructor permission.

### **ACCT S222 Computer Automated Accounting**

**3 credits (3+0) J, K, S**

This course demonstrates how a computer system can be used effectively for the complete accounting cycle. Particular emphasis is placed on general ledger, accounts payable, accounts receivable and payroll related transactions. Prerequisites: ACCT S121 and ACCT S122 or ACCT S201.

### **ACCT S310 Income Tax for Individuals**

**3 credits (3+0) J**

A study of federal and state income taxes relating to individual citizens of Alaska with emphasis on the preparation of tax returns, tax planning and analysis of selected tax problems. Prerequisite: ACCT S201.

### **ACCT S311 Intermediate Accounting I**

**3 credits (3+0) J, K**

An in-depth study of accounting sequence, principles and rules governing financial statements. Includes discussion of cash, receivables, inventory, fixed assets and intangible assets. The time value of money as it relates to financial accounting situations will also be addressed. Prerequisite: ACCT S202.

### **ACCT S312 Intermediate Accounting II**

**3 credits (3+0) J, K**

A continuation of the study of intermediate accounting including the principles governing financial reporting of liabilities, investments, deferred taxes, revenues and stockholders' equity. Preparation of the cash flow statement and disclosure information will also be addressed. Prerequisite: ACCT S311.

### **ACCT S316 Accounting Information Systems**

**3 credits (3+0) J**

Design and analysis of accounting systems for business entities in various industries specifically adapted for data processing. Includes data processing application for internal control, payroll, accounts payable and receivable and other accounting procedures. Prerequisites: ACCT S202, and three credits of CIOS.

### **ACCT S342 Advanced Managerial Cost**

**3 credits (3+0) J**

Course emphasizes research and planning in the cost accounting field. Topics covered include basic concepts and terminology; cost accumulation systems including job order cost, process cost, standard costs, absorption and variable costing; variance analysis, budgeting and profit planning, flexible budgets; cost behavior determination and use of the cost-volume-profit model; and cost systems design. Prerequisite: ACCT S202.

### **ACCT S379 Fund & Governmental Accounting**

**3 credits (3+0) J, K**

Emphasizes accounting and reporting standards for state and local governments. Includes an in-depth discussion of fund accounting. Prerequisite: ACCT S201.

### **ACCT S401 Advanced Accounting**

**3 credits (3+0) J**

Analyzes consolidation of parent-subsidary financial statements, foreign currency transactions, and partnership accounting. Inflation adjustments, bankruptcy, and financial statement analysis are among the additional topics which may be studied. Prerequisite: ACCT S312.

### **ACCT S410 Advanced Tax**

**3 credits (3+0) J**

Advanced study of taxation including corporate tax, gift, estate and social security tax; taxes for the partnership and not-for-profit areas. The development of tax research skills is included. Prerequisite: ACCT S310.

### **ACCT S443 Cost Analysis and Controls**

**3 credits (3+0) J**

Continuation of Advanced Managerial Cost to cover accounting for spoilage, joint product and by-products, determining costs and revenues relevant to short-run decisions, cost allocations for multipurpose reporting, capital budgeting for long-range investment decisions, control systems for decentralized organizations, accounting methods for controlling inventory investments and performance reporting. Prerequisite: ACCT S342.

### **ACCT S452 Auditing**

**3 credits (3+0) J**

Procedures for verification of financial data and the professional standards applicable to the auditor's examination of financial statements and expression of opinion relative to them. Prerequisite: ACCT S312.

### **ACCT S453 Advanced Auditing**

**3 credits (3+0) J**

Advanced topics needed to cover the expanding field of auditing. Expansion into the area of auditing with the computer, in-depth analysis of auditing research, including recent auditing developments. Auditing techniques for particular entities will be reviewed. Prerequisite: ACCT S452.

### **ACCT S480 Advanced Theory**

**3 credits (3+0) J**

A capstone course to help accounting students find relationships among the various procedures learned in other courses. The content covers income definition and measuring problems, asset input valuations, asset value changes and AICPA statements related to theory. Prerequisite: ACCT S312.

## **Alaska Languages (AKL)**

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\* Not applicable to general education requirements.

### **AKL S101 Haida I\***

**1 credit (1+0) K**

Students learn how to pronounce each Haida alphabet sound. Students learn common greetings and basic vocabulary for the family, food, clothing, body parts, common stories, and legends.

### **AKL S102 Haida II\***

**1 credit (1+0) K**

Continuation of Haida I.

### **AKL S103 Tlingit I\***

**credit (1+0) K, S**

A class designed to help students speak and understand the Tlingit language. Students learn the alphabet, pronunciation of alphabet sounds, words, simple sentences, and grammar.

### **AKL S104 Tlingit II\***

**1 credit (1+0) K, S**

Continuation of Tlingit I and advance to more complex structures through the medium of stories and legends.

### **AKL S105 Elementary Tlingit I**

**4 credit (4+0) J GER**

An introduction to basic Tlingit grammatical structures and vocabulary with an emphasis on the development of listening and speaking skills.

### **AKL S106 Elementary Tlingit II**

**4 credit (4+0) J GER**

A continuation of AKL S105 Elementary Tlingit I. Focuses grammatical structures and vocabulary building with an emphasis on the development of listening and speaking skills. Prerequisite: AKL S105 Elementary Tlingit I or permission of instructor.

### **AKL S107 Elementary Haida I**

**4 credits (4+0) K GER**

The Haida Language, Xaat Kil, is the traditional language of the Haida people of Haida Gwaii and Southeast Alaska. Students will learn to speak and understand basic Haida and focus on four basic language skills: speaking, listening comprehension, reading, and writing. Emphasis will be on mastery of everyday vocabulary, and basic Haida grammatical patterns.

### **AKL S108 Elementary Haida II**

**4 credits (4+0) K GER**

A continuation of AKL 107. Students will improve their ability to speak and understand basic Haida. We will focus on four basic language skills: speaking, listening, reading, and writing. Emphasis will be on further mastery of everyday vocabulary and basic Haida grammatical patterns. Prerequisite: AKL 107 or instructor permission.

### **AKL S205 Intermediate Tlingit I**

**4 credits (4+0) J**

An intermediate level continuation of the AKL S105/S106 sequence with further emphasis on development of language skills (listening, comprehension, reading, writing, speaking) and an added focus on the orthography and tone system, as well as vocabulary building and cultural elements. Prerequisite: AKL S106 or instructor permission.

### **AKL S206 Intermediate Tlingit II**

**4 credits (4+0) J**

A continuation of AKL S205 with further development of grammatical skills, vocabulary, orthography, tonality and cultural elements unique to Tlingit. Prerequisite: AKL S205 or instructor permission.

### **AKL S305 Advanced Tlingit I**

**4 credits (4+0) J**

A continuation of AKL S206. All communication skills will be refined. Prerequisite: AKL S206 or instructor permission.

## **Alaska Studies (ALST)**

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### **ALST S300 Alaska Studies**

**3 credits (3+0) J, K**

Provides an overview of the environment and the residents, both indigenous and immigrant, of Alaska. Emphasis is given to the social, economic and political history of Alaska and the religious and educational institutions and laws that affect the people of Alaska. This course meets the state requirement for certification in Alaska History/Alaska Studies.

## **ALST S600 Alaska Resources, People and Perspectives**

**3 credits (3+0) J**

A study of the people of Alaska, including Alaska Natives and immigrants and their adaptations to the environment. Archaeological, historic and contemporary periods will be reviewed highlighting events and issues from a range of cultural perspectives.

## **American Sign Language (ASL)**

### **ASL S100A Sign Language I**

**1 credit (1+0) K**

This course will introduce students to the basic principles of manual communication. Students will learn finger-spelling and a basic vocabulary of 150 functional words.

### **ASL S100B Sign Language II**

**1 credit (1+0) K**

This course is a continuation of ASL S100A. Components of the course include acquiring new vocabulary, conversational sign language practice, and using sign language in a variety of ways. Prerequisite: ASL S100A.

### **ASL S101 Beginning American Sign Language I**

**4 credit (3+2) J GER**

This is an introduction to visual communication. The emphasis will be on grammatical foundations for American Sign Language. Introduction to the American Deaf Culture, its mores and significant issues. Lectures will provide demonstrations of ASL discourse as well as analysis and derivations, signs and grammatical structures. The required weekly lab will provide a setting for pragmatic applications of linguistic principles.

### **ASL S102 Beginning American Sign Language II**

**4 credit (3+2) J GER**

This is a continuation of ASL I. It will cover intermediate level ASL grammar and vocabulary including idiomatic and vernacular constructions. This course will prepare the student for advanced study and will finish laying the groundwork for further training in the field of ASL interpreting. Weekly lab is required to acquire intermediate levels of ASL fluency and pragmatic application of linguistic principles. Prerequisite: ASL S101 or instructor permission.

## **Anthropology (ANTH)**

### **ANTH S101 Introduction to Anthropology**

**3 credits (3+0) J, K GER**

An introduction to the fundamentals of the four subfields of anthropology: archaeology, cultural anthropology, biological anthropology, and anthropological linguistics. Practical applications of anthropological concepts and perspectives are emphasized. Case materials are drawn from cultures around the world.

### **ANTH S200 Alaska Native Cultures**

**3 credits (3+0) J, K**

An introduction to culture, history, and archaeology of Alaska Natives. Includes environmental settings, languages, socioeconomic and subsistence patterns, cultural change, and contemporary issues.

### **ANTH S202 Cultural Anthropology**

**3 credits (3+0) J, K GER**

Basic theories, methods, and concepts of cultural anthropology. Includes analysis of social, political, economic, belief and symbolic systems. Serves as a foundation for more specialized courses in cultural anthropology.

### **ANTH S205 Biological Anthropology**

**3 credits (3+0) J, K GER**

A study of human biology including genetics, human evolution and variation, adaptations, ecology and primatology. Prerequisite: ANTH S101 or permission.

### **ANTH S211 Fundamentals of Archaeology**

**3 credits (3+0) J, K GER**

The history, concepts, theories and methods of archaeology. The analysis and interpretation of data, using field reports and problems. This course is often required for those wishing to attend field schools in archaeology. Prerequisite: ANTH S101 or S202 or permission.

### **ANTH S225 Artistic Expressions and Oral Narratives of Alaska Natives**

**3 credits (3+0) J, K**

Comparisons and analyses of the artistic expressions of Alaskan Native cultures including oral narratives, graphic and performing arts. Discussion of the cultural milieu in which each form developed, including the world views, beliefs, environment, ecology, and psychology of the peoples.

**ANTH S280 Issues in Anthropology:  
Selected Topics**

**3 credits (3+0) J, K**

In-depth exploration of a current topic in applied or theoretical anthropology. Topics may include issues of local and regional significance. Prerequisite: ANTH S101 or S202 or permission.

**ANTH S311 Methods and Theories in  
Archaeology**

**3 credits (3+0) J**

Examines the history of methods and theories in archaeology. Contemporary methods and techniques used in conducting archaeological field research will be included. Discussions and class assignments will emphasize practical applications.

**ANTH S314 Archaeology of Southeast  
Alaska**

**3 credits (3+0) J**

Examines archaeological discoveries, including recent findings in Southeast Alaska. Archaeological theory and method will be discussed to understand and interpret field work and data. Readings, discussion, and guest lectures will focus on the pre-Euro-American contact period, and the historical archaeology of various industries and commerce.

**ANTH S324 Psychological Anthropology**

**3 credits (3+0) J, K**

Examination of the relationship between culture, social institutions, and psychological variables on a cross-cultural basis. Includes emphasis on cognition and socialization. Prerequisite: ANTH S101 or S202 or PSY S101 or permission.

**ANTH S335 Native North Americans**

**3 credits (3+0) J, K**

A study of the aboriginal peoples of North America including their prehistory, traditional cultures and adaptations to change. Discussion of current issues regarding America's indigenous peoples. Prerequisite: ANTH S101 or S202 or permission.

**ANTH S342 Arctic Ethnology**

**3 credits (3+0) J**

A survey of the cultures of circumpolar regions from Siberia and Alaska to Canada and Greenland. Emphasis on subsistence patterns, ecology, social organization, belief systems, interethnic relations, and contemporary issues. Prerequisite: ANTH S101 or S202 or permission.

**ANTH S351 Culture Dynamics and  
Change**

**3 credits (3+0) J**

An intensive study of the processes of culture change, including evolution, adaptation, diffusion, acculturation, revitalization, and modernization. Also includes analysis of impacts associated with industrial development. Prerequisite: ANTH S101 or S202 or SOC S101 or permission.

**ANTH S354 Culture and Ecology**

**3 credits (3+0) J**

Anthropological approaches to the relationships between sociocultural and ecological systems. Analysis of traditional ecological knowledge, subsistence patterns, and adaptations. Intensive study of selected cases and theories. Prerequisite: ANTH S101 or S202 or permission.

**ANTH S363 Ethnohistory**

**3 credits (3+0) J**

Examines methods, theories, and applications of the interdisciplinary approach of ethnohistory. Integrates analysis of different sources of information including oral narratives, historical narratives, archival sources, government documents, and archaeological evidence.

**ANTH S375 Area Studies: Selected  
Topics**

**3 credits (3+0) J, K**

An overview of the social organization, culture, and archaeological record of selected areas of the world. These include the Pacific Rim, Asia, Africa, Latin America, North America and South America. Prerequisite: ANTH S101 or S202 or permission.

**ANTH S400 Anthropology of Religion**

**3 credits (3+0) J**

Descriptive and comparative study of religious phenomena in traditional and contemporary societies including myth, ritual, magic, witchcraft, and shamanism. Prerequisite: ANTH S101, S202 or permission.

**ANTH S410 History of Anthropology**

**3 credits (3+0)**

The intellectual history of the discipline of anthropology is analyzed through the examination of ethnographic and theoretical works.

**ANTH S428 Tlingit Culture and History**

**3 credit (3+0) J**

A study of Tlingit culture, reviewing pre-Euro-American contact, social organization, and economic and religious system. Includes a review of Russian and early American occupation of Southeast Alaska and socio-cultural changes experienced by the Tlingit.

### **ANTH S435 Northwest Coast Cultures**

**3 credits (3+0) J, K**

An intensive and comparative analysis of peoples of the Northwest Coast. Emphasizes prehistory, socioeconomic and intellectual life, adaptation, and contemporary issues. Prerequisite: ANTH S101 or S202 or permission.

### **ANTH S454 Economic Anthropology**

**3 credits (3+0)**

Anthropological approaches to production, distribution, and consumption of resources in human cultural systems. Preindustrial economics in relation to other cultural subsystems. Internal and external models of economic development will be examined through case studies.

### **ANTH S458 Alaska Native Economic and Political Development**

**3 credits (3+0)**

Examines political and economic institutional development since the Alaska Native Claims Settlement Act of 1971. Assesses the emergence of Alaska Native peoples' political claims of sovereignty, and contemporary issues and conflicts surrounding Native governance.

### **ANTH S475 Alaska Native Social Change**

**3 credits (3+0) J**

Tradition and change in Alaska Native cultures and social institutions. A study of persistence and change in social structure and worldview of Alaska Native peoples.

## **Art (ART)**

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### **ART S100 Visual Art: Appreciation and Principles**

**2 credits (2+0) J**

An investigation into fundamentals of design, elements of art and their application to art history examples. ART S100 counts as a GER only in a combined pair with either MUS S100 or THR S100.

### **ART S105 Beginning Drawing**

**3 credits (1+4) J, K, S**

Introduction to basic elements in drawing. Emphasis on a variety of techniques and media. Four hours lab per week required.

### **ART S116 Fiber Arts–Spinning**

**1–3 credits (variable) J, S**

Study and practice of either hand or machine spinning using traditional fibers and methods with a special emphasis on yarn design and developing a skill for producing yarns of consistent quality.

### **ART S123 Watercolor Basics**

**3 credits (1+4) K**

This class introduces students to the basics of watercolors including discussions and demonstrations using different kinds of papers, brushes and watercolor techniques.

### **ART S138 Natural Dye**

**1 credit (1+0) J, S**

Studies history, philosophy, and procedures for dyeing with plants and other naturally found dyestuffs. Students learn how to use mordants, collect dye materials, extract the dye, dye wool and other fibers, and keep accurate records of their experiments. Both native and exotic dyestuffs are included.

### **ART S145 Commercial Art Design**

**3 credits (2+3) K**

Studio course in the fundamentals of graphic and advertising design and related production methods. Introduction to illustration techniques and materials.

### **ART S160 Art Appreciation**

**3 credits (3+0) J, K, S GER**

This course is designed to stimulate thought and develop an appreciation of the visual arts. There will be an emphasis on how art is useful in everyday life, how it speaks and what it means.

### **ART S162 Color and Design**

**3 credits (1+4) J, S**

Fundamentals of color and visual perception. Emphasis on two dimensions. Four hours lab per week required.

### **ART S180 Northwest Coast Art: Selected Topics**

**1–3 credits (variable) J, K, S**

Materials and techniques used in Northwest Coast art works. The subtitle of each course gives the specific art form covered. Lab requirements vary.

### **ART S181 Beginning Northwest Coast Design**

**1–3 credits (variable) J, K, S**

Study of the basic elements of traditional Northwest Coast Design. Includes the use of ovoids, u-shapes, and formlines to develop traditional as well as contemporary designs. Methods for transferring designs to other media, such as wood or cloth.

**ART S183 Northwest Coast Harvesting and Preparation of Basketry Materials**

**.5 credits (0+1) J, K, S**

Methods of collecting, harvesting and preparing materials for basket making. May be repeated for credit with permission of the instructor.

**ART S189 Northwest Coast Tool Making**  
**2 credits (1+2) J, K, S**

Students will make a set of Traditional Northwest Coast carving tools by grinding, shaping, tempering, polishing, sharpening, and fitting to wooden handles: a straight knife, curved knife and adze.

**ART S201 Beginning Ceramics**  
**3 credits (1+4) J, S**

Introduction to the making and firing of clay objects. Study of clay methods of forming decorations, glazing and firing. Four hours lab per week required.

**ART S204 Drawing and Modeling**  
**1–3 credits (variable) S**

Study of form in space using the two dimensions of drawing and the three dimensions of modeling in clay. May be repeated for credit with consent of instructor.

**ART S205 Intermediate Drawing**  
**3 credits (1+4) J, K, S**

Exploration of pictorial composition and creative interpretation of subjects. Four hours lab per week required. Prerequisites: ART S105.

**ART S207 Beginning Printmaking: Serigraphy (Silkscreen)**

**3 credits (1+4) J**

Introduction to basic silkscreen techniques including paper stencil, cut film, photo stencil, tusche and glue. Four hours lab per week required.

**ART S208 Beginning Printmaking: Relief**  
**3 credits (1+4) J**

Introduction to basic relief printing techniques including collagraphs, linoleum, woodcuts, and wood engraving. Four hours lab per week required.

**ART S210 Beginning Printmaking: Intaglio (Etching)**

**3 credits (1+4) J**

Investigation of basic intaglio techniques (etching, dry-point, engraving, aquatint). Four hours lab per week required.

**ART S211 Sculpture**

**3 credits (1+4) J, S**

An introduction to sculpture using one or more of the following media: clay, wood, stone, and plaster. This course is designed to make the student artist aware of his/her materials and the tools required for the execution of sculpture.

**ART S213 Beginning Painting (Oil or Acrylic)**

**3 credits (1+4) J, K, S**

Investigation of basic materials and techniques in painting in the medium specified. Four hours lab per week required. Prerequisite: ART S205.

**ART S215 Beginning Weaving**

**3 credits (1+4) J, S**

Warping the loom, reading and designing patterns, and weaving various loom controlled techniques. Manipulative techniques for lace, pile, in-lay and tapestry; yarn calculations and count systems; spinning and dyeing included. Four hours lab per week required.

**ART S221 Introductory Photography**

**3 credits (2+3) J (Cross-listed JOUR S221)**

Basic principles of photography; how the camera functions and the utilization of these features for artistic expression; processing and printing of black and white film; laboratory and classroom demonstrations; relationships of photography to other art media. Three hours of lab per week required.

**ART S222 Digital Camera Photography**

**3 credits (3+0) J, S**

Basic principles of photography, with emphasis on digital media. Introduces digital imaging technology, photo composition and lighting, using leading software to process images, and printing and electronic distribution. Emphasis is on the artistic value of digital imaging as a medium, as well as in relation to traditional photography and other forms of artistic expression. Students must have access to a digital camera. Prerequisite: CIOS 100 or instructor permission.

**ART S223 Watercolor Painting**

**3 credits (1+4) J**

Painting in various transparent and opaque media. Emphasis on techniques and subjects. Prerequisite: ART S105 or ART S162.

**ART S224 Intermediate Photography**  
**3 credits (2+3) J (Cross-listed JOUR S224)**

Development and refinement of skills in the use of the camera and techniques as a medium of expression. Assignments given to create concepts, discipline and an awareness that the camera is only a tool of creative expression. Lighting for form, texture, and separation through the use of existing and/or studio lighting. Introduction to special darkroom techniques as a tool for further investigation. Three hours lab per week required. Prerequisite: JOUR/ART S221.

**ART S226 Primitive Fire Pottery**  
**3 credits (1+4) J**

Firing pottery without a kiln in a traditional manner used for centuries will be the basis for the class. Methods used for forming pots will also be traditional hand built methods. Clay bodies and materials for firing in this way will be explained.

**ART S230 Artists Studio I**  
**1–3 credits (1+4) S**

Presents exploration of a variety of media. Students will design and complete independent projects.

**ART S240 Introductory Batik**  
**3 credits (1+4) J**

Introduction to the ancient wax-resist process of fabric dyeing. Students will complete several projects utilizing traditional and contemporary resist and dyeing techniques.

**ART S261 History of World Art I**  
**3 credits (3+0) J, K GER**

Origins of western art and its progressive development from the beginning to contemporary art. Starts with the origins and progresses through the Romanesque period.

**ART S262 History of World Art II**  
**3 credits (3+0) J, K GER**

A continuation of ART S261 starting with the Gothic period and continuing through contemporary times. ART S261 and S262 may be taken in reverse order, however course content is presented in chronological sequence starting fall semester.

**ART S263 Northwest Coast Native Art History and Culture**  
**1–3 credits (variable) J, K, S**

A survey of the visual arts of the Northwest Coast Native peoples. Traditional methods, materials and images will be discussed within their cultural and historical context.

**ART S271 Collage and Assemblage**  
**3 credits (1+4) J**

Collage (2-dimensional) technique in various media with introduction of “objet trouve.” Assemblage technique (3-dimensional) will explore the expressive possibilities of the “objet trouve.” An introductory course working in mixed media.

**ART S280 Northwest Coast Art: Selected Topics**

**1–3 credits (variable) J, K, S**

Materials and techniques used in Northwest Coast art works. The subtitle of each course gives the specific art form covered. Lab requirements vary.

**ART S281 Intermediate Northwest Coast Design**

**1–3 credits (variable) J, K, S**

Continued study of traditional Northwest Coast Design principles and elements. Prerequisite: 3 credits ART S181.

**ART S282 Beginning Northwest Coast Basketry**

**1–3 credits (variable) J, K, S**

An introduction to basket weaving practiced by coastal Indians of Alaska. Projects will include twined or plaited weaving in spruce roots or cedar bark to produce a basket or plaited hat, with particular attention to traditional standards of design.

**ART S284 Northwest Coast Basket Design**

**1 credit (.5+1) J, K, S**

Study of designs and materials used in traditional Northwest Coast baskets.

**ART S285 Beginning Northwest Coast Carving**

**1–3 credits (variable) J, K, S**

An introduction to traditional Northwest Coast carving in wood. Possible projects may include carving spoons, halibut hooks, relief panels, bentwood bowls or boxes.

**ART S286 Beginning Northwest Coast Woolen Weaving**

**1–3 credits (variable) J, K, S**

An introduction to traditional twining techniques that were used in ceremonial garments along the Northwest Coast will be studied through creation of regalia.

### **ART S301 Intermediate Ceramics**

**3 credits (1+4) J, S**

A continuation of basic ceramics with an emphasis on the potter's wheel, glaze calculations and plaster as it relates to pottery. Four hours lab per week required. Prerequisite: ART S201 or permission.

### **ART S304 Drawing and Modeling: Selected Topics**

**1–3 credits (variable) S**

Continued study of form through combined work in drawing, relief, and three-dimensional modeling. Varied topics in representation of human/living form, including portraiture. Prerequisite: ART S204 or permission.

### **ART S305 Advanced Drawing**

**3 credits (1+4) J**

Advanced exploration of pictorial compositions and creative interpretation of subjects. Special topics and media introduced. Four hours lab per week required. Prerequisite: ART S205.

### **ART S307 Intermediate Printmaking: Serigraphy (Silkscreen)**

**3 credits (1+4) J**

Development and refinement of printmaking skills with emphasis on combining different silkscreen techniques and developing personal images. Four hours lab per week required. Prerequisite: ART S207.

### **ART S308 Intermediate Printmaking: Relief**

**3 credits (1+4) J**

Development and refinement of printmaking skills. Emphasis on continuing printmaking techniques and developing personal images. Four hours lab per week required. Prerequisite: ART S208.

### **ART S310 Intermediate Printmaking: Intaglio (Etching)**

**3 credits (1+4) J**

Developing and refinement of printmaking skills. Emphasis on combining different techniques and developing personal images. Four hours lab per week required. Prerequisite: ART S210.

### **ART S311 Intermediate Sculpture**

**3 credits (1+4) J, S**

More advanced exploration of the sculptural idea; work on an individual basis with more advanced use of a variety of techniques and materials. Prerequisite: ART S211 or permission.

### **ART S313 Intermediate Painting**

**3 credits (1+4) J, K, S**

Development of expressive skills in painting in any media. Emphasis on pictorial and conceptual problems. Four hours lab per week required. Prerequisite: ART S213.

### **ART S323 Intermediate Watercolor**

**3 credits (1+4) J, K**

Continued development in watercolor techniques using various transparent and opaque media. Emphasis on techniques and subject.

### **ART S324 Color Photography**

**3 credits (2+3) J**

Advanced techniques in color transparencies and color printing; creative use of color. Three hours lab per week required. Prerequisite: ART S221.

### **ART S330 Artists Studio, Intermediate**

**1–3 credits (variable) S**

A continuation of exploration of a variety of media. Students will design and complete independent projects.

### **ART S340 Intermediate Batik**

**3 credits (1+4) J**

Techniques of traditional and contemporary Batik are explored by intermediate students who are already familiar with basic methods. Individual images and styles are developed. Prerequisite: ART S240.

### **ART S363 History of Modern Art**

**3 credits (3+0) J**

Development of modern art forms and theories in the visual arts from the late 19th Century to contemporary art. Concentration on the artistic pluralism of 20th Century art forms: Cubism, Futurism, Surrealism, Expressionism, Constructivism, Non-objective Art, Abstract Expressionism, Pop Art, Realism and other 'isms.' Prerequisite: ART S262.

### **ART S380 Northwest Coast Art: Selected Topics**

**1–3 credits (variable) J, K, S**

Materials and techniques used in Northwest Coast art works. The subtitle of each course gives the specific art form covered. Lab requirements vary.

### **ART S381 Advanced Northwest Coast Design**

**1–3 credits (variable) J, K, S**

Advanced study of Northwest Coast designs with an emphasis on both traditional and contemporary applications. Prerequisite: 3 credits ART S281. May be repeated for credit.

**ART S382 Intermediate Northwest Coast Basketry**

**1–3 credits (variable) J, K, S**

Continued study of basket weaving, with emphasis on false embroidery, more complex weaving techniques and mastery of endings. Prerequisite: 3 credits ART S282.

**ART S385 Intermediate Northwest Coast Carving**

**1–3 credits (variable) J, K, S**

Continued study of traditional Northwest Coast carving in wood. Emphasis on more complex relief or three-dimensional carving using Northwest Coast Designs. Prerequisite: 3 credits ART S285.

**ART S386 Intermediate Northwest Coast Woolen Weaving**

**1–3 credits (variable) J, K, S**

Continued study of traditional twining techniques from the Northwest Coast Native cultures. Discussion of the history of twined regalia, dyeing and spinning techniques, as well as traditional designs. Prerequisite: 3 credits ART S286.

**ART S401 Advanced Ceramics**

**3 credits (1+4) J, S**

Advanced wheelwork and handbuilding; advanced clay body and glaze calculation as needed. Study of the practical application of ceramics in the commercial fields. May be repeated for up to nine credits. Prerequisite: ART S301 or instructor permission.

**ART S405 Senior Drawing**

**3 credits (1+4) J**

Individual development and exploration of creative interpretation in a variety of drawing media. May be repeated for credit with permission of instructor. Four hours lab per week required. Prerequisite: ART S305.

**ART S407 Advanced Printmaking: Serigraphy (Silkscreen)**

**3 credits (1+4) J**

Individual development of technical and creative processes in serigraphy. May be repeated for credit with permission of instructor. Prerequisite: ART S307.

**ART S408 Advanced Printmaking: Relief**

**3 credits (1+4) J**

Individual development of technical and creative processes in relief printing (wood cuts, wood engraving, linoleum, or collagraphs). May be repeated for credit with permission of instructor. Prerequisite: ART S308.

**ART S410 Advanced Printmaking: Intaglio (Etching)**

**3 credits (1+4) J**

Individual development of technical and creative processes in etching. May be repeated for credit with permission of instructor. Prerequisite: ART S310.

**ART S411 Advanced Sculpture**

**3 credits (1+4) J, S**

Advanced exploration of the sculptural idea in various media; metal techniques, mixed media inlay and architectural sculpture (stone and concrete). May be repeated for credit with permission of instructor. Prerequisite: ART S311.

**ART S413 Advanced Painting I**

**3 credits (1+4) J**

Individual development of technical and creative processes in painting in any media. May be repeated for credit with permission of instructor. Prerequisite: ART S313.

**ART S423 Advanced Watercolor**

**3 credits (1+4) J**

Methods, materials, and techniques of watercolor are explored at an advanced level. May be repeated for credit with permission of instructor. Prerequisite: ART S323.

**ART S430 Artists Studio, Advanced**

**1–3 credits (variable) S**

Advanced studio work in a variety of media. Students will design and complete independent projects. May be repeated for credit with instructors consent.

**ART S440 Advanced Batik**

**3 credits (1+4) J**

Techniques of traditional and contemporary Batik are explored by advanced students; perfecting techniques, exploring personal images and developing unique style. May be repeated for credit with permission of instructor. Prerequisite: ART S340.

**ART S450 Raku Pottery**

**3 credits (1+4) J**

Body and glaze development for raku purposes. Special emphasis on decorative techniques. Raku kiln building and construction employing a variety of fuels such as wood, charcoal, electricity. May be repeated for credit with permission of instructor. Prerequisite: ART S201 or permission.

**ART S480 Northwest Coast Art:  
Selected Topics**

**1–3 credits (variable) J, K, S**

Materials and techniques used in Northwest Coast Indian art are explored and applied. The subtitle of each course identifies the art form covered. Lab requirements vary. Each subtitle may be repeated for credit with permission of instructor. Prerequisite: As announced in the semester schedule.

**ART S482 Advanced Northwest Coast  
Basketry**

**1–3 credits (variable) J, K, S**

Advanced study of basket weaving, with an emphasis on design. May be repeated for credit. Prerequisite: 3 credits ART S382.

**ART S485 Advanced Northwest Coast  
Carving**

**1–3 credits (variable) J, K, S**

Advanced study of Northwest Coast carving in wood, with increased emphasis on both contemporary and traditional designs. May be repeated for credit. Prerequisite: 3 credits ART S385.

**ART S486 Advanced Northwest Coast  
Woolen Weaving**

**1–3 credits (variable) J, K, S**

Advanced study of traditional twined woolen weaving, with increased emphasis on complex designs. May be repeated for credit. Prerequisite: 3 credits ART S386.

**Astronomy (ASTR)**

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**ASTR S225 General Astronomy**

**3 credits (3+0) J, K GER**

Dealing with the physical properties of astronomical bodies, this course is intended for the general student. Earth-based and satellite observation of light, cosmic rays, meteors, stars, galaxies and other extraterrestrial phenomena are included.

**Automotive Technology  
(AUTO)**

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**AUTO S102 Introduction to Automotive  
Technology**

**3 credits (2+2) J**

Introduction to all components on an automobile. Includes career information for the automotive industry, shop safety, handtools, fasteners, and basic automotive service.

**AUTO S121 Auto Electrical I**

**3 credits (2+2) J**

Fundamental electrical theory for the automotive technician. Diagnosis and repair of starting and charging systems. Corequisite: Auto S102.

**AUTO S122 Engine Performance I**

**3 credits (2+2) J**

General engine diagnosis and engine-related service. Corequisite: AUTO S121.

**AUTO S131 Auto Electrical II**

**3 credits (2+2) J**

Theory, diagnosis, and repair of automotive electrical systems, to include testing tools, schematics, and computers. Prerequisite: AUTO S121.

**AUTO S140 Auto Engine Repair**

**3 credits (1+4) J**

Diagnosis and repair skills essential to overhaul and reconditioning of automotive internal combustion engines. Includes cylinder head, valve train, and engine block assembly service. Corequisite: AUTO 102.

**AUTO S152 Brake Systems**

**4 credits (2+4) J**

Theory, diagnosis, and repair of automotive brake systems. Corequisite: AUTO S121.

**AUTO S160 Manual Drive Trains and  
Axles**

**3 credits (2+2) J**

Theory, diagnosis, and repair of manual drive train components. Course content includes clutches, manual transmissions and transaxles, four-wheel drive components, and drive axles. Corequisite: AUTO 102.

**AUTO S162 Suspension and Alignment**

**4 credits (2+4) J**

Modern automotive suspension, alignment, and steering theory. Laboratory emphasis on inspection, service, and adjustments, including four wheel alignment. Corequisite: AUTO S121.

**AUTO S194 Auto Practicum I**

**1-6 credits (0+0+4-24)**

Provides supervised workplace experience in selected industry settings. Integrates knowledge and practice to achieve basic level competencies. Requires a valid Alaska driver's license and a personal tool box meeting industry standards. May be repeated for up to 6 credits. Prerequisite: Advisor approval.

## **AUTO S202 Fuel and Emission Systems**

**4 credits (3+2) J**

Theory and practice in diagnosing, service, and repair of automotive fuel and emission systems. Prerequisite: AUTO S122; Corequisite: AUTO S131.

## **AUTO S222 Engine Performance II**

**3 credits (2+2) J**

Diagnosis and repair of computerized engine controls and ignition systems. Prerequisites: AUTO S122; Corequisite: AUTO S131.

## **AUTO S225 Auto Heating and Air Conditioning**

**3 credits (2+2) J**

Theory, diagnosis, and repair of automotive heating and air conditioning systems. Corequisite: AUTO S121.

## **AUTO S227 Auto Electrical III**

**3 credits (2+2) J**

Theory, diagnosis, and repair of automotive electrical and electronic systems, to include accessories. Prerequisite: AUTO S131.

## **AUTO S260 Electronic and Automatic Transmissions**

**3 credits (2+2) J**

Theory diagnosis, and repair of automotive power train systems to include automatic and electronically-controlled automatic transmissions. Corequisite: AUTO S131.

## **AUTO S282 Auto Mechanics Open Lab**

**3 credits (0+6) J**

Laboratory course in automotive repair and maintenance. Students are required to develop a personal study plan based on the task list for the eight (8) ASE repair areas. Power Technology students are encouraged to take this course. Student projects are limited to component repair and running vehicles with current registration. Pass/Fail grading. May be repeated for credit. Prerequisite: AUTO S102.

## **Aviation Technology (AT)**

### **AT S100 Private Pilot Ground School**

**4 credits (4+0) J, K, S**

Investigation of the theoretical foundations of flying and preparation for the Federal Aviation Administration Private Pilot (Airplane) written examination. Includes airplane and engine operation and limitations, airplane flight instruments, navigation, the navigation computer, meteorology and aviation weather services, air traffic control, flight publications and FAA regulations. Extensive use of FAA films.

## **Biology (BIOL)**

### **BIOL S103 Biology and Society**

**4 credits (3+3) J, K, S, GER**

Fundamental principles of biology focusing on human biology, ecology and the environment. Laboratory sessions include field trips, experiments, demonstrations, and discussion of contemporary biological topics. For non-majors; cannot be used to fulfill requirement for biology majors. Co-requisite MATH S105.

### **BIOL S104 Natural History of Alaska**

**4 credits (3+3) K, S, GER**

The physical environment peculiar to the North and important in determining the biological setting: major ecosystem concepts to develop an appreciation for land use and wildlife management problems in both terrestrial and aquatic situations. May not be used as biology elective credit for a major in Biology. BIOL S104 fulfills the Natural Science core requirements.

### **BIOL S105 Fundamentals of Biology I**

**4 credits (3+3) J, K, GER**

Introduction to basic principles of cell biology and evolution. Topics include cell structure, metabolism and genetics. Co-requisite: MATH S105.

### **BIOL S106 Fundamentals of Biology II**

**4 credits (3+3) J, K, GER**

Continuation of basic principles of plants and animal anatomy and physiology. Topics include evolution, behavior, ecology, and groups of plants and animals. Prerequisite: BIOL S105; co-requisite: MATH S107.

### **BIOL S111 Human Anatomy and Physiology I**

**4 credits (3+3) J, K, S GER**

Introduces human structure and function. The integumentary, skeletal, muscular, and nervous, systems are covered. Recommended for health science students.

### **BIOL S112 Human Anatomy and Physiology II**

**4 credits (3+3) J, K, S GER**

Continuation of BIOL S111. Endocrine, circulatory, respiratory, digestive, excretory, and reproductive systems. Prerequisite: BIOL S111 or permission. Recommended for health science students.

### **BIOL S175 Current Topics in Marine Research**

**1 credit (1+0) S**

A fall symposium of lectures presented as part of the Sitka WhaleFest: A Celebration of Marine Wildlife. Marine scientists will present current research findings on topics focused on marine life around the Pacific Rim, with an emphasis on marine mammals. Students must attend an introductory class, all symposium lectures, and a follow up group discussion with invited researchers; written summaries of the lectures will be required. Students must be registered for the Sitka WhaleFest. May be repeated for credit when content differs.

### **BIOL S215 Introduction to Marine Biology**

**3 credits (3+0) J**

An introduction to the major characteristics of ocean ecosystems and the organisms that inhabit them. Includes physical, chemical, and biological principles that affect marine biodiversity. Prerequisite: BIOL S105 and S106.

### **BIOL S239 Introduction to Plant Biology**

**4 credits (3+3) J, K**

Structure, function, ecology, and evolutionary patterns of the major groups of plants. Prerequisite: BIOL S105 and S106.

### **BIOL S240 Introductory Microbiology**

**4 credits (3+3) J, K, S**

General introductory microbiology with emphasis on microorganisms as disease causing agents. Fundamentals of microbial biology and diversity including host microbe interactions and epidemiology. Prerequisite: 8 credits in biology or chemistry. BIOL S112 and CHEM S104 recommended. Note: not accepted for Biology major credit. Recommended for health science students.

### **BIOL S271 Ecology**

**4 credits (3+3) J, K**

Overview of the principles of ecology with emphasis on the organism, population, community, ecosystem and biome levels. Aspects of the physical environment are included in the organismal ecology discussions. Laboratory sessions mainly are field exercises in biological sampling and analyses. Prerequisite: BIOL S105 and either BIOL S106 or ENV S101. Corequisite: STAT S273.

### **BIOL S300 Vertebrate Zoology**

**4 credits (4+0) J**

Evolution, classification, functional anatomy and general biology of vertebrates. Alaskan species will be highlighted. Prerequisite: BIOL S105 AND S106. No lab.

### **BIOL S305 Invertebrate Zoology**

**4 credits (3+3) J**

Structure, function, classification, evolution and life histories of invertebrate animals. Marine invertebrates are emphasized. Prerequisite: BIOL S105 and S106.

### **BIOL S310 Animal Physiology**

**4 credits (3+3) J**

Chemical and physical principles underlying living processes, and the integration of these principles into the physiology of cells and whole organisms. Prerequisites: BIOL S105 and S106, MATH S107; Corequisite: CHEM S341.

### **BIOL S311 Technical Writing for Science Majors**

**3 credits (3+0) J**

In this class you will learn to write in a variety of scientific and technical forms, including reports, journal articles, and grant proposals. You will learn to write for different audiences, master the art of editing, prepare work for your ENV S portfolio or other science courses, and become adept at using online bibliographic programs. Prerequisites: ENGL 211 and upper division standing in a Science Degree Program, or permission of instructor.

### **BIOL S362 Genetics**

**4 credits (3+2) J**

Principles of inheritance; physiochemical properties of genetic systems. Prerequisites: BIOL S105 and S106, CHEM S106, MATH S107.

### **BIOL S375 Current Topics in Biology**

**2 credits (2+0) J**

Discussion of a book or series of papers on a current topic in biology. Students will lead discussions and be graded on both their presentation and their participation in discussions. May be repeated. Prerequisite: Completion of 3 science credits.

### **BIOL S382 Wetlands Ecology**

**4 credits (3+3) J**

All of the major aspects of wetlands from ice fields, alpine bogs, tarns, lakes, streams, deltas to the marine shores, emphasis is on: 1) identification of wetland categories based on aquatic plants, hydrology and soil types; 2) value, preservation, protection and restoration of wetlands; 3) federal and state regulations and 4) management, economics and mitigated use of wetlands. Laboratories will be based on local Alaskan and Northwest regional case studies and accepted regional case studies and accepted wetlands research techniques. Prerequisite: BIOL S271.

### **BIOL S384 Marine Mammalogy**

**4 credits (3+3) J**

The evolution and classification of marine mammals will be presented as a framework for understanding their adaptations, physiology, anatomy, behavior, ecology, reproduction, and mating systems. Current research techniques and conservation issues will also be reviewed. Students will write and present a paper on a special topic. Two field trips (dates TBA). Prerequisite: BIOL S105, S106, and S271. BIOL S215 recommended.

### **BIOL S396 Field Studies in Behavior and Ecology**

**1–6 credits (Variable) J**

This course provides intensive field study in selected topics in behavior and ecology with emphasis on field methods. Each student will conduct an individual research project. Field topics may entail a deferred grade. Projects may be associated with on-going research projects or new projects developed by the instructor and student. Letter grades or Pass/Fail may be arranged by permission of instructor. Number of credits will be determined by the scope of the project. May be repeated for up to 12 credits. Prerequisites: BIOL S105, S106, S271 and permission of instructor.

### **BIOL S401 Phycology**

**4 credits (2+4) J**

Survey of freshwater and marine algae with emphasis on Alaskan species. Topics include taxonomy, physiology, life histories, and ecology of the algae. Introduction to Plant Biology (BIOL S239) is recommended before taking this course. Prerequisite: BIOL S105, S106.

### **BIOL S415 Physiology of Marine Animals**

**4 credits (3+3) J**

An integration of physiological concepts with ecology and evolution to examine how organisms adapt within a diversity of marine environments including the intertidal, subtidal, and the deep sea. The course will emphasize biochemical adaptations within the processes of respiration, osmoregulation, thermoregulation, and metabolism of marine invertebrates, fishes, and marine mammals. Prerequisites: BIOL 310 and CHEM 341

### **BIOL S426 Ornithology**

**4 credits (3+3) J**

Evolution, classification, adaptations, distribution, behavior, breeding biology, population dynamics, and migration of birds. Several field trips. Prerequisite: BIOL S105 and S106.

### **BIOL S427 Introduction to Ichthyology**

**4 credits (3+3) J**

Major groups of fishes, emphasizing the fishes of north-western North America. Classification, structure, evolution, general biology and importance to man of the major groups. Prerequisites: BIOL S105 and S106.

### **BIOL S441 Animal Behavior**

**4 credits (3+3) J**

The mechanisms and adaptive nature of individual and social behaviors will be explored in lectures, readings, and laboratory and field exercises. Proximal and ultimate explanations for behavior are studied in terms of genetics, ecology, and modern evolutionary theory. Laboratory and field exercises emphasize hypothesis testing through observation and analysis of behavior. BIOL S362 (Genetics) is highly recommended before taking this course. Prerequisite: BIOL S105, S106, S271 or consent of instructor.

### **BIOL S480 Aquatic Pollution**

**3 credits (3+0) J**

Discusses all major kinds of marine pollution including oil, heavy metals, organic wastes, pulp mill effluent, PCBs, pesticides, ocean dumping, radioactive wastes, thermal pollution, marine litter and noise pollution. Effects on biological systems are emphasized. Some consideration given to legal aspects. Prerequisite: BIOL S271 and CHEM S106.

### **BIOL S481 Marine Ecology**

**4 credits (3+3) J**

In-depth study of the paradigms regarding the distribution and abundance of marine organisms including analysis and discussion of current primary literature. Major emphasis on how physical-biological interactions structure populations, communities, and ecosystems in the oceans. Students will complete a research project. Prerequisites: BIOL S215, S271 and STAT S273

### **BIOL S482 Evolution**

**4 credits (3+3) J**

This course entails in-depth study of the mechanisms of evolution. The roles of genetic variation, natural selection, and adaptation, in speciation and other evolutionary processes will be examined in an historical content. Competing schools of thought from the era of *The Origin of the Species* to recent advances in molecular evolution will be considered. Prerequisites: BIOL S105, S106 and co-requisite: BIOL S362.

### **BIOL S492 Biology Seminar**

**1 credit (1+0) J**

Provides students with first-hand accounts of current research in the biological sciences. Seminar speakers will present research results in a variety of subdisciplines, and students will discuss the significance with presenters and instructor. May be repeated. Prerequisite: BIOL S106.

### **BIOL S495 Behavioral Ecology**

**3 credits (3+0) J**

This course will teach research skills in the area of behavioral ecology and examine current issues in the study of behavior. Emphasis will be on developing testable hypotheses pertaining to the adaptive nature of behavior. Each student, in consultation with the instructor, will develop a specific project and reading list. Readings will be discussed in classroom sessions. Students will be required to prepare a research proposal including a full literature review. Animal Behavior (BIOL S441) is strongly recommended before taking this course. Prerequisites: BIOL S105, S106, S271 or permission.

### **BIOL S498 Research in Biology**

**(1-6 Variable credit) J**

Individual research in the biological sciences undertaken by a student in consultation with a member of the Biology Program faculty. Students may submit research ideas to faculty and develop them into a project with faculty input. Prerequisites: BIOL S105, S106, S271 and faculty permission via instructor approval form.

### **BIOL F649 Molecular Genetics**

**3 credits (3+0) JCSFOS**

(University of Alaska Fairbanks course)

Both the development of classical molecular genetics and the examination of recent advances are followed using papers describing the original experiments. Prerequisite: BIOL S362 and/or CHEM S342.

### **BIOL F650 Fish Ecology**

**3 credits (3+0) JCSFOS**

(University of Alaska Fairbanks course)

Interactions between fishes and their environments, applications of ecological principles to fishery management and research. Prerequisite: BIOL S427.

## **Business Administration (BA)**

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### **BA S101 Real Estate, Principles and Practices**

**3 credits (3+0) J**

Fundamentals of real estate; property rights, ownership, financing, brokerage, planning, investing and home buying and selling.

### **BA S105 Principles of Bank Operations**

**3 credits (3+0) J, K**

Fundamentals of bank functions in a descriptive fashion for the beginning banker. An overview of the profession in a broad (operational) perspective.

### **BA S151 Introduction to Business**

**3 credits (3+0) J, K, S**

Business organization, nature of major business functions such as management, finance, accounting, marketing and personnel administration. Opportunities and requirements for professional business careers.

### **BA S155 Personal Investments**

**3 credits (3+0) J**

In-depth study of investment of personal income, emphasis on investments including stocks, bonds, mutual funds, banking, insurance, real estate and other resources.

### **BA S162 Foundation Mathematics for Business Analysis**

**3 credits (3+0) J, S**

Systems of linear equations, matrix algebra, non-linear polynomial functions, differential and integral calculus. Application to business situations. Prerequisite: MATH S107 or equivalent.

### **BA S166 Small Business Management**

**3 credits (3+0) J, K, S**

Survey of core areas of business administration with particular emphasis on organization and operation of small and middle-scale businesses. Business law, personal finance, manufacturing, marketing and finance included at the introductory level.

### **BA S201 Introduction to Management and Supervision**

**3 credits (3+0) J, K**

Introduction to supervision basics dealing with human resources and the management of a business.

### **BA S223 Real Estate Law**

**3 credits (3+0) J**

(cross-listed LAWS 223)

Survey of the various kinds of deeds and conveyances, mortgages, liens, rentals, appraisals and other transactions in the field of real estate and law.

### **BA S255 New Business Creation**

**3 credits (3+0) K**

Gives students an understanding of the process of developing a business. Emphasizes creating a business plan, start up, entrepreneurship, the stages of research, and developing a business plan that has potential to develop into a viable business. Prerequisite: BA S151 or S166 or instructor permission.

### **BA S277 Business Ethics**

**3 credits (3+0) K**

Fundamentals of management of business ethics and personal managerial ethics within context of the small business owner. The student will develop a personal manager portfolio to act as a reference for ethical decision making within the workplace, and understanding of modern ethical frameworks, a personal leadership profile, and the ability to apply these competencies in the workplace through various case studies.

### **BA S301 Principles of Management**

**3 credits (3+0) J, K, S**

Survey of the basics of management. Synthesis of the traditional and contemporary quantitative and behavioral approaches to the subject of management.

### **BA S310 Management Information Systems**

**3 credits (3+0) J**

Provides a managerial perspective showing how to use information systems. Course enables students to understand the information systems planning cycle covering five functional areas: financial, marketing, manufacturing and production, human resources, and office information systems. Prerequisite: CIOS 135 and 235 or 140 and 240

### **BA S311 Consumer Behavior**

**3 credits (3+0) J**

Examines how and why we behave as consumers and the implications for marketing. Practical application of the fundamental principles is emphasized. BA S343 recommended.

### **BA S325 Financial Management**

**3 credits (3+0) J, K**

Intensive analysis of the methods of financial planning and control, asset management, and other functions performed by the financial executive. Prerequisites: ACCT S201 and STAT S273.

### **BA S330 Legal Environment of Business**

**3 credits (3+0) J, K, S**

(cross-listed LAWS S330)

This course examines business in its relation to the legal and judicial systems and to government regulation. It explores legal concepts and issues pertaining to competition, sales, employees, liabilities and forms of doing business.

### **BA S332 Contracts**

**3 credits (3+0) J**

Law related to the formation of a contract including the offer, acceptance and consideration; defenses to the formation and enforcement of contracts, performance of contracts, excuse, discharge and damages. Prerequisite: LAWS S101 or BA/LAWS S330.

### **BA S334 Advanced Business Law**

**3 credits (3+0) J**

(cross-listed LAWS S334)

This course is designed to supplement BA/LAWS 330, Legal Environment of Business. It may be of special interest to students anticipating the CPA Exam, but it is appropriate for any student wishing to supplement their knowledge of business law through an upper division elective. Prerequisite: LAWS S101 or BA/LAWS S330.

### **BA S343 Principles of Marketing**

**3 credits (3+0) J, K**

Role of marketing in society and economy; the business firm as a marketing system; management of the firm's marketing effort.

### **BA S351 Organizational Behavior**

**3 credits (3+0) J**

Departmentalization, motivation, job enrichment and business organization. Problem solving skills as applied to organizational problems.

### **BA S359 Regulation of Industry**

**3 credits (3+0) J**

Effects of government regulation, economic policy and executive policy on private and public enterprise. Prerequisite: ECON S201.

### **BA S360 Business Organizations**

**3 credits (3+0) J**

(cross-listed LAWS S360)

This course will cover the theoretical and substantive aspects of the formation, operation, and dissolution of various types of business organizations. The subjects will include the law of sole proprietorships, partnerships, limited liability companies, and corporations. Aspects of agency and employment law will also be examined.

### **BA S361 Human Resource Management**

**3 credits (3+0) J**

Human Resources Management and practice in industry; analysis of labor management problems; methods of administration for recruiting, selecting, training and compensating employees; labor laws and their applications.

### **BA S374 Introduction to Quantitative Methods**

**3 credits (3+0) J**

Introduction to quantitative methods for business. Includes an overview of statistics and coverage of current quantitative techniques used for management decision making such as linear programming, PERT/CPM, simulation analysis and decision trees. Prerequisite: MATH S107

### **BA S375 Project Management**

**3 credits (3+0) J**

A holistic approach to project management: planning, scheduling, organizing, and controlling projects. Primary class emphasis is on project management process and tools, which are becoming increasingly more important in today's competitive marketplace. Prerequisite: MATH S107 (or equivalent) and STAT 273.

### **BA S385 Quality Management**

**3 credits (3+0) J**

Presents philosophy of quality management as a strategy for business survival and success. Techniques to increase customer satisfaction by total employee involvement and continuous improvement of processes related to the provision of products and services. Prerequisite: BA S301.

### **BA S412 Operations Management/Production**

**3 credits (3+0) J**

Management of operations/production/service system with emphasis on quantitative analysis. Characteristics of systems, types of production and service systems, forecasting, scheduling, facility design, and other topics in operations management will be covered. Quantitative techniques include linear, integer and goal programming as well as forecasting and queuing models. Prerequisites: MATH S107 (or equivalent) and STAT S273.

### **BA S441 Retailing Management**

**3 credits (3+0) J, K, S**

Analysis of managerial problems in retailing establishments. Focus is on operational problems, retail store organizational problems, retail store organization, location analysis, buying, selling, sales promotion, and merchandise handling. Prerequisite: BA S301 and S343.

### **BA S445 Marketing Research**

**3 credits (3+0) J**

The basic process and tools of marketing research. In addition to addressing data collection and analysis techniques, the course emphasizes the appropriate use of marketing research in managerial decision making. Students are required to design and implement a market research study. Prerequisites: BA S343 and STAT S273.

### **BA S446 Services Marketing**

**3 credits (3+0) J**

Affords students multiple opportunities to apply fundamental marketing concepts to relevant Alaskan services such as tourism and higher education. Prerequisite: BA S343.

### **BA S447 International Marketing**

**3 credits (3+0) J, K, S**

Emphasizes the planning, organizing, coordinating, and controlling functions of international marketing management. Includes analysis of consumers and target markets, marketing research and promotion decisions applied to international markets. Prerequisite: BA S343.

### **BA S448 Marketing for Non-Profits**

**3 credits (3+0) J**

Explores the practical application of marketing concepts to the unique restrictions and cultures of nonprofit organizations, including their relationship to the public. Prerequisite: BA S343.

### **BA S450 Investments**

**3 credits (3+0) J**

An introduction to securities and their valuation with particular attention to the concepts of risk and rate of return. Portfolio theory and management are also covered. Prerequisites: BA S325, STAT S273.

### **BA S461 Labor–Management Relations**

**3 credits (3+0) J**

Assists executives, administrators and union business agents in the private and public sectors or students who aspire to such careers in dealing with collective benefit efforts of employees as developed and controlled by tradition, regulatory agencies and the courts. Course work focuses on organizing, negotiating, arbitrating and the duty of a union.

### **BA S462 Administrative Policy**

**3 credits (3+0) J**

In–depth case study analyzing companies’ administrative policies concerning marketing segmentation between industries and policy differences within industries. Designed as a capstone course for senior BBA students. Prerequisites: BA S301, BA S325, BA S343, STAT S273.

### **BA S463 Marketing Communications**

**3 credits (3+0) J**

The importance and use of an integrated marketing communications approach to the planning and execution of the marketing mix variable of promotion is explored. Practical application of the fundamental principles is emphasized. BA S343 recommended.

### **BA S465 Strategic Management for Non-Profits**

**3 credits (3+0) J**

The application of strategic management principles to the private and public non-profit sector. Emphasis is placed on strategic business management practices including planning, analysis of environment, development of strategy, execution, and control. Focus is on the similarities and differences between for-profit businesses and the non-profit sector.

### **BA S480 Organization Theory**

**3 credits (3+0) J**

Literature of organization theory; emphasis on theoretical concepts, social science research techniques and organizational behavior.

### **BA S485 New Business Ventures**

**3 credits (3+0) J**

Readings and case studies focusing on independent businesses and new business ventures. Sources of information, common problems of startups and methods for analyzing situations for profitable entry are covered. Prerequisites: ACCT S202, BA S325, and BA S343.

### **BA S487 International Business**

**3 credits (3+0) J**

This course provides a comprehensive examination of international business environments and practices. Attention is given to how differences in culture, political/legal systems, and economic systems influence business practices and trade patterns. Special attention is given to how globalization influences business practices. Prerequisites: ECON S201.

### **BA S490 The Political and Social Environment of Business**

**3 credits (3+0) J**

Policy decisions and governmental regulations affecting business as well as the social responsibility of business in society. Prerequisite: ECON S201.

### **BA S602 Introduction to Management Science**

**3 credits (3+0) J**

Linear programming, PERT, CPM, forecasting and simulation, decision analysis.

### **BA S610 Management Information Systems**

**3 credits (3+0) J**

Focuses on information systems and how information technology affects business strategy and operations. While a foundation is laid regarding terminology and concepts, the class explores more deeply how information technology affects marketing, strategic planning, and personnel. Students will research how information technology affects their employer and other organizations, as well as case studies gathered throughout the world. The objectives of the course are to enable students to better understand information technology, to more effectively communicate with IT personnel and specialists, and to better manage information systems.

### **BA S612 Organization Theory and Behavior**

**3 credits (3+0) J**

Combines the study of organizations with the study of the individual in the organization. Historical foundations and principles of administration are presented. Classical as well as state-of-the-art administrative philosophies are explored. The course also addresses the evolution of the study of individual behavior in the workplace-theories and concepts of leadership, motivation, conflict, stress, communication, and group dynamics within the organizational environment are explored. Prerequisite: BA S301 or equivalent.

### **BA S618 Administrative Law for Managers**

**3 credits (3+0) J**

An exploration of the principles of administrative law and their relationship to modern decision techniques. An emphasis will be placed on practical decision-making in the context of modern administrative legal constraints and methods to achieve goals within these constraints.

### **BA S625 Economics of Public Policy**

**3 credits (3+0) J**

Examination of economics in relation to public policy, both as a determinant of policy and a tool of administration. Emphasis on government regulation of industry and business influences on government. Prerequisite: ECON S201 and S202 or equivalent.

### **BA S626 Managerial Economics**

**3 credits (3+0) J**

Application of economic concepts to business demand, production theory, market structure, government's role in a market economy, capital budgeting, cost-benefit analysis. Prerequisite: STAT S273 or equivalent

### **BA S628 Managerial Accounting**

**3 credits (3+0) J**

Assumptions and concepts underlying financial statements. The analysis and uses of financial statements and cost accounting information for decisions and controls. Prerequisite: ACCT S202 or equivalent.

### **BA S646 Service Operations Management**

**3 credits (3+0) J**

Participants gain understanding of the nature of service quality, customer expectations and satisfaction, and how service organizations can achieve quality objectives. Learn to translate customer perceptions into operational metrics, structure the service delivery system to effectively meet customer needs, and manage capacity and demand for the delivery process. Participants gain insight into the key issues in service operations management, and competence in the quantitative tools used. Prerequisite: ACCT S202 or equivalent.

### **BA S652 International Business**

**3 credits (3+0) J**

This course examines the problems of strategy and competition in the international business environment. Topics include: political risk, currency and exchange exposure, foreign currency repatriation, governmental subsidies and tariffs, market barriers, debt for resource exchanges, and innovative transaction structures. Particular attention is given to the Pacific-Rim.

### **BA S670 Human Resource and Personnel Administration**

**3 credits (3+0) J**

Survey of principles and practices in recruitment, selection and placement of personnel. Orientation programs, administrator relationships, code of ethics, merit rating, certification and other relationships involving supervisors and staff members.

### **BA S689 Research In Business Administration**

**3 credits (3+0) J**

In-depth examination of the various methods and techniques employed by those who do research in business and public administration or interpret and evaluate the research of others. Prerequisite: STAT S273 or equivalent.

### **BA S690 Business Administration Capstone**

**3 credits (3+0) J**

Focuses on the overall management of the organization, as well as the application of concepts and methods to general and specific problems and opportunities. Students are required to define and diagnose problems and opportunities, to generate and evaluate alternative courses of action, and to recommend and defend courses of action, and to present ideas and logic clearly and effectively in written and verbal presentations. Prerequisites: the completion of all core requirements and all but 9 credits of the MBA program.

### **BA S692A Seminar in Finance**

**3 credits (3+0) J**

Survey of finance topics pertinent to business organizations. Topics include making decisions using present value concepts; the review of risk, return, and the opportunity cost of capital; capital investment decision making; market efficiency and corporate financing techniques; debt financing; risk management; working capital management; international concerns, governance and corporate control around the world. Prerequisite: BA S325 or equivalent.

### **BA S692B Seminar in Marketing**

**3 credits (3+0) J**

Survey of basic concepts in marketing; understanding customer needs and wants, developing appropriate products and services, structuring service systems and interactions, customer contact personnel, pricing, distribution, and marketing communications. Case studies will examine how social, economic, and cultural factors affect marketing, and how to use marketing concepts in specific competitive environments. Prerequisite: BA S343 or equivalent.

## **Chemistry (CHEM)**

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### **CHEM S100 Introduction to Chemical Science**

**3 credits (3+0) J, K, S GER**

Introduction to chemistry for the non-science major. Includes units of measurement, atomic and molecular structure, chemical bonding, metabolism, radioactivity oxidation–reduction reactions, solutions, acids and buffers.

### **CHEM S103 Introduction to General Chemistry**

**4 credits (3+3) J, K, S GER**

Fundamentals of chemistry including the historical and descriptive aspects as well as basic mathematical concepts. Prepares students to take CHEM S105. Prerequisite: MATH S105.

### **CHEM S104 A Survey of Organic and Biochemistry**

**4 credits (3+4) J, K, S**

Fundamentals of chemistry as applied to biological systems. Bridges the gap between a general chemistry course and the biological concepts of other health related sciences. Recommended for health–science degree majors. Prerequisite: CHEM S103.

### **CHEM S105 General Chemistry I**

**4 credits (3+4) J, K, S GER**

Introduction to chemistry, including atomic and molecular structure; the principles of chemical change and related energy changes. Four hours lab per week required. Concurrent enrollment in CHEM S105R is highly recommended. Prerequisites: high school chemistry and MATH S107.

### **CHEM S105R General Chemistry I Recitation**

**1 credit (1+0) J**

Provides direction and review of the concepts and calculations covered in General Chemistry I. Quizzes, homework problems, and exams presented in CHEM S105 will be covered extensively. Requires concurrent enrollment in CHEM S105 or instructor permission. Pass/Fail grading.

### **CHEM S106 General Chemistry II**

**4 credits (3+4) J, K, S GER**

Introduction to chemistry, including atomic and molecular structure; the principles of chemical change and related energy changes. CHEM S106 includes the chemistry of the elements. Four hours lab per week required. Prerequisite: CHEM S105 with a “C” or better. Concurrent enrollment in CHEM S106R is highly recommended.

### **CHEM S106R General Chemistry II Recitation**

**1 credit (1+0) J**

Provides direction and review of the concepts and calculations covered in General Chemistry II. Quizzes, homework problems, and exams presented in CHEM S106 will be covered extensively. Requires concurrent enrollment in CHEM S106 or instructor permission. Pass/Fail grading.

### **CHEM S341 Organic and Biological Chemistry I**

**4 credits (3+4) J**

Theory and laboratory covering the fundamentals of organic chemistry including functional group reactivities, stereochemistry and spectroscopy. The laboratory provides practical experience with emphasis on organic synthesis, natural products and structure identification. Four hours lab per week required. Prerequisite: CHEM S106 with a C or higher.

### **CHEM S342 Organic and Biological Chemistry II**

**4 credits (3+4) J**

Lecture and laboratory which introduce the fundamental principles of biochemistry. Topics include structure and function of biological molecules, properties of enzymes, kinetics, bioenergetics, metabolism and molecular biology. Four hours lab per week required. Prerequisite: CHEM S341 with a C or higher.

### **CHEM S350 Environmental Chemistry**

**4 credits (3+4) J**

Provides a general overview of chemical processes in the natural environment. Subjects include the chemistry of natural and anthropogenically influenced processes in air, soil, and water; energy production and its impact. Laboratory focuses on the analytical tools and methods used in chemical analyses of environmental samples. Prerequisite: CHEM S106 with C or higher. CHEM S341 recommended.

## **Communication (COMM)**

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### **COMM S110 Basic Speaking**

**1 credit (1+0) J**

Develop comfort and skills in communicating with others. Work individually with instructor and in small groups to determine extent of reticence; learn anxiety relieving techniques, and design and implement behavior change strategies. Recommended for those who need to overcome speaking apprehension before moving on to the GER speech communication requirement. (This course does not satisfy that GER requirement). Pass/Fail grades.

### **COMM S111 Fundamentals of Oral Communication**

**3 credits (3+0) J, K, S GER**

Introduction to oral communication focusing on interpersonal, small group, and public speaking processes. Covers skills for improving feedback, active listening, language usage, non-verbal behavior, audience analysis, and techniques for speech preparation, delivery and alleviating speaking anxiety. Students need to complete class with a "C" or higher to fulfill their speech communication GER. Prerequisite: Completion of or simultaneous enrollment in ENGL S110 or S111 or instructor permission.

### **COMM S218 Studies in Human Communication**

**1-3 credits (1-3+0) J**

Advanced analysis and application of selected topics from the field of communication. Topics may include but are not limited to: Nonverbal communication, relational communication, discourse, power and ideology, listening, or persuasion. The specific topic is announced in the semester course schedule. May be repeated for credit when content varies. Prerequisite: ENGL S111 (C or higher) or instructor permission.

### **COMM S220 Leadership I**

**3 credits (3+0) J**

Development of leadership ability in a university setting is the central focus. Course provides principles of leadership theory transferable to any setting. Learners develop a personal philosophy of leadership, and awareness of the moral and ethical responsibilities and their own style and skills of leadership. Through multicultural texts, popular film, interdisciplinary research, and practical application, students acquire insight on such critical leadership tasks as team building, using power and influence, applying intuition, establishing a vision, and empowering others. Prerequisite: ENGL S111 (C or higher) and in one of COMM S111, S235, S237, or S241.

### **COMM S235 Small Group Communication and Team Building**

**3 credits (3+0) J, K, S GER**

Practical application of the theories of interaction, information sharing, decision making, team building, and problem solving processes to small group situations. Principles of conflict, leadership, group roles, self evaluation, evidence, and reasoning are explored through group observation, practice and analysis. Prerequisite: ENGL S111 (C or higher) or instructor permission.

### **COMM S237 Interpersonal Communication**

**3 credits (3+0) J, K, S, GER**

Understanding and building interpersonal communication skills. Students use experiential and oral performance approaches to explore non-verbal and verbal channels, emotions, empathetic listening, perception, self-disclosure, and conflict in significant relationships. Students need to complete class with a "C" or higher to fulfill their speech communication GER. Prerequisite: ENGL S111 (C or higher) or instructor permission.

### **COMM S241 Public Speaking**

**3 credits (3+0) J, K, S GER**

Preparation, delivery and analysis of speeches in various platform speaking situations. Theories and practices of delivery, managing stage fright, organization, critical listening, audience analysis, and persuasion are explored. Prerequisite: ENGL S111 or equivalent.

### **COMM S250 Introduction to Human Communication Studies**

**3 credits (3+0) J**

Explores the historical overview of the discipline and surveys relevant research and theory as it relates to various communication contexts. Prerequisite: A lower division COMM course and ENGL S111 (C or higher), or instructor permission.

### **COMM S291 Communication Internship**

**1-9 credits (0+0+4-36) J**

Student work experience while employed (paid or unpaid) by a business or organization, under the supervision of both a qualified professional in the work situation and a faculty member. Prerequisite: Admission to a program, demonstration of preparation for internship activity, and instructor permission via approval form.

### **COMM S294 Communication Practicum**

**1-9 credits (0+0+4-36) J**

A classroom or work-related project supervised by a faculty member and an on-site individual who supervises the practicum focus area. Emphasis is on practical applications of oral and, to a lesser extent, written communication competencies in an appropriate environment. Prerequisite: Instructor permission via approval form.

### **COMM S320 Argumentation and Debate**

**3 credits (3+0) J**

Introduction to argumentation theory and debate. Critical analysis and principles of logic, reasoning and discursive evidence in the construction of argument in a variety of contexts. Develops understanding of the nature of argument and its key elements; explores standards and ethics used to evaluate argument; and charts variation of standards across contexts. Strategies in creation and performance, including opportunities for performance and competition. Prerequisite: ENGL S211 (C or higher) and one of: COMM S111, S235, S237, or S241; or instructor permission.

### **COMM S330 Intercultural Communication**

**3 credits (3+0) J**

Understanding the communication process that occurs when people of different cultures interact. Topics include perception, stereotyping, language and nonverbal concepts of kinesics, time and space. Special emphasis on analyzing the communication differences that make a difference with Alaska cultures. This course meets the state requirement for certification in multicultural education. Prerequisite: Lower division communication course or permission, and ENGL S111 or equivalent.

### **COMM S335 Organizational Communications**

**3 credits (3+0) J**

A practical career-oriented course designed to help students cultivate a repertoire of speaking and listening skills as they prepare for the world of business and the professions. This research based class provides practice opportunities to lead meetings, train peers, and do job interview, performance appraisal, and information gathering. Students will work on a team problem-solving project and practice resolving conflict. Analysis of work settings to understand strategic organizational communication, structure and culture. Prerequisite: A lower division communication course and ENGL S111 (C or higher), or permission.

### **COMM S340 Media Studies**

**3 credits (3+0) J, S**

Examines major theoretical frameworks for analyzing traditional and digital media, and techniques for applying those theories to specific media products and genres. Using various theoretical lenses, students will examine a wide variety of media, including advertising, film, television, news, and the Internet. Students will also investigate economic and political aspects of the media and will explore the ways that race, gender, and class are presented in media products. Prerequisites: ENGL S211 (C or higher) or instructor permission.

### **COMM S346 From Page to Stage: Oral Interpretation**

**3 credits (3+0) J**

Drawing upon literature, this course examines the fundamentals of text selection, analysis, and evaluation, bringing literature to life for the enjoyment of others. Through class discussions and performances, students will develop an intellectual and emotional responsiveness to poetry, prose, and drama and learn a variety of vocal and physical expressive skills for effective oral interpretation of literature. Exposure to different venues and opportunities for public performance and forensic (OI and Reader's Theatre) competition included. Prerequisite: Lower division COMM course and ENGL S211 (C or higher), or instructor permission.

### **COMM S380 Communication Theory**

**3 credits (3+0) J**

A review of the research, theoretical assumptions, and modes of the oral communication process. Designed to provide a broad understanding of the basics of oral communication as patterned human behavior. Focus will be on application and critical analysis of theoretical models. Prerequisite: Lower division COMM course and ENGL S211 (C or higher), or instructor permission.

### **COMM S418 Advanced Studies in Human Communication**

**1-3 credits (1-3+0) J**

Advanced analysis and application of selected topics from the field of communication. Topics may include but are not limited to: nonverbal communication, relational communication, discourse, power and ideology, listening, or persuasion. The specific topic is announced in the semester schedule. May be repeated for credit when content varies. Prerequisite: A lower division COMM course and ENGL S311 (may be concurrent), or instructor permission.

### **COMM S420 Leadership II**

**3 credits (3+0) J**

The development of leadership ability in a university setting is the central focus of this course. The course provides principles of leadership theory transferable to any leadership setting. Learners develop a personal philosophy of leadership, an awareness of the moral and ethical responsibilities of leadership, and an awareness of their own style and skills of leadership. Through the study of multicultural texts, popular film, interdisciplinary research, and practical application, students acquire insight on such critical leadership tasks as team building, using power and influence, applying intuition, establishing a vision, and empowering others. Analytical research paper required. Prerequisite: A lower division COMM course and ENGL S311 (may be concurrent), or instructor permission.

### **COMM S451 Gendered Interpersonal Communication**

**3 credits (3+0) J**

Using a life development approach and emphasizing cultural construction of gender, this course will review sex differences and stereotypes that impact communication. This course focuses on communication between men and women. Class lectures, discussions, individual presentations, and group work will examine current research on gender differences and how these influence communication in personal, professional, education, and media contexts. Prerequisite: A lower division COMM course, and ENGL S311 (may be concurrent), or instructor permission.

### **COMM S452 Family Communication**

**3 credits (3+0) J**

Provides students with a general theoretical overview of family communication dynamics with application of communication skills aimed at describing, evaluation, and improving family communication. Issues related to family systems and communication include definition of family, impact of social systems on family, systems theory, rules, roles and family topologies, and family culture, ritual and narratives. Prerequisite: A lower division COMM course and ENGL S311 (may be concurrent), or instructor permission.

### **COMM S460 Rhetorical Criticism**

**3 credits (3+0) J**

Examines contemporary methods of rhetorical criticism as applied to the invention, circulation, and regulation of various public discourses. Emphasis on those analytical skills relevant to the effective critique and consumption of the rhetoric of public policy and social problems. Prerequisite: A lower division COMM course and ENGL S311 (may be concurrent), or instructor permission.

### **COMM S475 Communication in Education and Training**

**3 credits (3+0) J**

Provides teachers and trainers with the theories and concepts needed to understand the nature of human communication process as it occurs within their educational settings. Learners research and develop instructional units in communication and appraise their own communication competency. Opportunities for improved performance in dyadic relationships, small group discussion and facilitation, and public presentations provided. Prerequisite: A lower division COMM course and ENGL S311 (may be concurrent), or instructor permission.

### **COMM S491 Advanced Communication Internship**

**1-9 credits (0+0+4-36)**

Student work experience while employed (paid or unpaid) by a business or organization, under the supervision of both a qualified professional in the work situation and a faculty member. Prerequisite: Admission to a program, demonstration of preparation for internship activity, and instructor permission via approval form.

### **COMM S494 Advanced Communication Practicum**

**1-9 credits (0+0+4-36)**

A classroom of work-related project supervised by a faculty member and an on-site individual who supervises the practicum focus area. Emphasis is on practical applications of oral and, to a lesser extent, written communication competencies in an appropriate environment. Prerequisite: Instructor permission.

## **Computer Information and Office Systems (CIOS)**

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### **CIOS S052 Photo Editing for Home Users**

**3 credits (3+0) J, K, S**

Learn how to create and edit digital pictures for use in a non-professional environment, and work with digital images without having to learn the technical aspects of computing. May be taken in one-credit modules. Part A: Introduction to digital image editing. Part B: Taking and editing pictures. Part C: File size, preparing for Internet use, and third-party plug-in programs. Does not apply to graduation requirements.

### **CIOS S057 Web Page Creation for Home Users**

**3 credits (3+0) J,K,S**

Learn how to design and create small websites for home or personal use. Topics include an overview of how the Internet and web browsers work, the use of a current web editor, fundamentals of page design, text entry, linking, tables, upload and download, and an introduction to styles. May be offered in one-credit modules (CIOS S057A, B, and C). Part A covers introduction to web page development. Part B covers web page background, images, and colors. Part C covers hyperlinks, galleries, and style sheets. This course does not apply to graduation requirements.

### **CIOS S100 Computers for Absolute Beginners**

**1 credit (1+0) J, K, S**

Introduces the computer novice to the basic components of a microcomputer and common software applications.

### **CIOS S101 Computer Keyboarding and Formatting**

**3 credits (3+0) J, K, S**

Presents touch keyboarding techniques and document formatting. May be offered in two parts (CIOS S101A and CIOS S101B). Part A (1 credit) covers keyboarding with emphasis on development of speed and accuracy using the touch method. Part B (2 credits) introduces horizontal and vertical centering, tables, business letters, memorandums, short reports, multi-page reports, and administrative forms. Formatting functions common to word processing programs will be introduced.

### **CIOS S102 Keyboarding Skillbuilding**

**1 credit (0+2) J, K, S**

Improves keyboarding speed and accuracy using correct techniques on a microcomputer. May be repeated up to three times for additional credit. Prerequisite: 25 net words a minute by touch.

### **CIOS S108 Graphic Design Fundamentals for Computer Applications**

**3 credits (3+0) J, K, S**

Focuses on effective integration of design elements, color management and theory, typography and imagery to create dramatic graphic design for both print and web media. Introduces the relationship between graphic design and target marketing. Prerequisite: CIOS S110A or placement test.

### **CIOS S110 Microcomputer Operating System**

**3 credits (3+0) J, K, S**

An in-depth look at a computer's operating system. May be offered in two parts (CIOS 110A and 110B). Part A (1 credit) covers how to use the major features of the operating system: window manipulation, desktop management, and file and hard disk management. Part B (2 credits) includes installing and customizing the operating system, disk maintenance, adding and removing hardware and programs, securing the operating system, data backup, and computer performance and diagnostics. Course may be repeated using a different operating system. Prerequisite: CIOS 100 (for Part B: CIOS S110A), or placement test.

### **CIOS S111 Microcomputer Concepts**

**2 credits (2+0) J, S, K**

An in-depth study of how to operate, connect, and protect computers. Topics include the four parts of a computer system (input, processing, output, and storage), communications and networks, applications software, the Internet and World Wide Web, operating systems and system software, computer security, privacy and ethics, and programming language and program development. Prerequisite: CIOS S100 or CIOS placement test.

### **CIOS S113 Multi-Platform Operating Systems**

**3 credits (3+0) J, K, S**

This course covers the fundamentals of POSIX derived operating systems, such as LINUX, that can be run on diverse architectures from minicomputers to mainframes.

### **CIOS S116 Business Mathematics**

**3 credits (3+0) J, K, S**

Helps students improve proficiency with basic math skills and apply mathematical concepts (fractions, decimals, and percentages) to business situations. Covers payroll, taxes, insurance, simple interest, compound interest, installment purchasing, annuities, depreciation, financial statements and ratio analysis, stocks, bonds and profit distribution, and business statistics. NOTE: This course will not transfer or substitute for BA S162. Prerequisite: CIOS Math Placement Test.

### **CIOS S118 Information System Mathematics**

**3 credits (3+0) J, K, S**

Introduction to how computers deal with numbers, calculations, and logic. Topics include formats for data types, algebra as it applies to computing, writing Boolean expressions, logic and arguments, number bases, elementary statistics, graphical decision-making tools, charting, and an introduction to data structures.

### **CIOS S125 Message/Scheduling Management**

**1 credit (1+0) J, K, S**

Introduces personal information management by incorporating electronic message and scheduling systems. Covers custom personal electronic mail, scheduling and calendar management. Prerequisite: CIOS S110A

### **CIOS S132 Word Processing Concepts and Applications**

**3 credits (3+0) J, K, S**

May be offered in two modules (CIOS 132A and CIOS 132B). Part A (1 credit) is fundamental word processing concepts and hands-on practice with a current word processing application. Students use basic word processing tools to create a variety of professional documents. Part B (2-credits) covers intermediate features such as styles, outlines, tables, merging, linking, embedding, and table of contents; and advanced features such as templates, on-screen forms and fields, document management, and macros. Course prepares students to take the MOUS (Microsoft Office User Specialist) expert exam for MS Word. Prerequisite: CIOS S110A or CIOS placement test.

### **CIOS S135 Using Spreadsheets in the Workplace**

**1 credit (1+0) J, K, S**

Introduces the use of electronic spreadsheet software for reporting and analyzing information. Covers creating, designing, and modifying spreadsheets, simple formulas and charts. Prerequisite: CIOS S110A or CIOS placement test.

### **CIOS S140 Using Databases in the Workplace**

**1 credit (1+0) J, K, S**

Learn to use a database from the perspective of the data entry operator. Course covers table creation and the basic data types, form creation using wizards, elementary querying, filtering, and basic report generation. Prerequisite: CIOS S110A or CIOS placement test.

### **CIOS S146 Internet Concepts and Applications**

**3 credits (3+0) J, K, S**

A beginning to intermediate course on using the Internet. May be offered in two parts (CIOS S146A and CIOS S146B). Part A (1 credit) focuses on the history of the Internet, using a browser for e-mail, and exploring and searching the Internet. Part B (2 credits) covers security and ethics issues, search strategies, communication tools, basic HTML, and new Internet technologies. Prerequisites: CIOS S110A or CIOS Placement Test.

### **CIOS S151 Presentation Graphics Concepts and Applications**

**1 credit (1+0) J, K, S**

Utilizes a computer presentation graphics program to organize and create professional presentations. Emphasis is placed on effective design strategies. Prerequisite: CIOS S110A or CIOS Placement Test.

### **CIOS S152 Digital Image Editing Concepts and Applications**

**3 credits (3+0) J, K, S**

Teaches additive color theory, tool usage, best use of image formats and modes, layers, color adjustment and color correction for camera-generated pictures, color channels, filtering, pathways, and masks. Includes automated tools such as actions and droplets, file optimization and compression options, prepress preparation of images, and printing theory and practice. Corequisite: CIOS 108.

### **CIOS S157 Web Site Graphics, Design, and HTML**

**4 credits (4+0) J,K,S**

Create web pages and sites using HTML and web editors for commercial use. Emphasis on good page layout and site design using W3C standards. Web graphic skills are integrated into this course and cover backgrounds, slices, animated GIFs, image maps, vectored and bitmapped images, library items, and effective use of color. Prerequisite: CIOS S152.

### **CIOS S160 Business English**

**3 credits (3+0) J, K, S**

Applies the principles of English grammar, style, and usage to business correspondence. Topics include capitalization, numbers, abbreviations, word division, forms of address, and techniques for editing and proofreading particularly as applied to electronic documents.

### **CIOS S165 Administrative Support Procedures**

**3 credits (3+0) J, K, S**

Covers administrative support procedures including telephone technology and techniques, customer service and public relations, appointments and schedules, mail and shipping services, reprographics, equipment and supplies, meeting and conference planning, travel arrangements, reference materials, and office ergonomics. Prerequisites: CIOS S101B, CIOS S130, CIOS S135, and CIOS S146.

### **CIOS S166 Medical Office Procedures**

**3 credits (0+6) J, K, S**

Acquaints the prospective medical office employee with various procedures. Topics include medical law and ethics, human relations, receiving patients, scheduling appointments, financial records, and billing. Prerequisite: CIOS S101B or equivalent.

### **CIOS S170 Programming Fundamentals**

**3 credits (3+0) J, K, S**

Learn sound programming techniques using current software. Course teaches computing fundamentals, starting with the workings of simplified digital computers and elementary data structures and progressing to control flow, variables, objects, properties, methods. Includes an introduction to arrays, queues and stacks, and elementary algorithms based on those data structures. Corequisite CIOS S118.

### **CIOS S171 Web Scripting**

**3 credits (3+0) J, K, S**

Introduction to scripting languages. Provides an overview of browser scripting concepts and hands-on practice using a current scripting language. Topics include basic input and output, data types, flowcharting, command formatting, variables, constants and arrays, expressions, language statements for decisions and iterations, subprocedures and functions. Prerequisite: CIOS S170.

### **CIOS S209 Maintaining and Upgrading Your PC I**

**3 credits (3+0) J, K, S**

Introduces students to maintaining, upgrading, and troubleshooting PC's. Students will study in depth the function of computer systems. Focus is on technical expertise and practical application in information technology service industry. Covers basic computer architecture, the CPU, the system BIOS, memory, motherboards, power supplies, various input devices, and disk drives. Prerequisite: CIOS S110 and CIOS S111.

### **CIOS S210 Maintaining and Upgrading Your PC II**

**3 credits (3+0) J, K, S**

Introduces personal computer users to maintaining, upgrading and troubleshooting their PCs. Students will study in depth the function of computer systems. Focus is on technical expertise and practical application in information technology service industry. Students will learn to install, update and secure simultaneous operating systems. Student will learn how operating systems have evolved and how they integrate with computer components. Other topics will cover video, sound, CDs, printers, SCSI, portable computers, dialup and networking basics. Prerequisite: CIOS 110 and CIOS 111.

### **CIOS S222 Techniques of Cryptology**

**3 credits (3+0) J, K, S**

Covers cryptology and cryptanalysis theory. Enciphering by simple substitution, transposition, and polyalphabetic. Decipherment by frequency analysis and other statistical techniques. Covers computer ciphers including enigma and other rotor ciphers. Computer-based encipherment and cryptanalysis. Prerequisite: CIOS S118 and CIOS S110A.

### **CIOS S235 Spreadsheet Concepts and Applications**

**3 credits (3+0) J, K, S**

Use of electronic spreadsheet software as a problem-solving and decision-making tool. Covers creating, designing, and modifying spreadsheets, formulas and charts. Includes simple databases, integration of spreadsheets with other programs, advanced functions, tools, and macros. Prerequisite: CIOS S110A or CIOS placement test. Corequisite: MATH S105 or CIOS S118.

### **CIOS S240 Database Concepts and Applications**

**3 credits (3+0) J, K, S**

Design and create databases from the perspective of the database designer. Teaches table design, relationship building, form creation and editing, complex querying, advanced report generation, graphical user interface creation, and basic database programming. Prerequisite: CIOS S110A or CIOS placement test. Corequisite: MATH S105 or CIOS S118.

### **CIOS S241 Introduction to Networking and the OSI Reference Model**

**4 credits (4+0) J, K, S**

Part one of a four-part sequence. Provides an in-depth study of fundamental computer networking and data communications concepts essential in planning and implementing a network within an organization. Topics include: the Open Systems Interconnection (OSI) seven layer reference model, hardware used in the various layers, Internet Protocol (IP) and Media Access Control (MAC) addressing protocols and standards required in both hardware and software areas of networking, sub-networking and determining/calculating subnet masks, data encapsulation, the Transmission Control Protocol/Internet Protocol (TCP/IP) network layer protocol, fabricating Ethernet cables, and designing a network. Prerequisite: CIOS S110A or CIOS placement test. Corequisite: CIOS S118.

### **CIOS S244 Internetwork Router Configuration and Design**

**4 credits (4+0) J, K, S**

Part two of a four-part sequence leading to the Cisco Certified Network Associate (CCNA) certification. Provides an in-depth study of Router Theory, TCP/IP, IP Addressing; and Routing Protocols as well as a hands-on introduction to Router Components, Router Setup and Startup, Router Configuration, and the Router Operating System. Students will master the following skills: Router Configuration; associated hardware and software tools and techniques, maintaining an engineering journal, and cable management techniques. Students will demonstrate these skills through hands-on designing, configuring, installing, and programming of a five-router inter-network. Prerequisite: CIOS S241.

### **CIOS S245 Computer Network Concepts and Administration**

**3 credits (3+0) J, K, S**

Provides an introduction to networking concepts and hands-on experience with various installations and administrative tasks. Subjects include connecting and configuring workstations and net devices into a local area network, integration to the Internet, user account management, system policies, security, monitoring and trouble-shooting. Prerequisite: CIOS S241.

### **CIOS S247 Local Area Network Configuration and Design**

**4 credits (4+0) J, K, S**

Part three of a four-part sequence leading to the Cisco Certified Network Associate (CCNA) certification. Provides an in-depth study of switches, Local Area Network (LAN) and Virtual Local Area Network (VLAN) design, configuration and maintenance. Instruction introduces and extends the student's knowledge and practical experience with these topics. In addition, this course provides practical experience in skills related to configuring Local Area Networks, Wide Area Networks, Novell Networks, Inter-network Packet Exchange (IPX) routing and Interior Gateway Routing Protocol (IGRP) protocols and network troubleshooting. Prerequisite: CIOS S244.

### **CIOS S248 Wide Area Network Configuration and Design**

**4 credits (4+0) J, K, S**

Part four of a four-part sequence leading to the Cisco Certified Network Associate (CCNA) certification. Provides an in-depth study of Wide Area Networks (WANs), Integrated Services Digital Network (ISDN), Point-to-Point Protocols (PPP), and Frame Relay design, configuration, and maintenance. Students will develop practical experience in skills relating to configuring WAN's, ISDN, PPP, and Frame Relay protocols as well as network troubleshooting. Prerequisite: CIOS S247.

### **CIOS S250 Integrated Applications**

**1 credit (1+0) J, K, S**

This is a project-based capstone course. Students demonstrate their skill level by integrating word processing, spreadsheet, database, and other applications. Prerequisite: CIOS S132B, CIOS S235, and CIOS S240.

### **CIOS S251 Desktop Publishing Concepts and Applications**

**3 credits (3+0) J, K, S**

Presents design techniques using desktop publishing software to generate sophisticated publications. Topics include the mechanics of desktop publishing, basics of graphic design and printing, planning and implementation of publishing projects, and integration of desktop publishing into daily work routines. Prerequisite: CIOS S132B.

### **CIOS S254 Desktop Publications and Graphics Projects**

**2 credits (0+4) J, K, S**

Apply and refine desktop publishing and graphics skills in designing and producing projects such as letterheads, advertisements, flyers, brochures, and newsletters for actual clients. Prerequisite: CIOS S152. Corequisite: CIOS S251.

### **CIOS S257 Advanced Web Site Design and Development**

**3 credits (3+0) J, K, S**

Create commercial web sites using high-end, suite-style applications with scripting languages and dynamic content. Uses current web functions such as interactive forms and style sheets. Prerequisite: CIOS S157 and CIOS S170.

### **CIOS S259 Preparing Electronic Documents**

**1 credit (1+0) J, K, S**

Learn how to create complex PDF documents from various sources, optimize documents for specific use, and add interactivity and security features. Create documents with a consistent, predictable outcome viewable on all platforms and computers. Prerequisite: CIOS S132A and CIOS S110A.

### **CIOS S260 Business Communications**

**3 credits (3+0) J, K, S**

Applies techniques of written and oral communications to business situations requiring problem solving and an understanding of human relations. Topics include written communications (letters, memoranda, and reports), oral communications (one-on-one and small group interactions and oral presentations), listening skills, non-verbal communications, and communication technology. Prerequisite: CIOS S101B and CIOS S160 or CIOS Business English Placement Test.

### **CIOS S262 Professional Development**

**3 credits (3+0) J, K, S**

Focuses on the knowledge and attitudes necessary for individuals who wish to develop critical job survival skills, increase productivity, and improve job satisfaction and success. Topics include employment trends, the job search, interpersonal skills, organizational dynamics, and self-improvement. Students will create a career portfolio. Prerequisites: Access to and ability to use the Internet, electronic mail, computer (with CD-ROM and word processing software), a video camera and player.

### **CIOS S264 Records Management**

**2 credits (2+0) J, K, S**

Emphasizes the principles and practices of effective records management for manual and automated records systems. Follows Association of Records Managers and Administrators filing rules for alphabetic, numeric, geographic, and subject systems. Covers records management equipment, control, and retention.

### **CIOS S274 Data Structures and Algorithms**

**3 credits (3+0) J, K, S**

Topics include compiled languages, trees, directed graphs, linked lists, and file structure concepts. Prerequisite: CIOS S170.

### **CIOS S275 Programming in Java**

**3 credits (3+0) J, K, S**

Write object-oriented, platform independent, multi-threaded applications for both web and stand-alone use. Prerequisite: CIOS S274.

### **CIOS S279 Database Theory and SQL**

**3 credits (3+0) J, K, S**

Covers theoretical and substantive concepts of relational algebra and data modeling, and database design, security and database administration. Topics include the selected database application development environment, programming standard structured query language, and knowledge of the types and degrees of normalization. Students acquire the ability to compare and contrast data modeling and database design and techniques. Prerequisite: CIOS S240.

### **CIOS S294 Business or Networking**

#### **Practicum: Field Work**

**1–6 credits (0+0+4–24) J, K, S**

Provides a practicum or cooperative work experience supervised and evaluated by a faculty member and employer. Students will gain practical work experience while working in a private business or government agency. Prerequisite: Permission.

### **CIOS S310 Linux and Related Operating Systems**

**3 credits (3+0) J**

A comprehensive overview of Linux servers. This includes a review of open source concepts, installing and configuring the operating system, upgrading, security, monitoring and troubleshooting, adding hardware and software, managing server load and scripting. Prerequisite: CIOS S110.

### **CIOS S311 Computer Support Services**

**3 credits (2+0+4) J**

Teaches appropriate service skills in a customer user support environment. Students will apply and refine computer skills through delivery of computer user support for actual clients. Prerequisite: CIOS S110A.

### **CIOS S315 Web Server Administration**

**3 credits (3+0) J**

Teaches setup, configuration, and administration of web servers using programs such as Apache and Internet Information Server (IIS) that are used in e-commerce and business settings. Applications covered will include FTP and TFTP, Telnet, POP3 and SMTP e-mail. Additional topics include installing the operating system, security and DNS. Prerequisite: CIOS S241.

### **CIOS S320 Information System Security**

**3 credits (3+0) J, K, S**

Introduces the principles of computer and information security, risk analysis and risk management, in the context of information systems. Analyzes information resources, threat and system vulnerabilities as tied to the development of policies to contain and manage risk with emphasis on a strategy of “defense in depth.” Tools of information assurance will be introduced, including architectural tools such as firewalls and encryption, monitoring tools such as intrusion detection systems, and procedural tools such as password policies and data backup. Explores the ethical questions of computer privacy and the evolution of legal responsibilities for security information systems. Prerequisite: CIOS S241.

### **CIOS S340 Database Driven Websites**

**3 credits (3+0) J, K, S**

Further study, practice and use of database for web applications. Components, design considerations, and implementation of relational databases through server page programming. Open-source, proprietary, and emergent server page techniques will be covered. Database connectivity issues, security, and techniques for e-Commerce sites are emphasized. Prerequisite: CIOS S257 and CIOS S279.

### **CIOS S341 Building Scalable Networks**

**4 credits (4+0) J, K, S**

This course is one of four courses in the Advanced Network Administration and Troubleshooting curriculum and is designed to help students prepare for the Cisco Certified Networking Professional (CCNP) Routing exam. This course will cover the configuration of Cisco routers for operation in a large or growing multiprotocol internetworks. Topics include: scalable internetworks, extending Internet Protocol addresses using Variable Length Subnet Masking (VLSM), Classless InterDomain Routing (CIDR), and Network Address Translation (NAT), configuring various single area and multi-area routing protocols, route redistribution and route summarization. Prerequisite: Cisco Certified Networking Associate (CCNA) Certification.

### **CIOS S342 Building Remote Access Networks**

**4 credits (4+0) J, K, S**

This course is one of four courses in the Advanced Network Administration and Troubleshooting curriculum and is designed to help prepare students for the Cisco Certified Networking Professional (CCNP) Remote Access exam. This course focuses on techniques and technologies for enabling Wide Area Network (WAN) solutions. Topics include: configuring asynchronous connections with modems, PPP, ISDN, DDR, X.25, Frame Relay, queuing and NAT. Prerequisite: Cisco Certified Networking Associate (CCNA) Certification.

### **CIOS S343 Building Multilayer Switched Networks**

**4 credits (4+0) J, K, S**

This course is one of four courses in the Advanced Network Administration and Troubleshooting curriculum and is designed to help prepare students for the Cisco Certified Networking Professional (CCNP) Switching exam. This course focuses on techniques and technologies required to build campus networks using multi-layer switching technologies over high speed Ethernet including both routing and switching concepts, covering both Layer 2 and Layer 3 technologies. Topics include: Local Area Network (LAN) design, Switching, Flow Masks, Hot Standby Router Protocol (HSRP), Multicasting, and Internet Group Management Protocol (IGMP). Prerequisites: Cisco Certified Networking Associate (CCNA) Certification.

### **CIOS S344 Internetworking and Troubleshooting**

**4 credits (4+0) J, K, S**

This course is one of four courses in the Advanced Network Administration and Troubleshooting curriculum and is designed to help students prepare for the Cisco Certified Networking Professional (CCNP) Support exam. This advanced course focuses on providing networking professionals with the troubleshooting processes on Cisco Routers and Catalysts Switches. Topics include: how to baseline and troubleshoot an environment using Cisco routers and switches for multiprotocol client hosts and servers connected with: Ethernet, Fast Ethernet, Token Ring, Serial, Frame Relay, and ISDN BRI. Prerequisites: CIOS S341, CIOS S342, CIOS S343.

### **CIOS S358 XML and Web Services**

**3 credits (3+0) J**

An in-depth study of web services and XML development. Covers the Document Object Model (DOM), XML, and content management systems. Includes information on XPath, XSL, XSD, and emerging XML standards. Web services topics may include SOAP, WSDL, and UDDI. Analyzes how XML can be used to facilitate transmission of information between disparate database systems. Compares and contrasts open source and proprietary standards for document interchange. Prerequisite: CIOS S257 and S279.

### **CIOS S371 Systems Analysis, Design and Implementation**

**3 credits (3+0) J, K, S**

Concepts and skills needed to analyze, design and implement business information systems. Includes the development of communication skills and techniques for determining business system requirements and conveying those requirements to developers. Various methodologies, documentation techniques, models, and communication processes are studied. Industry standard computer-based modeling tools will be used to analyze hardware and software architectures. Prerequisite: CIOS S279.

### **CIOS S374 Programming in C++**

**3 credits (3+0) J**

Extend the programming taught in CIOS S274 with C++, the next generation of C. Special emphasis is placed in this course on object-oriented programming. Prerequisite: CIOS S274.

### **CIOS S376 Programming in Perl**

**3 credits (3+0) J**

Configure servers and write scripts using Perl. Prerequisite: CIOS S170.

### **CIOS S377 Visual Basic.NET**

**3 credits (3+0) J, K, S**

Object Oriented Programming design and development using Visual Basic.NET. Includes discussion of the .NET framework, runtime execution environment, class libraries, and common APIs. Development platforms include client server, web forms, web applications and web services. Prerequisite: CIOS S170.

### **CIOS S411 Managing Customer Service**

**2 credits (1+0+4) J**

Investigate strategies and tools used to manage customer user support within various computer support environments. Students will integrate management concepts through the study of actual computer support organizations. Prerequisite: CIOS S311.

### **CIOS S430 Electronic Commerce and Ethics**

**3 credits (3+0) J, K, S**

Advanced exploration of selected topics in electronic commerce, including computing standards, regulatory organizations, electronic data interchange, privacy issues, and ethics. Current legal opinions on topics such as intellectual property rights, trademarking, copyrighting, subcontractor rights and responsibilities and the gathering and dissemination of customer data. This course provides an intensive look at the ethical and social issues facing business e-commerce today. Prerequisite: CIOS S320 or BA S330

### **CIOS S432 Project Management in IT**

**3 credits (3+0) J, K, S**

Strategies and practices of project management in information technology are covered using graphical tools and an in-class simulation. The entire project process is considered including proposals, planning, monitoring, and evaluation. Includes quantitative techniques of project management. Prerequisite: CIOS S320.

### **CIOS S441 Systems Design Principles**

**3 credits (3+0) J**

Prepare and optimize database and other applications for use in electronic commerce. Special emphasis is placed on the graphical user interface and other output concerns. Prerequisite: CIOS S371.

### **CIOS S443 Network Security**

**4 credits (4+0) J, K, S**

Teaches how to design and implement security solutions that reduce the risk of revenue loss and vulnerability. Emphasis on security policy design and management; security technologies, products and solutions; secure router design, installation, configuration and maintenance; and AAA and VPN implementation using routers. Prepares students to take the MCNS (Managing Cisco Network Security) exam in preparation for the Cisco Firewall Specialist, leading toward Cisco Certified Security Professional certification. Prerequisite: CIOS S248 and CIOS S320.

### **CIOS S444 Network Security II**

**4 credits (4+0) J, K, S**

Continuation of CIOS S443. Emphasis on using an industry standard firewall appliance to study security policy design and management. Topics include firewall appliance installation, maintenance, and VPN and AAA configuration. Prepares students to take the CSPFA (Cisco Secure PIX Firewall Advanced) exam in preparation for the Cisco Firewall Specialist, leading towards a certification as Cisco Certified Security Professional. Prerequisite: CIOS S443.

### **CIOS S445 Database Development with Oracle Tools**

**3 credits (3+0) J**

Use Oracle to create tools that integrate and manage e-commerce data. Prepares students for the Oracle Certified Professional (OCP) Database Administration exam. Prerequisite: CIOS S279.

### **CIOS S447 Database Administration Using MySQL**

**3 credits (3+0) J**

Teaches open-source database tools for use in e-commerce settings. Prerequisite: CIOS S279.

### **CIOS S449 Advanced Networking Topics**

**3 credits (3+0) J, K, S**

An examination of current topics and trends in telecommunications, data communications, and computer networking. General areas of study include communications protocols and standards, network infrastructure design, development, and maintenance, network applications, management issues, industry evolution and products, and troubleshooting. Prerequisite: CIOS S248.

### **CIOS S461 Information Design**

**3 credits (3+0) J**

Teaches effective ways to plan, design and deliver information in complex settings using digital technologies. Prerequisite: ART S160, CIOS S152, and CIOS S157.

### **CIOS S463 Digital Audio**

**2 credits (2+0) J**

Create, edit and archive audio for use in static and streaming web sites. Teaches commonly used and emergent codecs and analog/digital conversion. Prerequisite: CIOS S461.

### **CIOS S464 Digital Video**

**3 credits (3+0) J**

Create and edit raw video footage for use in streaming media or other applications. Prerequisite: CIOS S461.

### **CIOS S467 3D Modeling and Animation**

**3 credits (2+2) J**

Generate still and animated graphics in a 3D environment. Prerequisites: CIOS S152 and CIOS S461.

### **CIOS S469 Multimedia Design Project**

**3 credits (1+4) J**

Build complex A/V presentations. This is a capstone course that gives the student the opportunity to demonstrate the technical and communication competencies they have achieved throughout the program. Prerequisites: CIOS S463, CIOS S464, and CIOS S467.

### **CIOS S471 Object Oriented Programming**

**3 credits (3+0) J, K, S**

This course covers the essential aspects of Object-Oriented Programming independent of a particular language. Topics include: modularity, reusability, encapsulation, objects, properties, methods, inheritance, and classes.

### **CIOS S474 Programming in C#**

**3 credits (3+0) J**

Learn programming and design in the .NET environment using C#. Prerequisite: CIOS S275 or CIOS S374.

### **CIOS S475 Current Issues: Emergent Languages**

**3 credits (3+0) J**

Content varies depending on the current state of programming. Prerequisite: CIOS S274.

### **CIOS S480 Software Engineering**

**3 credits (2+2) J**

Learn software engineering practices, with a strong emphasis on the software development life cycle, management practices, financial considerations, and group work. The project from this course will be a group project. Prerequisite: CIOS S275 or CIOS S374 and instructor approval.

### **CIOS S485 Senior Presentation/Portfolio Defense**

**1 credit (1+0) J**

Prepare and present a professional portfolio documenting your skills as a computer professional. Prerequisite: final semester of program.

## **Construction Technology (CT)**

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### **CT S100 Woodworking I**

**3 credits (1+4) J**

Introduction to woodworking and woodworking machines; project construction and general finishing procedures.

### **CT S105 Fall Home Maintenance**

**1 credit (1+0) J, S**

Covers the most common and some uncommon home maintenance problems and repairs with an emphasis on those that should be done for Fall and Winter.

### **CT S106 Spring Home Maintenance**

**1 credit (1+0) J, S**

Covers the most common and some uncommon home maintenance problems and repairs with an emphasis on those that should be done for Spring and Summer.

### **CT S110 Where Health and Housing Meet**

**1 credit (1+0) J**

Indoor air quality awareness is a growing concern. What are the components, features and lifestyle decisions that may impact our indoor environment? Learn about the air we breathe in our homes.

### **CT S115 Bathrooms Simplified**

**1 credit (1+0) J, S**

A basic introduction to bathrooms, how they're planned, what they do and how they work. The course content includes basic construction and planning of bathrooms; project planning and scheduling; estimating projects; plumbing, heating, venting, and electrical considerations; materials; and a section on special problems and solutions.

### **CT S117 Owner Contracting/Building Your Own Home**

**2 credits (2+0) J, K**

Building your own home begins with the pre-construction process and goes from the foundation layout through the finished building. Discussion includes identifying contractors needed, the building process, construction and working with lenders.

### **CT S118 Log House Construction/Timber Framing**

**2 credits (2+0) J, K**

Log Building is an area of study involving practices which are applied to reinforce the student's understanding of how one plans, organizes and controls all available resources to create a natural log structure.

### **CT S119 Deck Building and Design**

**2 credits (1.5+1) J, S**

Introduction to designing and building a residential deck. The two first weekends consist of planning, material estimating, and design instruction. The final weekend will be reserved for building a deck chosen from designs created during the previous sessions.

### **CT S120 Basic Construction Techniques**

**3 credits (3+0) J**

Overview of construction hand and power tool usage, building procedures and codes, job and site planning, layout, foundation, floor wall, and roof framing methods, and current construction practices.

### **CT S122 Residential Renovation, Restoration and Repair**

**3 credits (3+0) J, S**

An introductory course in residential renovation, remodeling and repair. Subjects covered will include sequences of renovation; exterior renovation; interior renovation; design of existing structure; integration of design; structural design; project planning, scheduling and estimating; and specific projects such as sill replacement, opening bearing walls, remodeling baths and kitchens.

### **CT S135 Residential Wiring**

**3 credits (2+2) J, S**

Hands-on class on the basic electrical requirements of the National Electric Code (NEC) and local codes as they apply to planning and installing circuits in a residential dwelling. Electrical codes and safety are emphasized along with wire sizes and wiring circuit drawings.

### **CT S150 Basic Drafting**

**3 credits (1+4) J, K**

Basic course in college drafting designed to provide students with the fundamental skills and knowledge necessary to communicate using language of industry. Covers traditional tools and techniques and an introduction to Computer Aided Drafting (CAD).

### **CT S155 Woodworking II**

**3 credits (1+4) J**

Special methods in wood construction and wood finishing, emphasizing furniture and precision woodcraft. Prerequisite: CT S100.

### **CT S160 House Planning and Architectural Design**

**3 credits (1+4) J, K**

Introduction to the design and technology of the dwelling. Structural, energy, programming, environmental, spatial, aesthetic and site planning issues in residential design are covered. Emphasis is on the application of design methodologies to develop site specific housing solutions, utilizing the technologies covered in the course.

### **CT S165 Residential Building Technology**

**3 credits (3+0) J**

How buildings are constructed for the non-builder. This is a lecture course for individuals with little or no building experience and for those wishing to understand residential construction following a logical systems approach. Learn the terminology, design and assembly process, materials and components involved in residential construction. Blueprint reading, construction software, building commissioning and report writing are included.

### **CT S175 Introduction to AutoCAD**

**3 credits (2+2) J, K**

An introduction to Computer Aided Design and Drafting using the industrial standard AutoCAD software. Includes the basics of computer hardware and software, computerskills required for creating and editing drawings. Recommend CT S150 concurrently or drafting skills.

### **CT S181 Intermediate AutoCAD**

**3 credits (2+2) J**

Develops intermediate level CADD (computer-aided design drafting) skills for architectural, civil, structural, mechanical and electrical drawings used in building construction. Prerequisites: CT 175 or instructor approval.

### **CT S185 Building Diagnostics and Testing**

**3 credits (2+2) J**

Identify the hidden flaws often found in residential building that can cause discomfort, high energy costs, moisture and indoor air quality problems. Lectures will concentrate on theory, performance analysis and diagnostic testing methods for residential buildings. Lab sessions will focus on using a blower door, pressure measuring devices, flow hoods and analysis software. Corequisite: CT S201 or instructor permission.

### **CT S201 Cold Climate Coastal Construction**

**3 credits (3+0) J**

Design, construction and basic building science for understanding, planning and constructing a durable home in a difficult maritime climate. Upon satisfactory completion, this course meets the prerequisite for the State of Alaska Contractor Residential Endorsement and also for 16 continuing education credits by the State of Alaska, Division of Occupational Licensing for General Contractors with Residential Endorsement.

**CT S210 New Materials in Construction**  
**1 credit (1+0) J**

Many of the materials that are currently being used in residential construction are new in our lifetime. Are they better, more durable, or even appropriate for our maritime environment? This workshop covers the changing types, properties and appropriate uses of modern materials, in particular those used in Southeast Alaska.

**CT S222 Building Construction I**  
**3 credits (2+2) J**

Skill development in contemporary methods of building construction. Prerequisite: CT S120.

**CT S223 Building Construction II**  
**3 credits (2+2) J**

Advanced skill development in interior and exterior finish carpentry and cabinet making. Prerequisite: CT S120.

**CT S224 Mechanical Systems for Building**  
**3 credits (2.5+1) J**

Comprehensive study and practical application of residential, electrical, plumbing and heating systems.

**CT S225 Construction Planning and Scheduling**  
**3 credits (3+0) J**

Overview of organizing and planning for on-site construction. A review of building codes, ordinances, contracts and related information as regarding scheduling and managing a project. Prerequisite: CT S120.

**CT S226 Construction Estimating**  
**3 credits (3+0) J**

Interpretation of construction drawings and specifications; estimating overhead and profit; review of sub-contractor and material suppliers' proposals. Prerequisite: CT S120.

**CT S230 Residential Mechanical Ventilation**  
**3 credits (3+0) J**

Specifically designed to meet the needs of contractors and designers of new residential buildings to provide a comprehensive overview of the details involved in designing, installing, and commissioning residential ventilation systems. Heating, Refrigeration and Air Conditioning Institute of Canada, SkillTech Academy certification for Residential Ventilation Installation and 14 continuing education credits by the State of Alaska, Division of Occupational Licensing for General Contractors with a Residential Endorsement.

**CT S240 Introduction to Landscape Design**  
**3 credits (2+2) J**

Landscape design is a multidisciplinary academic study that is an application of science and technology. As a problem-solving process, it combines the aesthetics of artistic design with the practicalities of construction technology, environment studies, and botany. Color and composition are considered along with wind, drainage, building techniques, plants, and materials.

**CT S250 Building Codes and Standards**  
**3 credits (3+0) J**

A study of building codes, restrictions, and standards as applied to low-rise one and two family dwelling units. Provides a complete understanding of the principles of design and construction. Course should be taken concurrently with CT S252. Code compliance is essential in completing a set of working drawings acceptable for permitting, bidding and construction. Prerequisite: CT S160 or instructor permission.

**CT S252 Construction Documentation**  
**3 credits (2+2) J**

Study and application of materials, methods, and codes of construction specifically related to wood structures. Development of details and a complete set of working drawings using AutoCad. Prerequisite CT S100. Corequisite: CT S181.

**CT S282 Woodworking Projects**  
**3 credits (1+4) J**

Construction of advanced woodworking projects. Emphasis is on advanced skill development. Course may be repeated. Prerequisite: CT S155.

**CT S285 Advanced Building Pressure Diagnostics**  
**3 credits (2+2) J**

Advanced hands-on training in measuring, inducing, and quantifying pressure flows in residential buildings. Training includes utilizing computer controlled testing apparatus, data logging, software modeling and using other cool gizmos. Prerequisite: CT S185.

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**Dance (DNCE)**

**DNCE S103 Beginning Modern Dance I**  
**1 credit (0+3) J**

Beginning modern dance for adults and younger students with formal classwork and experience. May be repeated for credit. Three hours lab per week required.

**DNCE S104 Beginning Modern Dance II**  
**1 credit (0+3) J**

Continuation of DNCE S103. May be repeated for credit. Three hours lab per week required. Prerequisite: DNCE S103.

## **Diesel Technology (DESL)**

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**DESL S101 Introduction to Heavy Duty Mechanics**

**3 credits (2+2) J**

This introductory course gives the student a look into the world of heavy duty mechanics. Students rebuild a diesel engine, operate heavy equipment, and take field trips to local shops. This course is limited to high school age students.

**DESL S105 Diesel Fuel Systems**

**3 credits (2.5+1.5) J**

A continuation of DESL S110 with emphasis on fuel injection systems to include rebuilding and calibration of injectors and pumps. Includes rebuilding of blowers and turbochargers. Prerequisite: DESL S110 or concurrent enrollment or instructor's permission.

**DESL S106 Diesel Engines Simplified**

**3 credits (2.5+1.5) J**

This course is perfect for the owner/operator of a diesel engine in a boat, pick-up or other application. The course is designed to familiarize students with diesel engine operation, maintenance and minor repairs. At least half of each class period is spent working on real diesel engines in our well equipped lab. No tools or previous mechanical experience is needed. Learn to be comfortable owning or operating your diesel engine. PASS/FAIL grading.

**DESL S110 Diesel Engines**

**6 credits (2.5+7) J**

This course covers all aspects of diesel engines that are used in modern heavy equipment, marine, truck, and stationary applications. Troubleshooting, repair, parts reuse, and engine rebuilding are included. One full day each week is spent in the lab rebuilding a diesel engine. Students can bring in their own diesel engine to rebuild with the permission of the instructor.

**DESL S125 Hydraulics**

**3 credits (2.5+1) J**

Basic laws governing hydraulic design, layout and application. Introduction to components: disassembly and reassembly of pumps, motors, control valves and cylinders. Understanding of hoses, pipe fittings, seals and gaskets. Lab required.

**DESL S130 Refrigeration and Air Conditioning**

**2 credits (1+2) J**

This class will cover application, system operations, maintenance and safety principals of refrigeration. Students will learn about components making up a refrigerant. Troubleshooting and avoiding common problems included.

**DESL S161 Applied Marine Hydraulics**

**1 credits (.5+1) J**

Preventative maintenance course designed for boat owners, mates and engineers. Includes repair, troubleshooting, adjustment, and installation of vessel hydraulics.

**DESL S171 Heavy Duty Electrical Systems**

**3 credits (2.5 + 1.0) J**

This hands-on class covers DC electrical systems in boats, vehicles, and stationary equipment. DC theory, circuits, components, and troubleshooting are stressed. Students in this course will learn to troubleshoot and correct DC systems using a meter. Charging systems and marine battery applications are included. Recommended for boat owners or operators. All tools and meters are provided. No mechanical or electrical experience is necessary.

**DESL S180 AC Power Generation**

**3 credits (2+2) J**

A continuation of DESL S171, Heavy Duty Electrical Systems. This course is a study of AC power generation methods used in marine and industrial applications. The interface of diesel engines to power generation is strongly emphasized. This course covers AC generation theory, safety, regulation, installation, troubleshooting, and repair of the types of units found in Southeast Alaska powerhouses, vessels, and remote camps. Prerequisite: DESL S171 or instructor's permission.

**DESL S250 Heavy Duty Brakes & CDL Preparation**

**2 credits (1+2) J**

An in-depth study of the application, service and repair of heavy equipment brake systems and components: wet and dry types, drum and disc types, single and multi-disc types, and pneumatic types.

**DESL S255 Heavy Duty Suspension and Alignment**

**2 credits (1+2) J**

A thorough study of heavy equipment frames and suspension systems and their components. Adjustments, repairs and cautions along with tire and track alignments.

### **DESL S260 Heavy Duty Power Trains**

**3 credits (2+2) J**

Basic operation and repair of heavy equipment components from the fly wheel to the wheels or tracks: clutches, transmissions, transfer cases, differentials, multi-speed rear ends, and final drives.

### **DESL S261 Marine Auxiliary Systems**

**3 credits (3+0) J**

Mechanical and electrical systems on pleasure and commercial vessels. Includes engine installation, shaft alignment, propeller calculation, fuel and water systems, and other marine system design and installation. May be taken concurrently with DESL S262. Prerequisite: DESL S110 or instructor permission.

### **DESL S262 Marine Auxiliary Systems Lab**

**2 credits (0+4) J**

Supplements DESL S261 with specific exercises. Engine, shaft and propeller, exhaust, electrical and other systems are designed, installed and tested. Prerequisite: DESL S261.

### **DESL S263 Marine Transmissions**

**3 credits (1+4) J**

A study in the operation, maintenance and repair of marine transmissions and other shipboard gearing units like winches and sterndrives.

### **DESL S291A Alaska Marine Highway Oiler Internship**

**12 credits (0+0+48) J**

12 hour days/7 days a week (one week on, one week off). This unpaid internship fulfills the USCG's large vessel engine room sea time requirement of 1440 hours that is needed prior to taking the USCG OILER examination and receiving a USCG merchant mariner's document (Z card) with an oiler endorsement. This internship is to be completed after the Marine Engine Room Certificate of 29 credits has been completed at UAS. The student will work in the engine room onboard an Alaska Marine Highway ferry in Southeast Alaska. Prerequisite: Completion of the Marine Engine Room Preparation Certificate, a valid USCG wiper Z card, and instructor's permission.

## **Drafting Technology**

*See Construction Technology*

## **Early Childhood Education (ECE)**

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### **ECE S101 Introduction to the Early Childhood Profession**

**3 credits (3+0) J**

Includes historical foundation, current issues and trends, exposure to a variety of developmentally appropriate programs, contemporary needs of children and families, the importance of being an advocate, professional standards and career opportunities, introduction to National Association for the Education of Young Children and the code of ethical conduct. Corequisite: ECE S105.

### **ECE S105 Developmentally Appropriate Practice**

**1 credit (1+1) J**

Developmentally and culturally appropriate practice in early childhood settings. Topics include basic verbal skills, inclusion, the teaching process, organizing a class, lesson planning, and curriculum development.

### **ECE S109 CDA Assessment Preparation**

**1 credit (.5+1) J**

The Child Development Associate (CDA) assessment class prepares candidates for the final assessment of competency to obtain the CDA Credential.

### **ECE S111 Nutrition for Young Children**

**1 credit (.5+1) J**

Explores appropriate ways to meet the needs of infants and young children, including laws, regulation and appropriate practices relative to food handling service. Corequisite: ECE S105.

### **ECE S112 Young Children and Health**

**1 credit (.5+1) J**

This course prepares the student to provide a learning environment for young children which is free of factors which may contribute to or cause illness. Topics covered include: sound medical, dental practices and good nutrition. Provisioning the environment with nutritious food and snacks. Maintaining a healthy environment as well as emotionally healthy interactions with children and adults. Practice and demonstration of health and nutrition activities with young children. Must be taken concurrently with supervised experience in a child development center.

### **ECE S113 Safe Learning Environment**

**1 credit (.5+1) J**

Emphasizes the importance of a safe learning environment and includes the competencies that enable students to provide a safe environment for young children. Emphasizes the measures necessary to reduce and prevent accidents. Must be taken concurrently with supervised experience in a child development center.

### **ECE S114 Effective Learning Environment**

**1 credit (.5+1) J**

Emphasizes the importance of an environment which is conducive to learning at the developmental level and learning style of the children. It includes selection of materials and equipment, room management, and scheduling. Must be taken concurrently with supervised experience in a child development center.

### **ECE S121 Physical Development of Young Children**

**1 credit (.5+1) J**

Emphasis on the essentials of planning a program which provides space, materials, equipment, and activities to promote the physical development of children. Includes scheduling, planning activities, and selection of equipment and materials. Must be taken concurrently with supervised experience in a child development center.

### **ECE S122 Young Children and Cognitive Development**

**1 credit (.5+1) J**

Activities and experiences which encourage questioning, probing, and problem-solving skills which are appropriate for different developmental levels and various learning styles of young children. Must be taken concurrently with supervised experience in a child development center.

### **ECE S123 Language and Literature Activities for Young Children**

**1 credit (.5+1) J**

Selection, development and use of literature and language arts material and activities for young children. One hour lab per week required. Must be taken concurrently with supervised experience in a child development center.

### **ECE S124 Young Children and Creative Development**

**1 credit (.5+1) J**

Emphasis on activities which provide a variety of experiences and media that stimulate children to explore and express their creative ability. Must be taken concurrently with supervised experience in a child development center.

### **ECE S125 Math Activities for Young Children**

**1 credit (1+0) J**

Overview of how children construct mathematical meanings. Introduction to mathematical learning principles and experiences for young children. Corequisite: ECE S105.

### **ECE S130 Culture, Learning, and the Young Child**

**2 credits (2+0) J**

Explores the ways children come to know, accept, and take pride in their culture. Maintaining a culturally appropriate, open, cooperative, caring relationship with each child's family.

### **ECE S132 Young Children and Families**

**1 credit (.5+1) J**

An introduction to working with families. Stresses the importance of a positive and productive relationship between families and the child development centers. Emphasis is on using the relationship to coordinate child rearing efforts of both the family and the classroom. Must be taken concurrently with supervised experience in a child development center. Corequisite: ECE 105

### **ECE S141 Classroom Management for Young Children**

**1 credit (.5+1) J**

Planning a child-centered program with a flexible schedule to develop age-appropriate routines that promote child choice and play. Emphasizes positive guidance and effective communication with children, parents, and classroom volunteers. Must be taken concurrently with supervised experience in a child development center.

### **ECE S142 Social Development for Young Children**

**1 credit (.5+1) J**

Emphasizes the development of social skills which enables children to function as productive members of a group. Emphasizes the development of mutual respect and cooperative work-play among children and between children and adults. Must be taken concurrently with supervised experience in a child development center.

### **ECE S143 Developing Positive Self-Concepts in Young Children**

**1 credit (.5+1) J**

Emphasizes helping each child develop a sense of awareness and self-esteem. Emphasizes providing self-oriented activities, encouraging acceptance and expression of children's feelings, and developing children's pride as individuals and as members of a cultural or ethnic group. Must be taken concurrently with supervised experience in a child development center.

### **ECE S150 Good Programs for Young Children**

**3 credits (2+3) J**

Physical, cognitive and social/emotional development of the child through 8 years of age. Seminar sessions focus on theory. Practicum experience, under the supervision of a master teacher, focuses on practical application. Students will observe and record child development during practicum, in addition to planning and implementing developmentally appropriate activities. Prerequisite: PSY S101.

### **ECE S171 Program Management**

**1 credit (.5+1) J, S**

Emphasizes activities which teach the student to be a program manager who uses all available resources to ensure an effective operation. Emphasis is placed on competent organization, planning and record keeping. Must be taken concurrently with supervised experience in a child development center.

### **ECE S172 Professional Issues**

**1 credit (.5+1) J, S**

Emphasizes activities which assist the student to seek out and take advantage of opportunity to improve his or her competence both for professional growth and benefit of staff, family and children. Must be taken concurrently with supervised experience in a child development center.

### **ECE S173 Reflective Teaching**

**1 credit (.5+1) J**

Students will develop and expand their capacities to be self reflective teachers. This course will promote their skills to understand and reflect on early childhood principles, theories, and their teaching practices in programs for young children, birth to age 8. Prerequisite: Instructor permission. Corequisite: ECE S105.

### **ECE S210 Guidance and Discipline**

**3 credits (2+2) J**

Guidance and discipline approaches for preschool and primary grade school children, based on an understanding of child development and of developmentally appropriate education practices. Such an understanding assists teachers and parents in addressing the cause of a behavior problem rather than the symptoms.

### **ECE S220 Infant and Toddler Care**

**3 credits (2+2) J**

Developmentally appropriate care and nurturance of infants and toddlers, with an emphasis on the importance of building relationships. Includes activities to stimulate development and learning, and to support communication, guidance and health. Demonstration of research based techniques is integral to the course. Weekly practice labs required. Prerequisite: ECE S245. Corequisite: ECE S105.

### **ECE S230 Introduction to Children With Special Needs**

**3 credits (3+0) J**

An overview of categories of exceptionality. The course addresses the needs of young children with special needs, and their families. Prerequisite: ECE 245

### **ECE S245 Early Childhood Development**

**3 credits (3+0) J**

Examines human relationships with and among children from a multicultural perspective. Includes physical, intellectual, emotional, and social development from birth through age 8. Must be taken concurrently with supervised experience in a child development center.

### **ECE S270 Practicum**

**3 credits (2+0+4) J**

A capstone class for the AAS Early Childhood major. Includes the advanced theories, principles and practices students will demonstrate in their teaching practice, personal capacities, dispositions, self-reflection, and professional behavior. Must be taken concurrently with supervised experience in a child development center. Prerequisite: ECE S245 and ENGL S211 (C or higher) and instructor permission.

### **ECE S294 Practicum: Young Children with Special Needs**

**1 credit (0+2) J**

Supervised field work with handicapped and gifted children ages 3–8. Prerequisite: permission.

### **ECE S301 Parents as Partners in Education**

**3 credits (2+2) J**

Study of strategies that will assist those who work with children and families to facilitate supportive partnerships with parents. Includes partnerships, contemporary issues, school and home-based programs, rights and responsibilities, professional ethics and parents with special or unique needs. Prerequisite: ECE S245 and ENGL S211 (C or better) or instructor permission.

### **ECE S360 Assessment in Early Childhood**

**3 credits (2+2) J**

Examination of policies and practices related to evaluation of young children's progress. Includes legal, ethical, and professional responsibilities in assessment. Exploration of what, when, and how to assess young children's learning. Includes practice and analysis of various assessment styles and tools as well as how to use the information gained. Prerequisite: ENGL S211 or equivalent.

### **ECE S364 Curriculum and Young Children**

**3 credits (2+2) J**

Prepares teachers to create and provide curriculum components that best meet the needs of young children, help them learn in developmentally appropriate ways, assist their development of intellectual autonomy, and also address individual needs. Prerequisite: ENGL S211 or equivalent.

### **ECE S420 Developing Literacy in the Early Years**

**3 credits (2+2) J**

Developmentally appropriate procedures for facilitating young children's explorations of reading and writing. Integrating written language experiences with oral language development. 25 hours lab required. Prerequisite: ENGL S211 or equivalent.

### **ECE S430 Fine Arts for the Early Years**

**3 credits (3+0) J**

Focused on promoting the arts in children's lives. Explores the role of the teacher in helping children become aware of the beauty around them and to appreciate the variety and skill of many different kinds of art, including theatre, two- and three-dimensional art, crafts, vocal and instrumental music and dance. Strategies for assessing artistic development and working with families are incorporated. Prerequisite: ECE F310 (a UAF course).

### **ECE S470 Advanced Practicum**

**3 credits (2+2) J**

An advanced practicum in an early childhood program or family support agency as a teacher, curriculum specialist, family advocate, or in another related position. A capstone class for those who have completed the other required courses for the UAF BA in Child Development. Prerequisite: Instructor permission.

## **Economics (ECON)**

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### **ECON S201 Principles of Economics I: Macroeconomics**

**3 credits (3+0) J, K, S GER**

Analysis/theory of national income; money and banking; fiscal and monetary policies. Corequisite: MATH S105.

### **ECON S202 Principles of Economics II: Microeconomics**

**3 credits (3+0) J, K, S GER**

Theory of prices and markets; income distribution; contemporary problems of labor and market structure, examination of international economic relations. Corequisite: MATH S105.

### **ECON S321 Intermediate Microeconomic Theory**

**3 credits (3+0) J**

Analysis of demand and supply under various market structures; theory of production and cost; factor pricing and theory of distribution; and survey of welfare economics. Prerequisite: ECON S201 and S202.

### **ECON S324 Intermediate Macroeconomic Theory**

**3 credits (3+0) J**

Concepts and measurements of national income; analysis of aggregate demand and supply and their relationship to prices, employment, and growth. Prerequisite: ECON S201 and S202.

### **ECON S412 Introduction to Econometrics**

**4 credits (3+2) J**

Application of statistical methods in testing economic theories and estimating economic relationships; emphasizes multiple regression analysis. Two hours per week computer lab required. Prerequisite: ECON S321 and S324.

### **ECON S435 Natural Resource/ Environmental Economics**

**3 credits (3+0) J**

Economic analysis of resource uses and development. Topics include economics of renewable resources, forestry, and fisheries; environmental economics, and public resource management. Examples are presented of Alaska resource development and management experience. Prerequisite: ECON S202.

### **ECON S450 Money and Banking**

**3 credits (3+0) J**

The liquid wealth system in the United States, to include the commercial banking system, the Federal Reserve, and nonbank financial institutions; the regulation of money and credit and its impact on macroeconomic policy objectives. Students having taken ECON S350 may not repeat for credit. Prerequisites: ECON S201.

### **ECON S451 Public Economics**

**3 credits (3+0) J**

The economic justification for government; federal, state, and local taxation; government spending and debt. Fiscal policies within the framework of economic policies. Students having taken ECON 351 may not repeat for credit. Prerequisite: ECON S202.

### **ECON S463 International Economics**

**3 credits (3+0) J**

Pure theory of international trade; comparative cost; terms of trade; factor movements; international disequilibrium; balance of payments and its impact on the national economy, capital movements, economic development through international trade. Prerequisite: ECON S201, ECON S202.

## **Education (ED)**

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### **ED S222 Orientation to Teaching Profession**

**3 credits (2+2) J, K, S**

An orientation to the teaching profession, including teacher training, employment opportunities, professional growth, education philosophy and teaching effectiveness. Introduction to issues confronting educators: integrating special needs students, selection of appropriate teaching materials, curriculum and lesson planning, and constructive teacher–student interaction. Observation of a wide range of teaching situations and levels.

### **ED S230 Introduction to Educational Technology**

**3 credits (2+2) J, K**

Provides an overview of applied technology in K–12 education. Topics include the use of tool software, telecommunications, computer–assisted instruction, and multimedia in the classroom. Also addresses classroom management technology. Concepts learned in class will be applied in practice. Prerequisite: Requires computer with Internet and access to digital camera and scanner.

### **ED S302 Foundations of Literacy and Language Development**

**3 credits (3+0) J**

Explores how children learn language, similarities and differences between first and second language acquisition, how culture influences language and literacy development, and how language is taught. Course tracks language acquisition from birth through the school years. Prerequisites: ED S333 and admission to the Bachelors of Arts in Elementary Education program.

### **ED S304 Literature for Children and Young Adults**

**3 credits (3+0) J**

A teacher’s introduction to the study of children’s and young adult literature. We will look at basic genres of children’s and young adult books, the history and philosophy behind the use of literature, and explore response to literature activities with students. Course is delivered through a combination of audio conference calls, video tapes, readings and individual and group activities. This course addresses Alaska Teacher Standard 4 with respect to content knowledge of literature.

### **ED S308 Indigenous Culture In Our Schools**

**3 credits (3+0) J**

Examines local regional Alaska Native culture and how it affects multicultural education and cross-cultural communication in a sociopolitical context. Using a case study approach and the wisdom of our local elders, students will explore the implications of diversity for teaching and learning in a multicultural society, with emphasis on the indigenous cultures of Alaska. Requires access to Internet and e-mail. Prerequisite: Alaska teaching certification or application.

**ED S319 Health and Safety Issues in Early Childhood Education**

**1 credit (.5+1) J, S**

Study of health and safety issues that impact young children's physical and mental health. The role of nutrition and the involvement of young children's parents in developing programs that promote children's health is explored.

**ED S320A Art in the K-8 Curriculum**

**1 credit (1+0) J, S**

Introduction to current philosophies of art education for elementary and middle-school students. Skills and techniques needed for teachers to provide effective art programs. Prerequisite: ED S222 or advisor permission.

**ED S320B Physical Education in the K-8 Curriculum**

**1 credit (1+0) J, S**

Introduction to current philosophies in physical education for elementary and middle-school students. Skills and techniques needed by teachers to provide a sound physical education program. Prerequisite: ED S222 or advisor permission.

**ED S320C Music in the K-8 Curriculum**

**1 credit (1+0) J**

Introduction to the current theories of music instruction. Skills and techniques needed by elementary and middle-school teachers to provide an effective music program. Prerequisite: ED S222 or advisor permission.

**ED S320D Drama in the K-8 Curriculum**

**1 credit (1+0) J**

Principles, methods, and materials of drama at the elementary and middle-school levels. A wide variety of creative activities that are basic to elementary curricula are explored. Includes the use of drama in standards-based curriculum planning and assessment for the diverse student population. Prerequisite: ED S222 or advisor permission.

**ED S320E Health in the K-8 Curriculum**

**1 credit (1+0) J**

Introduction to current philosophies and practices in health education for elementary and middle-school students. Knowledge and skill needed for teachers to provide effective health education. Prerequisite: ED S222 and admission to BA in Elementary Education.

**ED S321 Early Childhood Education and Motor Development**

**1 credit (.5+1) D**

Study of perceptual motor development and activities, as well as environments and teacher behaviors that promote the physical development of the child in relation to cognitive, social/emotional development.

**ED S324 Enhancing Young Children's Creative Development**

**1 credit (.5+1) D**

Study of environments and experiences that foster children's creativity. The class explores the role of the teacher's behavior as it affects the child's motivation and freedom of expression. The role creativity plays in learning and cognitive development of young children is emphasized.

**ED S333 The Learner and the Learning Process**

**3 credits (3+0) J, S**

This course is designed to study learning theories by examining accounts from educational psychology and the original writings of leading learning theorists. Special emphasis is placed on the curricular, instructional, and assessment practices that are promoted by these different learning theories. Prerequisites: PSY S101 or ECE S210.

**ED S380 Multicultural Education**

**3 credits (3+0) J, K**

Investigation of the major concepts and issues in multicultural education with emphasis on the dimensions of content integration, knowledge construction, prejudice reduction, equity pedagogy, and empowering school culture. Includes issues regarding the education of Alaska Natives with attention to cultural standards.

**ED S416 Teaching Literacy in the K-8 Curriculum**

**4 credits (3+2) J**

Developmentally appropriate methods for guiding students' development of literacy skills K-8, as outlined in national, state, and local standards. Development of literacy skills and strategies within the context of developing the written language, thinking processes, and appropriate assessment integral to teaching. Integration of subject areas and technology to enhance literacy. Prerequisite: ED S302, full admission to BA Elementary Education, and concurrent enrollment in ED S494A.

### **ED S417 Teaching Social Studies in the K-8 Curriculum**

**2 credits (2+0) J**

Inquiry approach to the themes of social studies and the methods of eliciting thinking and knowledge development. Creating curricular units based on standards. Integration of subject areas and technology to enhance learning. Prerequisite: ED S302, full admission to BA Elementary Education, and concurrent enrollment in ED S494A.

### **ED S427 Teaching Math in the K-8 Curriculum**

**3 credits (2+2) J**

Methods of teaching math. Reading processes in mathematics, and methods to foster student understanding of the major concepts and procedures of mathematical topics as outlined in national, state, and local standards. Teaching to diverse populations and accommodating all students. Integration of subject areas and technology to enhance learning. Prerequisite: Full admission to BA Elementary Education and concurrent enrollment in ED S494A.

### **ED S428 Teaching Science in the K-8 Curriculum**

**2 credits (2+0) J**

Methods of teaching science. Inquiry processes in science, foster understanding of fundamental concepts in physical, life, earth and space science, and science process. Teaching to diverse populations and accommodating all students. Integration of subject areas and technology to enhance the learning. Prerequisite: Full admission to BA Elementary Education and concurrent enrollment in ED S494A.

### **ED S448 Classroom Management in K-8 Classrooms**

**3 credits (3+0) J**

Planning and organizing a classroom environment to maximize intellectual and social development. Topics covered include integrated curriculum planning for relevance to student experience and interests, discipline approaches that enhance self-esteem and self-discipline, assisting special needs students within the regular classroom, logistics of physical group management, and recordkeeping systems, including computerized approaches. Prerequisite: Concurrent enrollment in a practicum course, or permission.

### **ED S452 Student Teaching**

**6–12 credits J**

Supervised teaching in elementary or secondary schools. The department may limit registration, determine assignments, and prescribe the number of teaching hours required. Prerequisite: Admission to student teaching, 3.0 GPA in professional education sequence. \*Fall semester student teaching requires formal application by March 15 of the previous spring semester. Spring semester student teaching requires formal application by October 1 of the previous fall semester. Contact the Center for Teacher Education for information.

### **ED S460 Integrated Curriculum and Instruction**

**2 credits (2+0) J**

The design of curriculum over a year's time and the planning for learning in view of the interaction of all subjects. This course is the reflection of experience in student teaching and the application of that learning and previous learning to plan coherently for a year's instruction, curriculum and classroom community, which is developmentally appropriate and culturally relevant. Prerequisites: Completion of all other program requirements, including ED S452.

### **ED S465 Math and Science for Young Children**

**3 credits (2+2) J**

Developmentally appropriate procedures for facilitating young children's construction of mathematical and scientific knowledge in preschool and primary grades. 25 hours of lab required. Prerequisite: 100-level math course (B or higher) and a lab science course.

### **ED S492 Seminar**

**1–6 credits J**

Current topics in education.

### **ED S494A Applications of Teaching: Field Work**

**3 credits (1+0+8) J**

Practicum in an elementary school classroom. Observation of developmental, cultural and cognitive diversity. Application of teaching and assessment of instructional strategies and curricular development of individuals and groups and the relationship to classroom community. Supervised by faculty member and classroom teacher. Prerequisite: Full admission to BA Elementary Education and concurrent enrollment in ED S415, ED S426, and ED S320ACD.

**ED S498 Professional Portfolio Preparation**

**2 credits (1+0+4) J**

Elementary education students will document their knowledge and ability to perform according to the school's conceptual framework, national and state standards. Evidence will be gathered during student teaching and artifacts included. The course provides support for the organization and reflection necessary for a successful portfolio. Prerequisite: ED S452 or concurrent enrollment.

**ED S601 Teaching Selected Content I**

**3 credits (1+4) J**

Supervised study with practicing subject matter specialists. Participation and research will produce curriculum materials related to the teachers' instructional assignment.

**ED S602 Teaching Selected Content II**

**3 credits (1+4) J**

A continuation of ED S601 with emphasis on different subject-matter content.

**ED S605 Early Childhood Education Principles and Practices**

**3 credits (2+2) J**

Survey of current research regarding early childhood education. Analysis of early childhood education theory as a base for teaching and curriculum decisions. Examination of issues within the home, school, and community which affect school success for children in preschool and primary grades. 25 hours lab required.

**ED S608 Mathematical Problem Solving: An Overview for K-8 Teachers**

**3 credits (2+2) J**

Examines the underlying concepts of solving problems using mathematical models, logic, and concepts. Identifies problem-solving strategies appropriate to K-8 classrooms. Provides practice developing research and standards based instruction and assessment plans that support an integrated problem based curriculum. Prerequisite: Current teaching certificate, admission to the Mathematics Education Endorsement program, or permission.

**ED S610 Guidance and Discipline in Early Childhood Education**

**3 credits (2+2) J**

Survey of current research regarding social, emotional, and moral development of the young child. Examination of home, school, developmental, and societal factors which create discipline problems. Analysis of guidance and discipline practices as they influence child development and facilitate group management in preschool and primary grades. 25 hours lab required.

**ED S612 School-Community Relations**

**3 credits (3+0) J**

Development of attitudes and behaviors to help those involved in education to deal directly with the affective domain of learning. Effective sending and receiving in communication and techniques for creating a positive communication atmosphere for the profession.

**ED S614 Numeration and Operations: Math Content and Pedagogy for K-8 Teachers**

**3 credits (2+2) J**

Provides K-8 teachers with the content to understand numbers, how they are represented, and the relationships between and among numbers, number systems, and basic operations. Emphasizes standards and research based practices for helping K-8 students construct efficient computational skills. Provides practice developing instruction and assessment plans that integrate number sense, estimation strategies, and efficient computational skills into a problem based curriculum. Prerequisite: ED S608.

**ED S615 Literacy in the Intermediate and Middle School Grades**

**3 credits (2+2) J**

Literacy philosophy, theory and practice in the intermediate classroom. Teaching to individual differences; planning, teaching and assessing for student literacy; organizing and managing for optimal students learning; communication with parents; and professional behavior. Practicum experience in a classroom (grades 4-8) is required. Requires access to computer, Internet, e-mail, DVD, and audioconference. Prerequisite: ED S230, S333 and admission to Elementary Credential program.

### **ED S616 Math Methods in the K-8 Classroom**

**3 credits (2+2) J**

Philosophy, research, organization, methods and materials of an elementary math program. Emphasis on activities with large and small groups of students, using manipulatives to develop children's understanding of math concepts, processes and problem solving. Practicum in K-8 classroom required. Requires access to computer, Internet, e-mail, DVD, and audioconference. Prerequisite: ED S230, S333, and admission to Elementary Credential program.

### **ED S617 Science Methods in the K-8 Classroom**

**3 credits (2+2) J**

The guiding ideas, materials and methods of current science instruction for elementary school children. Emphasis on hands-on, minds-on learning and helping children build conceptual webs. Requires practicum in K-8 classroom. Requires access to computer, internet, e-mail, DVD, and audioconference. Prerequisite: ED S230, S333, and admission to Elementary Credential program.

### **ED S618 Social Studies in the K-8 Classroom**

**3 credits (2+2) J**

Addresses the Alaska Teacher Standards for teaching social studies in the elementary classroom. Covers theories, methods and materials; issues behind philosophies of teaching; specific inquiry in a social science topic; planning, teaching and evaluating a wide variety of activities and lessons; development of long-term plans; goals and units for social studies within the Alaska Content Standards. A weekly practicum in a K-8 classroom is required. Requires use of Internet, e-mail, audioconference, and DVD. Prerequisite: ED S230, ED S333, and admission to the Elementary Credential program.

### **ED S619 Classroom Management and Discipline**

**3 credits (2+2) J**

Planning and carrying out an overall approach to managing an elementary classroom that allows for effective instruction and constructive discipline. Practicum in K-8 classroom required. Requires access to computer, Internet, e-mail, DVD, and audioconference. Prerequisite: ED S230, S333, and admission to Elementary Credential program.

### **ED S620 Curriculum Development**

**3 credits (3+0) J**

Basic definition of curriculum. Present need for curriculum improvement; criteria for selection of broad goals; types of curriculum framework and consideration of the organization of specific learning experiences as part of the curriculum structure.

### **ED S626 Classroom Research**

**3 credits (3+0) J**

Addresses the philosophy and methodology of ethnographic classroom research, the role of classroom research within the educational profession, and the reflective nature of such research. Students will learn methods of qualitative research and utilize them in classroom research. Prerequisite: current teaching certificate or permission.

### **ED S627 Educational Research**

**3 credits (3+0) J**

Techniques of educational research; selection of topics and problems, data gathering, interpretation and preparation of reports.

### **ED S628 Technology in Instructional Design**

**3 credits (2+2) J**

The focus of this course is to build on basic computing skills and their use within current educational practice of meaningful integration of technology into the classroom environment. Students will create a standards-based instructional unit modeling appropriate uses of technology to support learning, develop a variety of techniques to use technology to assess student learning of subject matter, and research best practices related to applying appropriate technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.

### **ED S630 Classroom Integration of Tool Software**

**3 credits (2+2) J**

Puts an equal focus on instructional design and the wise integration of tool software. Activities guide students in using word processing, databases, spreadsheets, simple graphics, and educational research in the development of a standards-based unit. Students will learn to critically evaluate software and other electronic teaching resources. Classroom practicum required. Prerequisite: Graduate or upper division standing, teaching certificate, or permission.

### **ED S631 Advanced Educational Psychology**

**3 credits (3+0) J**

Focuses on the review of relevant learning theories, learning styles, differentiation of instruction and assessment for special needs students. Activities guide students to integrate learning theories, basic teaching skills, and field-based applications. Specifically students will apply instructional strategies that promote optimal learning in order to structure the classroom environment for success. Prerequisite: Current teaching certificate or instructor permission.

### **ED S632 Classroom Internet Integration**

**3 credits (2+2) J**

Focuses on the integration of online communication opportunities and strategies into teaching. Topics include electronic mail, assistive technology, Web page design, computer conferencing and emerging technologies. Students will create a classroom-based project integrating online communication tools. Students must have access to internet, e-mail, and computer software for word-processing, gif and jpeg graphics, and web-authoring. Additional lab hours required. Prerequisite: ED S628, and current teaching certificate, or instructor permission.

### **ED S633 Classroom Integration of Multimedia**

**3 credits (2+2) J**

Covers emerging technologies and software applications in education, including desktop publishing, graphics and multi-media. Prerequisite: ED S628, and current teaching certificate, or instructor permission.

### **ED S634 Classroom Integration of Audio–Video**

**3 credits (2+2) J**

Provides an overview of TV and audio productions for instructional use. Educators are encouraged to develop classroom-based projects. Topics include all facets of video production (planning, budgeting, scripting), equipment use, maintenance and purchasing, tape formats and editing, and video production. Additional lab hours required. Prerequisite: ED S628, and current teaching certificate, or instructor permission.

### **ED S635 Thinking about Technology**

**3 credits (3+0) J**

Provides philosophical and practical foundations for students to analyze the social and ethical dimensions of educational technologies. Course readings and activities are designed to help educators better understand the issues implicit in modern information technologies. Participants develop activities and identify issues for their own students to consider, debate or research. Prerequisite: ED S628, and current teaching certificate, or instructor permission.

### **ED S640 Instruction in the Arts: Art, Music, and Drama**

**1 credit (1+0) J**

Introduction to the current theories of art, music, and drama education and the integration of the arts across the curriculum. Skills and techniques needed by elementary and middle school teachers to provide an effective program are explored. Prerequisite: Admission to the MAT Elementary (K-8) program.

### **ED S641 Instruction in Science, Social Studies, Physical Education and Health**

**2 credits (2+0) J**

Theories, methods and materials of the instruction and assessment of science, social studies, physical education, and health. Emphasis on inquiry, conceptual learning and active learning in the context of local, state, and national standards. Discipline content is learned through demonstration lessons. Application is made through MAT field internship. Methods of developmentally appropriate instruction for diverse populations and interventions and accommodations for special populations are included. Technology support and integration is taught and modeled. Prerequisite: Admission to the MAT Elementary (K-8) program.

### **ED S643 Learning Theory, Development and Guidance**

**1 credit (1+0) J**

Study of the theories of learning, child development, behavior and guidance and the implications and applications to elementary and middle school instruction. Educational approaches in the field of early childhood education are explored as well as how guidance theories are related to what is known about child development and affective needs. Implications to teacher behavior, student-teacher relationships, community building, and communication are examined. Issues of choice, ownership, responsibility, autonomy, individual learning styles and multiple intelligence are considered in terms of developmentally appropriate practice. Connections to family and community are examined in relation to student learning and behavior. Prerequisite: Admission to the MAT Elementary (K-8) program.

### **ED S645 Designing Curriculum for Effective Instruction**

**1 credit (1+0) J**

Study of the backward design of curriculum and application to the development of an integrated curricular unit. Students learn to start with a learning objective, design final assessment for that objective and then design learning activities to facilitate the learning desired. Students develop an integrated unit which is subsequently taught in their internship residency. Prerequisite: Admission to the MAT Elementary (K-8) program.

### **ED S652 Understanding and Teaching Young Children I: Social and Emotional Development**

**3 credits (2+2) J**

Analysis of the learning environment and of teaching approaches as they impact the young child's social, emotional and cognitive development. Examination of individual development and cultural issues as they relate to appropriate educational experiences for young children in preschool and the primary grades. 25 hours of lab required.

### **ED S653 Understanding and Teaching Young Children II: Creative, Physical and Healthy Development**

**3 credits (2+2) J**

An analysis of learning environments and teaching approaches as they impact the young child's creativity, physical development and general health during the preschool and primary grade years. 25 hours lab required.

### **ED S654 Algebra and Functions: Content and Pedagogy for K-8 Teachers**

**3 credits (3+0)**

Provides K-8 teachers with the underlying principles and concepts of algebra and functions. Emphasizes building algebraic thinking through an examination of patterns, relationships, and functions with practice developing multiple representations of functions using tables, graphs and verbal rules. Examines current instructional and assessment practices in mathematics that are research and standards based and that lead to algebraic reasoning for K-8 students. Prerequisite: ED S614.

### **ED S655 Geometry and Measurement: Content and Pedagogy for K-8 Teachers**

**3 credits (3+0)**

Provides K-8 teachers with the underlying principles of geometric and spatial sense and the levels of geometric learning with practice developing a variety of physical models, manipulatives, and software appropriate to K-8 classrooms. Examines current instructional and assessment practices in geometry that are research and standards based and that lead to visualization and spatial reasoning for K-8 students. Prerequisite: ED S614.

### **ED S656 Data Analysis, Statistics, and Probability: Content and Pedagogy for K-8 Teachers**

**3 credits (3+0)**

Provides K-8 teachers with the basic concepts of data analysis, statistics and probability, with practice using descriptive and inferential statistics to analyze data, and make predictions and decisions. Examines current research and standards based instructional and assessment practices in the areas of collecting, displaying and analyzing data, and experimental and theoretical probability that lead to data analysis, inferential reasoning and real world applications for K-8 students. Prerequisite: ED S614

### **ED S657 Calculus and Trigonometry: Content and Pedagogy for K-8 Teachers**

**3 credits (3+0)**

Examines the underlying concepts of calculus and trigonometry connected to the mathematical concepts in the typical K-8 math curriculum. Emphasizes current instructional and assessment practices in mathematics that are research and standards based and that promote student understanding of the basic concepts on which trigonometry and calculus are founded. Prerequisite: ED S614.

### **ED S661 Literacy and Young Children**

**3 credits (2+2) J**

Developmentally appropriate procedures to facilitate young children's explorations in reading and writing. Integrating written language experiences with oral language development during preschool and primary grade years. Additional 25 hours lab required. Prerequisite: ED S605 or permission for ECE program; ED S230 and S333 for Elementary Credential.

### **ED S664 Young Child and Classroom Management**

**3 credits (2+2) J**

Appropriate curriculum, assessment and classroom environments to enhance the learning and development of young children in preschool and primary grades. 25 hours lab required. Additional two hour lab per week required. Prerequisite: Permission by signature on registration.

### **ED S666 Advanced Studies in the Exceptional Learner**

**2 credits (2+0) J**

Study of identification and accommodation of learning for exceptional children. Survey of current research and analysis of theory as a base for instruction and curricular decisions.

### **ED S670 Planning for Educational Technology**

**3 credits (3+0) J**

Students will learn the process of creating a long range plan and how to develop strategies for integrating all types of educational technology in school programs. Prerequisite: ED S628, and current teaching certificate or instructor permission.

### **ED S671 Language, Reading, and Culture**

**3 credits (3+0) J**

Core emphasis is the research on sociolinguistics as it relates to reading. Focus is on language acquisition, dialect, and home and community influences. The history and philosophy of reading are also course components. Prerequisite: Admission to M.Ed. Reading program or permission.

### **ED S673 Educational Applications of Networking**

**3 credits (3+0) J**

Examines the theoretical and practical considerations in planning for, developing and using educational applications of local area networks (LANs), wide area networks (WANs), the Internet, and other emerging telecommunications technologies. Prerequisite: ED S628, current teaching certificate or instructor permission.

### **ED S674 Developing Reading, ECE–12**

**3 credits (3+1) J**

The reading process, emergent literacy and models for teaching reading are central themes in this course. Content includes theories of language development, research on language, cognition, and language systems as they relate to reading. Prerequisite: ED S671 and admission to M.Ed. Reading program, or permission.

### **ED S675 Reading and Cognition**

**3 credits (3+0) J**

Third course in a sequence focused on the theories and processes of reading. Emphasizes the connection between thinking and reading, and between the process of reading, writing, listening, speaking, and viewing. Examines the social and emotional aspects of reading and the ways people respond to written text. Prerequisite: ED S671, S674, and admission to the M.Ed. Reading program, or permission.

### **ED S676 Reading Instruction and Assessment I**

**3 credits (2+2) J**

Focuses on teaching reading and writing using a variety of reading, writing and study strategies and proven, effective practices for a broad range of students, including those with special needs. Topics include reading comprehension, word identification, vocabulary, spelling, study skills, and the writing process, including planning and mechanics. The Alaska Standards for English/Language Arts and the assessment of reading and writing skills and proficiencies are emphasized. Students will teach their own students how to improve their reading and writing, and will develop and implement a classroom-based comprehensive reading program they will share as a model for a school program. Prerequisite: ED S675, S678, S679, and admission to M.Ed. Reading program, or permission.

### **ED S677 Reading Instruction and Assessment II**

**3 credits (3+0) J**

Assessment of reading, with a specific focus on the reading behaviors of individual students, and effective practices associated with developing those students' skills. Emphasis is on understanding reading difficulties, the analysis and use of reading assessments, the development of individual instructional plans, and communication of meaningful data to multiple audiences. Students will utilize multiple models of reading, and focus on those that contribute to variations in reading ability. Prerequisite: ED S675, S676, and admission to M.Ed. Reading program, or permission.

### **ED S678 Literature and Reading: Supporting Readers at All Levels**

**3 credits (3+0) J**

In this course participants will read, analyze and design ways to use a wide variety of literature to support readers at all levels. Participants will demonstrate their knowledge with students and staff.

### **ED S679 Reading and Literacy in the Content Areas**

**3 credits (3+0) J**

In this course students will learn reading strategies that support literacy in the content areas/disciplines. It will also focus on the inter-related processes of writing, reading, listening and speaking in the literacy development of students. Some emphasis will be given to the use of technology as a tool to enhance content area literacy. The role of teacher as researcher will also be explored.

### **ED S680 Advanced Multicultural Education**

**3 credits (3+0) J, K**

Focuses on effective ways of accommodating cultural diversity in the classroom, and facilitating the appreciation of the differences that exist among people. Explores ways teachers and school systems can support equitable learning for all students, and appreciation for differences. Includes issues of the indigenous populations of Alaska and rural schooling, with attention to the Alaska Standards for Culturally Responsive Schools. Explores possibilities in prejudice reduction, curricular inclusion, an empowering school culture, and an equity pedagogy.

### **ED S681 Reading and Writing/Literacy Instruction I**

**3 credits (3+0) J**

The process of reading and writing acquisition and development, and literacy pedagogical theories and practices, based on K-8 standards at national, state and local levels. Principles from reading, language and child development are used to study the instructional development of reading, writing, listening, speaking, and viewing for grades K-8. Factors such as phonics, other decoding strategies, comprehension, literacy response, assessment, and genres and their text structures are considered. Development of writing skills and strategies within a writing process approach is demonstrated. Use of children's literature is included. These will be applied in MAT field internship. Technology support and integration is taught and modeled. Methods of developmentally appropriate instruction for diverse populations and interventions and accommodations for special populations are included. Practicum work required in following term. Prerequisite: MAT Elementary program students only.

### **ED S682 Reading and Writing/Literacy Instruction II**

**3 credits (2+2) J**

Continuation of ED 681. Application and extension of knowledge of literacy, literacy instruction, and second-language learning, including integrating children's literature into all instruction, and integrating drama, art and music into literacy instruction. This course content and the critical reflection of its implementation in the program's correlated internship experience will be used in the exit portfolio. Practicum work required in the following term. Prerequisite: MAT Elementary program students only.

### **ED S686 Mathematics Instruction: Theory and Practice I**

**2 credits (2+0) J**

Development of conceptual knowledge, procedures, reasoning processes and instructional practices of mathematics, based on K-8 standards at national, state, and local levels. Factors of mathematics content and instruction studied include number systems, number sense, geometry, measurement, statistics, probability, and patterns. Problem solving is emphasized. Technology support and integration is taught and modeled. Prerequisite: MAT Elementary program students only.

### **ED S687 Mathematics Instruction: Theory and Practice II**

**2 credits (2+0) J**

Continuation of ED S686. Theories of instructional design in mathematics and the resulting learning are examined and analyzed. Methods of developmentally appropriate instruction and interventions and accommodations for special populations are included. This course content and the critical reflection of its implementation in the program's correlated internship experience will be used in the exit portfolio. Prerequisite: MAT Elementary program students only.

### **ED S688 Student Teaching**

**6 credits (0+0+24) J**

Supervised teaching in elementary or secondary schools. The department may limit registration, determine assignments, and prescribe the number of teaching hours required. Prerequisite: Admission to student teaching and 3.0 GPA in program sequence.

### **ED 691 Teaching Internship**

**1–4 credits (0+0+4 per credit) J**

Intensive internship for Elementary K- 8 MAT students and Secondary MAT students. Repeatable for accumulated credit due to progressive content within program sequence.

### **ED S692 Education Seminar**

**1–4 credits J**

Current topics in Education (Admission by Arrangement). Maximum credit allowed toward advanced degrees: four credits.

### **ED S696 Reading Teacher As Leader**

**3 credits (2+2) J**

A capstone course to display and increase the reading professional's knowledge base, particularly related to analysis of the body of research on reading instruction for culturally and linguistically diverse students. Leadership skills emphasize teachers as active members of a range of learning communities, with collaborative and integrative skills needed in complex organizations. They bring specialized knowledge to colleagues, paraprofessionals and lay persons, and help translate it into concrete applications that improve student learning. Topics include identifying, implementing and supporting effective instruction for diverse students; collaboration and communication with all stakeholders; and professional development and support for paraprofessionals working with diverse students. Practicum required. Prerequisite: ED S677 and admission to M.Ed. Reading program, or permission.

### **ED S698 Master's Research Project or Portfolio**

**1–3 credits (Variable) J**

Either a research paper or project jointly approved by the student's graduate committee. The student research paper/project should coincide with the student's professional objectives. The portfolio should document the required knowledge and ability to apply the standards set by the conceptual framework of the UAS School of Education. Students creating a portfolio should request portfolio criteria from the School of Education or their graduate advisor. An oral defense of either the paper/project or the portfolio may be required by the student's graduate committee.

## **Special Education (EDSE)**

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### **EDSE S410 Assessing Students With Disabilities**

**3 credits (3+0) J**

Techniques and methods for assessing students having disabilities. Focus is on the purpose and assumption of assessment; testing terminology and statistics; and the administration and interpretation of formal and informal assessment procedures. Concurrent field experience and Internet access required. Prerequisite: Admission to Special Education Endorsement program. Corequisite: EDSE S482.

### **EDSE S412 Curriculum and Strategies I: Low Incidence**

**3 credits (3+0) J**

Development, implementation and evaluation of Individual Education plans (IEPs) for students with intensive needs (e.g. Autism, Multiple Disabilities, Physical Disabilities). Provides in-depth understanding of best practice strategies for supporting students with low incidence disabilities. Concurrent field experience and Internet access required. Prerequisite: Admission to Special Education Endorsement program. Corequisite: EDSE 482.

### **EDSE S422 Curriculum and Strategies II: High Incidence**

**3 credit (3+0) J**

Methods of instruction and strategies for addressing the needs of students with mild learning and behavior problems. Theoretical basis for selecting approaches is presented, along with practical strategies that can be used in the classroom. Concurrent field experience and Internet access required. Prerequisite: Admission to Special Education Endorsement program. Corequisite: EDSE 482.

### **EDSE S482 Inclusive Classrooms For All Children**

**3 credits (3+0) J**

Provides an in-depth understanding of the concepts, strategies, and issues that surround supporting the needs of students who experience disabilities in the general education classroom. Concurrent field experience and Internet access required. Prerequisite: PSY S101, PSY S250, ED S333, or ED S631, or instructor permission.

### **EDSE S483 Language and Literacy: Assessment and Interventions**

**3 credits (3+0) J**

Development, implementation and evaluation of Individual Education Plans (IEPs) for students with language and literacy difficulties. Instructional procedure for designing and delivering reading instruction and writing in content areas. Will include findings from brain research, emergent literacy, assessment, primary and intermediate decoding and comprehension strategies, and monitoring progress. Concurrent field experience and Internet access required. Prerequisite: EDSE S482 and ED S302 or instructor/advisor permission, and admission to Special Education Endorsement program.

### **EDSE S484 Collaboration and Partnerships Between Parents and Professionals**

**3 credits (3+0) J**

Provides professionals with an in-depth understanding of concepts, strategies, and issues that surround working with families and other collaborative partners of students who experience disabilities. The course prepares students for effective collaborative partnerships including family-professional interactions. Concurrent field experience and Internet access required. Prerequisite: Admission to Special Education Endorsement program. Corequisite: EDSE S482.

### **EDSE S485 Vocational Education and Transition Considerations**

**3 credits (3+0) J**

Provides an in-depth understanding of concepts, strategies, and issues that surround supporting students in developing vocational awareness including on-the-job training opportunities. Examines the development, implementation, and evaluation of transition components. Field experience required. Corequisite: ED/EDSE S482. Prerequisite: Admission to Special Ed Endorsement program, and Internet access.

### **EDSE S494 Special Education Practicum**

**3 credits (1+0+8) J**

Field experiences with individuals who have disabilities in public schools and affiliated facilities. Assignments vary across areas of teaching specialization. Includes weekly seminar. Internet access required. Prerequisite: Admission to Special Education Endorsement program and completion of six of these seven EDSE: 410, 412, 422, 482, 483, 484, 485.

### **EDSE S495 Special Education Portfolio Development**

**2 credits (2+0) J**

Special education endorsement program students will document their knowledge of the UAS Center for Teacher Education conceptual framework, and will demonstrate their ability to apply national, state, and local teaching standards to special education settings. Emphasizes the organization, reflection and writing skills necessary to develop a meaningful portfolio. Must be taken concurrently with EDSE S494.

## **English (ENGL)**

\*Courses below 100 level are not applicable to the A.A. degree or to baccalaureate degrees.

### **ENGL S083 Spelling Improvement\***

**1 credit (1+0) S**

Enables the student to improve spelling skills through memory devices, practice, and error recognition. Course covers prefixes, suffixes, word endings, common misspellings, plurals, possessives, contractions, abbreviations, and geographic names.

### **ENGL S084 Vocabulary Improvement\***

**1 credit (1+0) S**

Enables students to improve vocabulary skills through context clues, central ideas, Greek and Latin derivatives. Anglo-Saxon/French/Italian/Spanish words used in English, and prefix/suffix derivatives. Information on taking vocabulary sections on standardized tests will be presented.

### **ENGL S092 Improving Writing Skills**

**4 credits (4+0) J, K, S**

Students will study writing as a process of composing and as a rhetorical act of communication. Review of basic grammar, mechanics, and usage will receive special attention. Students will write numerous short essays, which will be submitted in a portfolio for assessment. Reading strategies will be discussed and students will be encouraged to read interactively. Prerequisite: English placement test.

### **ENGL S105 Critical Reading and Thinking**

**4 credits (4+0) S**

This class is designed around a wide variety of reading materials, ranging from fiction to academic writings. This exposure allows students to increase reading comprehension, to build on their stock of background information, to strengthen note taking and vocabulary skills, and to develop critical thinking skills. Additional study skills will be addressed in the context of critical thinking activities. This course may be self-selected or required, based on English placement score.

### **ENGL S110 Introduction to College Writing**

**4 credits (4+0) J, K, S**

This course focuses on the basics of writing, including control of basic grammar and punctuation. Through frequent writing and revision, students develop a portfolio of essays that is submitted to a review panel for assessment at mid-term and at the end of the semester. The course does not satisfy the GER communication requirement. Prerequisite: ENGL S092 (C or higher) or placement test.

**ENGL S111 Methods of Written Communication**

**3 credits (3+0) J, K, S GER**

Instruction is on techniques of essay organization and development, research, and analytical reading and writing. Critical analysis and research papers are required. Prerequisite: English ENGL S110 (C or higher) or placement test.

**ENGL S211 Intermediate Composition: Writing About Literature**

**3 credits (3+0) J, K, S GER**

This course focuses on exploring, understanding and appreciating literature, which will generate analytical student writing. Students write analyses of at least three works from the various genres (poetry, short fiction, drama, and novel or film). Traditional literary research among critical sources leads to at least one research paper. Prerequisite: ENGL S111 (C or higher).

**ENGL S212 Technical Report Writing**

**3 credits (3+0) J, K, S GER**

Instruction in composition of professional correspondence and technical reports. Develops a broad range of college and career writing skills, including audience analysis, readability, and effective style. Significant critical reading and a major investigative report required. Prerequisite: ENGL S111 (C or higher).

**ENGL S215 Introduction to Literary Study**

**3 credits (3+0) J, K GER**

This course provides students with a thorough introduction to college-level literary study. By reading and discussing literary texts, students will gain an understanding of major literary genres, critical terminology, and theoretical positions. Students will become familiar with the conventions of literary research and critical writing by participating in workshops that enable them to exchange ideas and sharpen skills. Corequisite: ENGL S211 (C or higher) or instructor permission.

**ENGL S218 Themes in Literature: Selected Topics**

**3 credits (3+0) K, S**

Exploration of literary themes in various genres of literature, including fiction, poetry, drama, and film. Specific theme is announced in the semester course schedule. The course may be repeated for credit when content varies. Prerequisite: ENGL S211 (C or higher) or instructor permission.

**ENGL S223 Survey of British Literature I**

**3 credits (3+0) J, K GER**

Analysis and interpretation of selected writings from the Anglo-Saxons to the eighteenth century. Prerequisite: ENGL S211 (C or higher) or instructor permission.

**ENGL S224 Survey of British Literature II**

**3 credits (3+0) J, K GER**

Analysis and interpretation of selected writings from the Romantic period to the present. Prerequisite: ENGL S211 (C or higher) or instructor permission.

**ENGL S225 Survey of American Literature I**

**3 credits (3+0) J, K GER**

Analysis and interpretation of selected writings from earliest European contact in America to the Civil War. Prerequisite: ENGL S211 (C or higher) or instructor permission.

**ENGL S226 Survey of American Literature II**

**3 credits (3+0) J, K GER**

Analysis and interpretation of selected writings from the Civil War to the present. Prerequisite: ENGL S211 (C or higher) or instructor permission.

**ENGL S261 Introduction to Creative Writing**

**3 credits (3+0) J, S GER**

Introduction to the study and practice of writing original works of fiction and poetry. Writing techniques are explored through class discussion, study of established writers, and participation in writing workshops. Prerequisite: ENGL S211 (C or higher) or instructor permission.

**ENGL S302 Masterpieces of World Literature**

**3 credits (3+0) J**

This course focuses on study of masterpieces of world literature in translation, selected from diverse genres, literary periods, and cultural traditions. Prerequisite: ENGL S211 (C or higher) and upper-division standing, or instructor permission.

**ENGL S303 Literature and the Environment**

**3 credits (3+0) J, S**

This course surveys the relationship between literature, human culture, and the natural environment. Readings will be selected from diverse traditions and genres. Prerequisite: ENGL S211 (C or higher) and upper-division standing, or instructor permission.

### **ENGL S305 Children's Literature**

**3 credits (3+0) J**

This course will introduce the major genres and conventions of literature for children as well as develop critical skills for reading, thinking, and writing about children's literature and culture. In learning about genres and ranges of children's literature, we will ask deeper questions about what we offer to children as truth, what we think about society and ourselves, and what we offer children as ways of growing up. Prerequisite: ENGL S211 (C or higher) and upper-division standing, or instructor permission.

### **ENGL S311 Advanced Composition**

**3 credits (3+0) J**

Advanced principles of expository prose for academic purposes with some work on fiction and poetry. Elements of rhetoric, style, grammar, paraphrasing, and research documentation. Students will participate in a writing workshop approach: writing, responding, revising, editing, and publishing frequently. Successful completion of the course involves a portfolio review by a panel of readers. Prerequisite: ENGL S211 (C or higher) and upper-division standing, or instructor permission.

### **ENGL S330 Shakespeare**

**3 credits (3+0) J**

This course provides an introduction to the plays and poetry of William Shakespeare. Prerequisite: ENGL S211 (C or higher) and upper-division standing, or instructor permission.

### **ENGL S340 English Language Studies**

**3 credits (3+0) J, S**

Provides an overview of the grammar and history of the English language. Students will study the origins and structure of the English language, with a special focus on the ways that language use changes over time and from place to place. The course also addresses words and their sounds; language acquisition; dialects and Standard English; prescriptive and descriptive grammar; the history of English; meaning and style; and the social, economic, cultural, and political aspects of language use and language policy. Required course for B.A. Prerequisites: ENGL S211 (C or higher) or instructor permission.

### **ENGL S362 Memoir Writing**

**3 credits (3+0) J, S**

Study and practice in the techniques of memoir writing. Writing techniques will be explored through class discussion, study of literary models, and participation in writing workshops. Prerequisite: ENGL S261 (C or higher) and upper-division standing, or instructor permission.

### **ENGL S363 Nature Writing**

**3 credits (3+0) J, S**

Study and practice in the techniques of nature writing. Writing techniques will be explored through class discussion, study of literary models, and participation in writing workshops. Classroom instruction may be supplemented by short excursions into the outdoors. Prerequisite: ENGL S261 (C or higher) and upper-division standing, or instructor permission.

### **ENGL S365 Literature of Alaska: Native and Non-Native Perspectives**

**3 credits (3+0) J**

This course explores Alaskan literature: oral and written, traditional and contemporary, Native and non-Native. Course texts will be taken from diverse cultural and geographical areas of Alaska. Special attention will be given to different styles and genres of oral and written literature as well as different social and cultural values embedded in these texts. Prerequisite: ENGL S211 (C or higher) and upper-division standing, or instructor permission.

### **ENGL S370 Native American Literature**

**3 credits (3+0) J**

Explores traditional and contemporary Native American literature in North America. May include traditional oral forms, novels, short stories, film and poetry. Literary texts will be discussed in relation to cultural contexts and interpretations as well as readings in contemporary critical theory. Prerequisite: ENGL S211 (C or higher) and upper-division standing, or instructor permission.

### **ENGL S395 Portfolio Writing**

**1-3 credits (0+0+4-12) J**

Students work with the instructor independently on the preparation of a portfolio of writing as required by some academic programs. The course includes a review of basic academic writing and assistance with writing, compiling, and revising portfolio essays. Highly recommended for BLA transfer students. Prerequisite: ENGL S211 (C or higher) and upper-division standing, or instructor permission.

### **ENGL S414 Research Writing**

**3 credits (0+0+12) J**

This course is designed for students who plan to work on a project in their major field. The instructor regularly critiques students' work and evaluates their completed projects. Students must have proposals prepared when seeking permission to enroll. May be repeated for up to nine credits. Prerequisite: ENGL S211 (C or higher) and upper-division standing, or instructor permission.

**ENGL S418 Advanced Themes in Literature: Selected Topics**

**3 credits (3+0) J, K, S**

Advanced exploration of literary themes in various genres of literature, including fiction, poetry, drama, and film. The specific theme is announced in the semester course schedule. May be repeated for credit when content varies. Corequisite: ENGL S311 or instructor permission.

**ENGL S419 Major Authors: Selected Topics**

**3 credits (3+0) J**

Advanced exploration of major authors in the history of British and American literature. Examples include Geoffrey Chaucer, William Shakespeare, John Milton, Jane Austen, Herman Melville, or Virginia Woolf. The specific author(s) will be announced in the course schedule. May be repeated for credit when content varies. Corequisite: ENGL S311 or instructor permission.

**ENGL S420 Genre Studies: Selected Topics**

**3 credits (3+0) J**

Provides an in-depth exploration of a major literary genre. Examples include epic, romance, autobiography, or the novel. The specific genre will be announced in the course schedule. May be repeated for credit when content varies. Corequisite: ENGL S311 or instructor permission.

**ENGL S421 Women and Literature: Selected Topics**

**3 credits (3+0) J**

Focuses on the contributions of women to literary history. Reading includes a variety of texts by women as well as works of theory and criticism. The specific theme will be announced in the course schedule. May be repeated for credit when content varies. Corequisite: ENGL S311 or instructor permission.

**ENGL S422 Literary Periods: Selected Topics**

**3 credits (3+0) J**

In-depth study of selected literary periods in English or American literature. The specific literary period will be announced in the course schedule. May be repeated for credit when content varies. Corequisite: ENGL S311 or instructor permission.

**ENGL S423 Ecocriticism**

**3 credits (3+0) J**

An introduction to the theory and practice of ecocriticism. Reading will include the history and theory of environmental literature as well as research in the interdisciplinary fields of environmental philosophy and ecofeminism. Emphasis will be placed on exploring the interplay of human culture with nature in literary texts. Corequisite: ENGL S311 or instructor permission.

**ENGL S461 Advanced Creative Writing: Selected Topics**

**3 credits (3+0) J, S**

Advanced study and practice in the techniques of creative writing. This may include poetry, drama, fiction, creative non-fiction, or other genres. Creative writing techniques are explored through literary study and writing workshops. The specific theme and/or genre will be announced in the course schedule. May be repeated for credit when content varies. Prerequisite: ENGL S261 (C or higher) and upper-division standing, or instructor permission.

**ENGL S491 Internship**

**3 credits (0+0+12) J**

The English internship program provides students with an opportunity to gain experience working in a language-based field of employment (e.g., journalism, teaching, public relations, research, or editing). Prerequisite: Admission to the B.A. program in English degree program, senior standing, and permission of the student's advisor.

**ENGL S499 Thesis**

**3 credits (0+0+12) J**

Independent thesis or project in the student's area of interest as approved by the student's advisor. The thesis will be presented to and evaluated by panel to be determined by the English department. Prerequisite: Admission to the B.A. in English program or creative writing minor, senior standing, and instructor permission.

## **Environmental Science (ENVS)**

### **ENVS S101 Introduction to Environmental Science**

**4 credits (3+3) J GER**

This course examines the atmospheric, hydrospheric, lithospheric, and oceanic systems that define the environment; the interactions among these systems; energy as an environmental parameter; and the effects of physical systems on the biosphere. The labs focus on measurement and description of the environment using methods from meteorology, hydrology, and earth science; Global Positioning Systems; and other relevant field techniques are introduced. Corequisite: MATH S105.

### **ENVS S110 Introduction to ArcGIS**

**1 credit (1+0) J**

Students will use ArcGIS software to analyze spatial and tabular data and to create maps and charts that present this data.

### **ENVS S111 Introduction to Differential GPS**

**1 credit (1+0) J**

An overview of the Global Positioning System; the development of a data dictionary, data acquisition using differential GPS, and integrating GPS into environmental applications.

### **ENVS S200 Hazardous Materials Management HAZWOPER**

**3 credits (3+0) J, S**

This course will provide 40 hours of instruction for workers who are at hazardous materials operation sites for occasional specific limited administrative, regulatory, or scientific tasks such as groundwater monitoring, land surveying, geophysical surveying, or soil sampling. The final 16 hours of the course will provide further training for students intending to perform cleanup work, to respond to emergencies, or who are required to wear respirators because of hazardous atmospheres. Those who pass this course will receive a HAZWOPER Certificate.

### **ENVS S301 Soil Science**

**4 credits (3+3) J**

An introduction to the nature and properties of soils. Application of science and technology to the use of this natural resource and the roles of soil scientists in natural science disciplines. Prerequisites: CHEM S105 and CHEM S106.

### **ENVS S310 Geographic Information Systems**

**3 credits (2+3) J**

Examines the representation of spatial data with vector object models, explores the relationship between spatial data and automated thematic mapping, and trains students in the use of GIS software. Prerequisites: MATH S108 and STAT S273

### **ENVS S311 Technical Writing for Science Majors**

**3 credits (3+0) J**

In this class you will learn to write in a variety of scientific and technical forms, including reports, journal articles, and grant proposals. You will learn to write for different audiences, master the art of editing, prepare work for your ENVS portfolio or other science courses, and become adept at using online bibliographic programs. Prerequisites: ENGL S211 and upper division standing in a Science Degree Program, or permission of instructor.

### **ENVS S402 Limnology**

**4 credits (3+2) J**

A study of continental fresh water systems focusing on their physical, chemical, and biological features. Prerequisite: BIOL S271, CHEM S106, and GEOL S302, or instructor permission.

### **ENVS S403 Remote Sensing**

**3 credits (3+0) J**

Identification, interpretation and measurement of physical and cultural features using remotely sensed data; image enhancement and analysis; applications of remote sensing to different scientific disciplines; and an introduction to raster-based Geographic Information Systems. Prerequisites: MATH S107 and completion of any undergraduate introductory science course or permission of the instructor.

### **ENVS S404 Snow Hydrology**

**3 credits (3+2) J**

An in-depth look at processes related to snow in mid-latitude areas. Topics include snow formation in the atmosphere, snow accumulation and distribution, snowpack metamorphism, avalanche dynamics, snowmelt runoff and chemistry, techniques for measuring snow properties, and case studies. Labs will entail collection of field data as well as analysis of data. Required labs may take place on Saturday. Prerequisites: Science major with upper division standing.

### **ENVS S408 Biogeochemistry**

**3 credits (2+3) J**

Deals with how biological and geochemical processes affect element cycles at a variety of spatial and temporal scales. A particular emphasis is given to contemporary research in the biogeochemistry of carbon, nitrogen, sulfur, selected metals, and organic compounds of natural and anthropogenic origin. Prerequisite: ENVS S101, CHEM S106, or instructor permission.

### **ENVS S410 Advanced Geographic Information Systems**

**3 credits (2 + 3) J**

Advanced GIS examines the object models used for the representation of spatially continuous data and the analysis of those data. Specific topics include terrain models; classification; suitability analysis; utilizing imagery; local, focal and zonal functions; surface modeling, and geo-referencing. Prerequisite: ENVS S310 or instructor permission.

### **ENVS S420 Atmospheric Science**

**3 credits (3+0) J**

Explores the physical and chemical workings of Earth's planetary system, recognizing that human development of the planet has a variety of impacts at every scale--locally, regionally, and even globally. Focus is on understanding the atmosphere in terms of energetic, chemical and physical processes. Prerequisite: PHYS S103 or S211 and upper division standing, or instructor permission.

### **ENVS S491 Environmental Science Internship**

**1–4 credits (0+0+4–16) J**

Part-time work in an approved science agency or natural resource based industry. The student is to be supervised by a senior employee of the agency in cooperation with the faculty advisor.

### **ENVS S492 Environmental Science Seminar**

**1 credits (1+0) J**

Current topics environmental science. Weekly seminars will include faculty and student-lead discussions of peer-reviewed journal articles, and student presentations of ongoing undergraduate research projects. May be repeated once for a total of 2 credits.

### **ENVS S498 Research in Environmental Science**

**1–6 credits (variable) (0+0+4–24)**

Individual research in the environmental sciences undertaken by a student in consultation with a member of the Environmental Sciences Faculty. Students may submit research ideas to faculty and develop them into a project with faculty input. Requires consent of advisor and appropriate faculty sponsor.

## **Environmental Technology (ENVT)**

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### **ENVT S101 Introduction to Environmental Technology**

**3 credits (3+0) S**

An introduction to the fields of environmental science and technology. Covers the basics of ecology, nutrient and energy cycles, hydraulics, hydrology, water quality, water pollution, drinking water purification, water distribution, sanitary sewer systems, storm water control, wastewater treatment and disposal, solid and hazardous waste, and air and noise pollution. Develops basic vocabulary and shows interrelationships among the various topics.

### **ENVT S102 Applied Mathematics for Water and Wastewater Operations**

**3 credits (3+0) S**

An introduction to basic mathematics and the technical formulae used in the water and wastewater field. The basic math portion covers fractions and decimals; percents; averages; ratios and proportions; conversions and dimensional analysis; linear, area and volume calculations; scales and graphs; powers, roots and scientific notation; rounding and estimating; manipulating equations; and using calculators. The applied portion covers the calculations common to both water and wastewater operations for volume; velocity and flow; concentration and mass; loading rates; detention and retention time; efficiency; and pumping. Prerequisite: MATH S054 or placement test.

### **ENVT S103 Applied Environmental Regulations**

**2 credits (2+0) S**

Students learn to read and interpret environmental laws and regulations that drive public health and environmental protection. The class will examine the legislative processes at the federal and state levels, and explore elements common to most environmental legislation such as the Clean Air and Water Acts, the Safe Drinking Water Act, the Resource Conservation and Recovery Act, and the Occupational Safety and Health Act.

### **ENVT S110 Drinking Water Systems**

**3 credits (3+0) S**

This course covers water topics critical to the operation and maintenance of drinking water systems. Topics include surface and ground water sources, raw water storage, pretreatment, coagulation, flocculation and sedimentation, filtration, disinfection, fluoridation, corrosion control, distribution, regulations and monitoring.

### **ENVT S111 Wastewater Systems**

**3 credits (3+0) S**

This course covers wastewater topics critical to the operation and maintenance of wastewater systems. Topics include an introduction to wastewater treatment; characteristics of wastewater; wastewater collection systems construction, inspection and maintenance; primary wastewater treatment; and lagoon operations; the activated sludge process; other biological processes; sludge treatment and disposal; disinfection; and monitoring.

### **ENVT S120 Utility Management**

**3 credits (3+0) S**

This class covers utility management topics using the three elements of capacity development. Management capacity covers topics in utility organization, legal structure, planning management, and personnel administration and supervision. Technical capacity topics include asset management, operations management, and vulnerability assessment and emergency planning. Financial capacity covers topics in budgeting and accounting, financial reporting, capital project planning, rate setting, and fiscal management and controls. Prerequisite: CIOS S135 or instructor permission.

### **ENVT S130 Basic Sanitary Chemistry and Microbiology**

**2 credits (2+0) S**

This course presents an introduction to aquatic chemistry and microbiology with special attention to water and wastewater applications. Chemistry topics include atomic structure, molecules and compounds, formulas and names, chemical reaction and equations, ionization, acids, salts, bases and solutions. Microbiology topics include a survey of microorganisms, cell structure, nutrient sources, patterns of metabolism, growth and control.

### **ENVT S132 Basic Sanitary Chemistry and Microbiology Lab**

**2 credits (0+4) S**

This lab is designed to coordinate with ENVT S130. Labs develop basic chemistry and microbiology laboratory skills by performance of operational and quality control tests used in water and wastewater treatment facilities. Tests performed in the lab include pH, temperature, dissolved oxygen, chlorine residuals, fluoride residual, turbidity, alkalinity, hardness, use of the compound microscope, and the total coliform test. Corequisite: ENVT S130.

### **ENVT S203 Solid and Hazardous Waste Management**

**3 credits (3+0) S**

An introduction to solid and hazardous waste management. Solid waste topics address quantity and characteristics of municipal refuse, integrated solid waste management planning, reduce/reuse/recycle programs, and sanitary landfill selection, construction and operation. Hazardous waste topics address toxicology, chemical and physical characteristics of hazardous chemicals, generation, transportation, storage, treatment and disposal of hazardous materials, and contaminated site assessment and remediation. Prerequisite: ENVT S101.

### **ENVT S204 Instrumentation**

**3 credits (2+2) S**

An introduction to water and wastewater process instrumentation. The basic concepts of force, work, fluid flow and electricity as they relate to instrumentation will be developed. These basic concepts will then be applied to the use and maintenance of analyzers, measuring and sensing devices, signal transmission, data display and instrumentation systems for the water and wastewater industry. Devices include temperature, fluid pressure, pH, dissolved oxygen and turbidity, air and water flow measurements, particle counters, streaming current meters and PLC's. Prerequisite: MATH S105 or instructor permission.

### **ENVT S206 Introduction to Environmental Health**

**3 credits (3+0) S**

An overview of the relationship of people to their environment, how it affects their physical well-being and what they can do to influence environmental quality and to enhance public health protection. Examines health problems associated with chemical, physical and biological agents, how they impact food safety, infectious disease, air quality, water quality and land resources in community and occupational settings. Policies intended to improve public health through mitigation of environmental impacts are also discussed. Prerequisite: ENGL S110 or instructor permission. Cross-listed as HS S206.

### **ENVT S210 Water Treatment**

**3 credits (3+0) S**

This course covers the operational process of water treatment plants in detail and operational safety and equipment maintenance. Processes include pretreatment, chemical coagulation, flocculation, sedimentation and rapid sand filtration, slow sand and pressure filtration, alternative disinfection methods, corrosion control and taste and odor control. Prerequisites: ENVT S102 and ENVT S110.

### **ENVT S211 Wastewater Treatment**

**3 credits (3+0) S**

This course covers the operational process of wastewater treatment plants in detail and operational safety and equipment maintenance. Processes discussed include racks, screens, comminutors, grit removal, sedimentation, flotation activated sludge digestion-trickling filters, RBCs sludge digestion, disinfection, effluent disposal, maintenance and safety and record keeping. Prerequisite: ENVT S102 and ENVT S111.

### **ENVT S212 Hydraulics**

**3 credits (3+0) S**

Covers principles of hydraulics that related to the collection of wastewater, the distribution of potable water, and the movement of water in and around water and wastewater treatment facilities. Topics include density, fluid pressure and force, flow rates, friction head loss, hydraulic grade lines, thrust control, and static and dynamic pump hydraulics. Prerequisite: Demonstrated math skills equivalent to MATH S105.

### **ENVT S230 Intermediate Sanitary Chemistry and Microbiology**

**2 credits (2+0) S**

Continues the study of chemistry and microbiology with special attention to water and wastewater applications. Chemistry topics include oxidation/reduction reactions, water softening, chemical corrosion, chlorine chemistry, organic chemistry, biochemistry and nuclear chemistry. Microbiology topics include microbial population dynamics, public health, the microbiology of activated sludge, fixed film processes, anaerobic processes, sanitary surveys and bioassays. Prerequisites: ENVT S110, S111 and S132.

### **ENVT S232 Intermediate Sanitary Chemistry and Microbiology Lab**

**2 credits (0+4) S**

This lab is designed to coordinate with ENVT S230. Labs develop basic chemistry and microbiology laboratory skills by performance of operational and quality control tests used in water and wastewater treatment facilities. Tests performed in the lab include BOB, COD, jar test, iron, manganese, nutrient analysis activated sludge microorganisms, total heterotrophic plate count, and fecal coliform. When ENVT S230 is taken in sequence, it is recommended that the lab ENVT S232 be taken concurrently. Prerequisites: ENVT S110, S111, S132 and ENVT S230 which may be taken concurrently.

### **ENVT S240 Practicum**

**3 credits (0+0+12) S**

This course is designed to expose students to actual water and/or wastewater operations. Students with assistance from the supervising instructor and worksite supervisor will develop individualized objectives to be met by working as an entry level operator for 80 hours. Prerequisites: ENVT S101, S110, S111, S132 and instructor permission.

### **ENVT S250 Sanitary Survey Training**

**3 credits (3+0) S**

This course covers in detail the eight basic elements of a good sanitary survey. Topics include the importance of the finer details of a sanitary survey and involves students in a review of the State of Alaska Sanitary Survey forms, use of AREV records with a monitoring summary for review with the PWS, sampling sites and protocol for all regulations, review water quality being delivered to customers, quantity and reliability issues, housekeeping, operator certification, calibration of monitoring equipment, chemical safety and handling, and cross connection control issues. Prerequisite: Instructor permission.

## **Fisheries (FISH)**

(University of Alaska Fairbanks courses)  
[www.sfos.uaf.edu/academics/about/grad/fisheries/courses](http://www.sfos.uaf.edu/academics/about/grad/fisheries/courses).

### **FISH F421 Fish Population Dynamics**

**4 credits (4+0) JCSFOS**

Review and analysis of the major quantitative techniques available for assessing and predicting the status of fish populations. Demonstration and use of field and laboratory techniques and model verification; examples and case histories. Prerequisite: STAT S301, FISH F418 recommended.

### **FISH F436 Salmon Culture**

**3 credits (1+4) JCSFOS**

Biology and technology of artificial propagation of salmonids. Reproduction, embryology, growth, nutrition, genetics and pathology of salmonids in both extensive (sea ranching) and intensive rearing systems. Bioengineering of incubators, rearing containers, water diversion systems and other related topics. Laboratory exercises in measuring effects of environmental characteristics on development and growth of salmon. Prerequisites: BIOL S105 and S106, CHEM S106, BIOL F381.

### **FISH F445 Sampling Methods in Fisheries**

**3 credits (2+2) JCSFOS**

A review of standard and specialized sampling techniques in aquatic habitats. Basic sampling theory and statistical considerations will be included, as will demonstrations and use of field laboratory techniques. Shipboard sampling will be part of the course. Prerequisite: STAT S273.

### **FISH F621 Advanced Fish Population Dynamics I**

**4 credits (3+2) JCSFOS**

Contemporary techniques for analysis of fish and other populations. Theory of population, individual and multi-species growth. Theory of fishing and stock productivity. Analysis of age-structured populations. Lab work: use of computers in fisheries management. Prerequisite: MATH S201, STAT S401, and FORTRAN programming.

### **FISH F622 Advanced Fish Population Dynamics II**

**4 credits (3+2) JCSFOS**

Statistical estimation techniques and management strategies of populations. Linetranssect and other direct sampling techniques. Mark-recapture and catch-effort techniques. Change-in-ratio techniques. Assessment of risk and uncertainty. Optimal and real-time management policies. Lab work with computers. Prerequisite: FISH F621.

### **FISH F633 Pacific Salmon Life Histories**

**3 credits (3+0) JCSFOS**

Life history patterns of species and stocks of Pacific salmon compared. Evolutionary models to explain the variety of patterns. Effects of human activities on species and stocks; conservation of salmon resources. Discussion and analysis of readings from the literature. Prerequisite: FISH S427 Ichthyology.

### **FISH F651 Fishery Genetics**

**4 credits (3+0) JCSFOS**

Applications of genetics to fisheries. Topics pertaining to Alaskan fisheries will be stressed. Prerequisite: BIOL S351, STAT S273, MATH S201 recommended.

### **FISH F692 Seminar in Fisheries**

**1 credit (1+0) JCSFOS**

Current topics in fishery science and/or management. Preparation of written reports on selected topics and oral presentations. Prerequisite: graduate standing in Fisheries.

### **FISH F699 Thesis Research**

**6–12 credits JCSFOS**

Independent thesis research on a topic approved by the student's Advisory Committee. Prerequisite: permission.

## **Fisheries Technology (FT)**

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### **FT S120 Fisheries of Southeast Alaska**

**3 credits (3+0) K**

The principles, concepts and techniques of fisheries management, enhancement and rehabilitation in Southeast Alaska are reviewed in terms of the biological, economic, social and political aspects. Topics include overviews of Southeast Alaska fishing gear and geographical areas of salmon, herring, bottom and invertebrate fisheries; management methods; enhancement and rehabilitation techniques, data collection and usage.

### **FT S122 Fin Fish Culture I**

**3 credits (3+0) K**

The first course of a two semester sequence which introduces students to the principles, concepts and methods used in the production of Pacific Salmon with an emphasis on modern fish culture techniques used by Alaskan producers. The course will cover all aspects of fry and smolt production. Topics include water quality, brood stock management, egg collection and incubation, egg and live fish transport, fresh and saltwater rearing techniques, feeding practices, growth, record keeping and fish health management.

### **FT S202 Career Development for the Fisheries Professional**

**1 credit (1+0) K**

A capstone course intended to assist near graduates in developing a resume and/or work portfolio, to fine-tune interview and application skills, and to learn about opportunities for employment with assistance from faculty.

### **FT S210 Fields Methods/Safety in Fisheries Technology**

**4 credits (2+4) K**

Presents common sampling and monitoring techniques and parameters utilized by fish technicians in southeast Alaska fisheries. Provides instruction on field safety and survival techniques. Introduces nets, stream survey techniques, inter-tidal assessment techniques, fish counts, habitat assessment, data collection, recording and presentation techniques. Students will have the opportunity to try techniques in a field setting. Prerequisite: MATH S105, MATH S107, or STAT S107. Corequisite: FT S273.

### **FT S222 Fin Fish Culture II**

**3 credits (3+0) K**

The second course of a two semester sequence which introduces students to the principles, concepts and methods used in the production of Pacific salmon with an emphasis on modern fish culture techniques used by Alaska producers. Methods used to enhance and rehabilitate the five species of Pacific salmon harvested in the commercial, sport and subsistence fisheries of Alaska and Northwestern United States will be covered in detail. Provides students with understanding of regulations and guidelines established by the state of Alaska to administer salmon enhancement programs through private non-profit aquaculture association. Prerequisite: FT S122

### **FT S270 Introduction to Limnology**

**3 credits (3+0) K**

The principles, concepts and techniques of limnology sampling in association with fisheries research, management and enhancement are presented in a technical application format. Topics include physical and biological characteristics of freshwater systems, and data collection, management and interpretation. Prerequisite: MATH S105 or MATH S107 or STAT 107, and ENGL S111, and FT S120

### **FT S272 Fisheries Management, Law and Economics**

**3 credits (3+0) K**

An overview of fishery management techniques, principles and concepts; state, federal and international laws that affect fisheries; and fundamentals of fishery economic principles. Emphasis on the biological, economic, social, and political aspects of fisheries management. Examples from the Pacific Northwest will be used to highlight management techniques. Prerequisite: FT S120. Corequisite: ENGL S111 and either COMM S111 or COMM S235.

### **FT S273 Fundamentals of Fisheries Biology**

**4 credits (3+2) K**

An introduction to the major groups of fishes with particular emphasis on fishes of the Pacific Northwest region of North America. Lecture, laboratory, and field work will introduce students to fin fish and shell fish. Identification and classification, anatomy and physiology, age and growth, reproduction and behavior will be studied. Emphasis will be placed on commercially important fish species of Southeast Alaska. Prerequisite: FT S120. Corequisite: COMM S111 and ENGL S111

### **FT S291 Fisheries Technology Internship**

**1-6 credits (0+0+4-24) K**

Work in an approved fisheries agency or natural resource based industry with a fisheries emphasis. The student is to be supervised by a senior employee of the agency in cooperation with the faculty advisor.

## **French (FREN)**

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### **FREN S101 Elementary French I**

**4 credits (4+0) J GER**

An introduction to the French language and culture with development of the four skills (listening, speaking, reading and writing) with comprehension. Emphasis on oral practice and basic grammatical structures.

### **FREN S102 Elementary French II**

**4 credits (4+0) J GER**

Continuation of FREN S101. Focuses on French culture with development of the four skills (listening, speaking, reading and writing) with comprehension. Continued emphasis on oral practice and basic grammatical structures. Prerequisite: FREN S101.

### **FREN S201 Intermediate French I**

**4 credits (4+0) J**

Continuation of FREN S102. Continued development of listening, speaking, reading and writing skills. Prerequisite: FREN S102 or equivalent.

### **FREN S202 Intermediate French II**

**4 credits (4+0) J**

Continued development of listening, speaking, and writing skills with increasing emphasis on the French culture and reading comprehension. Conducted in French. Prerequisite: FREN S201 or equivalent.

### **FREN S317 French Conversation**

**3 credits (3+0) J**

A continuation of Intermediate French, FREN S202, Focus is on gaining vocabulary and learning idiomatic expressions for increased verbal fluency. Includes some fine tuning of grammar and reading skills. Emphasis is on practicing conversation and simulation creating situations in class that simulate situations students would encounter in a French-speaking community or country. Prerequisite: FREN S202, ENGL S211 (C or higher), and upper-division standing; or instructor permission.

### **FREN S318 Themes in Literature: Selected Topics**

**3 credits (3+0) J**

Advanced exploration of literary themes in various genres of literature, including fiction, poetry, drama, and film. Conducted entirely in French. The specific theme is announced in the semester schedule. May be repeated for credit when the content varies. Prerequisite: FREN S202, ENGL S211 (C or higher), and upper division standing; or instructor permission.

### **FREN S331 Language and Culture of the French Speaking World**

**3 credits (2+2) J**

An intensive immersion program designed to introduce the student to the language and culture of countries in the French speaking world. Course includes four meetings prior to departure to discuss culture, linguistics, and group dynamics while traveling for one month in the focus country. Two post-travel meetings for debriefing and synthesis. Requires two papers and a final project involving community education. Prerequisite: At least 4 credits of language study predeparture, or instructor permission.

## **Geography (GEOG)**

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### **GEOG S101 Introductory Geography**

**3 credits (3+0) J, K GER**

World regions; analysis of environment with emphasis on the major culture realms.

### **GEOG S205 Elements of Physical Geography**

**3 credits (3+0) J, K GER**

Analysis of the process that forms the physical environment and resulting physical patterns. Study of landforms, climate, soils, water resources, vegetation, and their world and regional pattern. Prerequisite: MATH S107.

### **GEOG S302 Geography of Alaska: People, Places and Potential**

**3 credits (3+0) J**

Historical, cultural and physical geography of Alaska with special emphasis on habitat and sequence occupation. Analysis of the state's resources, study of their present and past utilization with consideration of plans for future use. Prerequisite: GEOG S101 or GEOG S205.

### **GEOG S402 Human Ecology**

**3 credits (3+0) J**

Relationships of human beings with the land they occupy; study of the physical environment and human occupation of the world's major regions; consideration of the significance of cultural diversity, differing patterns of livelihood, settlement and population change. Prerequisite: GEOG S101 or GEOG S205.

### **GEOG S403 Historical Geography of North America**

**3 credits (3+0) J, K**

This course, a combination of lecture and seminar, examines the evolution of the cultural landscapes and regions of North America. It is the comparative study of the patterns of settlement and the emergence of the two nations of Canada and the United States. Prerequisite: GEOG S101 or GEOG S205.

## **Geology (GEOL)**

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### **GEOL S104 Physical Geology**

**4 credits (3+3) J, K GER**

Introduction to the study of the solid earth as an evolving planet. The earth, its materials and the processes that effect changes upon and within it. Use of topographic maps and the recognition of common rocks and minerals are emphasized in lab. Three hours lab per week required. Prerequisite: MATH S105, concurrent enrollment in MATH S105 or MATH S105 placement test.

### **GEOL S105 Geological History of Life**

**3 credits (3+0) J GER**

A survey of the evolution of life. Investigation of such topics as origin of the earth, origin of life, how did life evolve, how did continental drift affect the evolution of life, why did dinosaurs become extinct and were they really "hot blooded?"

### **GEOL S205 Environmental Geology**

**3 credits (3+0) S**

A course that explores the interaction between earth processes and Human Civilization. Students will examine current progress in and issues related to Natural Hazard Analysis, Groundwater, Landscape Evolution and Human Impacts, Technology and Demand for Minerals and Energy, Atmospheric Systems and Climate Trends, Resource Use and Environmental Legislation, and Earth Systems Planning for the 21st Century. A previous 100 level introductory science course with a lab is required. Corequisite: MATH S107.

### **GEOL S271 Earth Materials**

**4 credits (3+3) J**

This course introduces identification of the major rock-forming, metal ore, carbonate and evaporite minerals and the rocks they form, in hand specimens and in thin sections. Students learn the theoretical and practical aspects of crystallography, mineralogy, and petrology. This course includes techniques to identify minerals and rocks both in lab and at the outcrop. Aspects of mineral chemistry, mineral physical properties, and the igneous, metamorphic, and sedimentary processes that create mineral and rock forming environments are included in course. The course content is essential for all earth science students and important for scientists in environmental and health fields. Prerequisites: GEOL 104 and CHEM 105.

### **GEOL S300 Geology of Alaska**

**3 credits (3+0) J**

Exploration of the tectonic assembly of Alaska using stratigraphic, magmatic, paleontologic, structural, and geophysical data. Modern and ancient volcanic arcs and their role as accretionary markers and metal ore concentrators will be studied. Students will investigate the neotectonics of northeastern Pacific basin, Arctic Ocean and Bering Sea shelf. Precambrian to recent depositional environments and the paleobiology and hydrocarbon concentrations they contain will be considered. Pleistocene glacial and periglacial records and associated landform evolution will be evaluated. Prerequisites: Upper division standing, two previous geology courses, and MATH S108.

### **GEOL S301 Geomorphology**

**4 credits (3+3) J**

The study of landforms and soils associated with them, including their features, processes, materials and development over time. Emphasis is also placed on the application of concepts and techniques from geomorphology to understanding interactions between human activities and landforms/soils. Prerequisite: Upper division standing, two previous geology courses.

### **GEOL S302 Hydrology**

**4 credits (3+3) J**

Introduction to hydrology emphasizing physical processes and interactions between hydrological phenomena and human activities. Hydrological measurements, data analysis, quantitative descriptions, and field observations are fundamental to this course. Prerequisites: GEOL S104 or S271, MATH S108.

### **GEOL S310 Glaciation and Climate Change**

**3 credits (2+3) J**

The formation and physics of glaciers, the landforms and depositional record they leave behind, the dynamics of tidewater glaciers and fjord sedimentation. The history of glacial environments from Alaska's Gulf Coasts, Glacier Bay, and on the Juneau Icefield, will be examined for local glacial history. Climate proxy records such as polar ice cores, marine sediment records, glacial deposits, tree rings, and other data sets will be explored. Special emphasis on field work in the Mendenhall Valley to study its glacial history. Prerequisite: GEOL S104. Corequisite: MATH S200 and PHYS S104 or PHYS S212.

### **GEOL S315 Glacier Surveying**

**3 credits (0+6) J**

This is a field course to teach, through experience, glacier surveying methods and data collection. Students will travel to a glacier and carry out field observations. Students will collect glacier mass, balance data, measure ice thickness, determine surface ice velocity, measure terminus position and collect bathymetric data from adjacent glacier lakes or fjords. Students will also study Neoglacial and Pleistocene glacial geology in the glacier's valley. Students will reduce and evaluate their field data and produce field reports. Prerequisites: GEOL S301 or GEOL S310 and instructor's permission.

## **Government (GOVT)**

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### **GOVT S101 Introduction to American Government**

**3 credits (3+0) J, K, S GER**

Survey of American government, political processes, and contemporary issues, focusing on national institutions. Distributions and uses of power and the role of political values and beliefs. The Constitution and federalism; interest groups, parties, and elections; Congress, the Executive and the courts.

### **GOVT S102 Introduction to Political Science**

**3 credits (3+0) J, K GER**

Survey of the political context of contemporary life, which treats the nature of the democratic state in the modern world and analyzes today's challenges to democracy. The character of the principle elements of modern states, their systems of public law, their politics, their institutions, their patterns of public administration, and their relations with one another.

### **GOVT S202 Comparative Politics: Contemporary Doctrines and Structures**

**3 credits (3+0) K**

Analysis of the various approaches to the solution of social and political problems at the micro and macro political level as the nations of the world respond to the globalized new world order of the post Cold War World.

### **GOVT S211 State and Local Government**

**3 credits (3+0) J**

A consideration of the governmental structures and politics of states and communities in the United States studied from a comparative perspective. Special attention will be given to explaining the reasons for the differences in government and politics between states.

### **GOVT S230 Introduction to Political Philosophy**

**3 credits (3+0) J GER**

Nature and content of political philosophy through an examination of the major theories of politics developed from the time of the ancient Greeks to the present.

### **GOVT S251 Introduction to International Relations**

**3 credits (3+0) J GER**

Major theories of international politics including studies of war, peace and diplomacy and the role of international and regional organizations.

### **GOVT S291/S491 Government Internship**

**3–9 credits (variable) J**

Part-time work in an approved governmental or private non-profit agency. The student is to be supervised by a senior employee of that agency in cooperation with the faculty advisor. (Maximum of 12 hours allowed for all internship programs.) Prerequisite: GOVT S101, GOVT S102 or governmental experience and permission.

### **GOVT S313 Alaska Politics and Government**

**3 credits (3+0) J**

A consideration of the development and the present organization and operation of the Alaska political and governmental system. Special attention will be given to: the constitution, parties and interest groups, the legislature, the governor, local government and current policy issues in the state.

### **GOVT S337 The American Presidency**

**3 credits (3+0) J**

The role, power and development of the presidency. Emphasizes the president's role in the formulation and implementation of domestic and foreign policy, plus the presidential election system. Prerequisites: GOVT S101 and GOVT S102.

### **GOVT S359 European Politics**

**3 credits (3+0) J**

An examination of the development and contemporary characteristics of European politics, the role of the European union, and the incorporation of former communist countries of Eastern Europe into the democratic politics of Europe. Prerequisites: GOVT S101 or GOVT S102 or instructor permission.

### **GOVT S408 The Legislative Process**

**3 credits (3+0) J**

Legislative procedures and politics at the federal and state level including Alaska. Comparisons with legislative systems in other countries, guest speakers and consideration of legislative reform. Prerequisite: GOVT S101, GOVT S102 or GOVT S211.

### **GOVT S421 Interest Groups in American Politics**

**3 credits (3+0) J**

Analysis of the place and function of groups and lobbyists within the American political system including a consideration of the factors which determine group power. Includes case studies of various groups and a practical section on organizing an interest group campaign. Prerequisite: GOVT S101, GOVT S102.

### **GOVT S492A Legislative Internship Seminar**

**3 credits (3+0) J**

This academic portion of the Legislative Internship Program provides a pre-orientation to the practical workings of the legislature and state government. The seminar focuses on assessing the relevance of academic literature to understanding legislative and governmental processes. Requires selection for the Legislative Internship Program.

## Health Information Management (HIM)

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### HIM S124 Introduction to Health Information Practice

**5 credits (4+2) J, S, K**

An overview of health care systems and the health information management profession. Introduction to data collection standards and data quality methods, forms design, patient record automation and control procedures, and health care statistics. Introduction to uses of record content in reimbursement, risk management, and planning. Professional Practice: Students will be assigned to an acute setting for up to 24 clock hours. Prerequisite: Admission to the HIM program. Co-requisite: HIM S135 or instructor permission. Concurrent enrollment in HIM S180 required.

### HIM S135 Medical Terminology

**3 credits (3+0) S**

An introduction to root forms, prefixes and suffixes, and medical abbreviations. Focus is on terminology of body systems related to symptomatology, diseases, and treatment. Prerequisite: Placement at ENGL S110 or higher. Cross-listed as HS S135.

### HIM S160 Alternative Delivery Systems

**3 credits (3+0) S**

Discussion of applications in alternative health care systems. Guest speakers will introduce students to emerging roles of health information professionals, and to challenges facing alternative care delivery systems. Students will complete a clinical site visit at an alternative care facility. Prerequisite: Admission to HIM degree program.

### HIM S180 Computer Applications and Emerging Technologies

**2 credits (2+0) S**

Introduction to computer network programs such as web browsers, e-mail, computer conferencing, and online databases. Introduction to professional web resources. Overview of automated health information management functions and emerging technologies. Examination of the movement toward an electronic health record. Impact of privacy and security concerns. Co-requisite: HIM S124.

### HIM S190 CPT Coding

**3 credits (3+0) S**

Focus on HCPCS/CPT ambulatory care coding. Overview of fraud and abuse regulations as they pertain to coding and billing. Professional practice experience: observe coding and billing at an ambulatory care setting (minimum 6 hours.) Prerequisite: BIOL S111 and admission to HIM program or departmental permission. Co-requisite: HIM S135 and BIOL S112.

### HIM S210 ICD-9-CM Coding

**3 credits (3+0) S**

Introduction to International Classification of Diseases (U.S.). Introduction to coding diagnoses and procedures, sequencing, coding conventions, and software. Review of complications and co-morbidities. Professional practice: Students complete activities that provide an overview of Diagnostic Related Groups (DRGs). interface between business office and health information management to optimize reimbursement, coding quality studies, and working with physicians for DRG management. Practice in analyzing actual medical records to identify data elements to be coded. Prerequisite: BIOL S111 and admission to HIM program or departmental permission. Corequisite: BIOL S112 and HIM S135.

### HIM S215 Billing and Reimbursement

**2 credits (2+0) S**

Focus is on issues of billing and reimbursement for health care facilities. Includes an overview of the role of the health insurance specialist; third party payers such as Medicare, workers compensation and disability, Tricare and commercial insurance claims. Legal and regulatory considerations and ambulatory ICD-9 are covered. Students will complete a project focused on coding and reimbursement issues. Prerequisite: HIM S190 and admission to HIM program or departmental permission.

### HIM S240 Legal Aspects of Health Information

**3 credits (2+2) S**

Review of legal implications of health records and related legal issues including the patient record as a legal document. Examination of emerging laws and legal trends impacting the management of health care information. Introduction to risk management and the role of the HIM professional as compliance and privacy officer. Students attend a court hearing and complete a project on the impact of recent regulatory laws on healthcare settings. Prerequisites: HIM S124 and admission to HIM degree program.

### **HIM S250 Quality Management**

**2 credits (2+0) S**

Introduction to total quality management including history, philosophy, definitions, and tools. Introduction to the use of quality improvement performance and focused studies. Overview of the historical development of case management. Prerequisite: HIM S124 and admission to HIM program.

### **HIM S260 Data Quality and Reimbursement**

**2 credits (2+0) S**

A continuation of HIM S210 with in-depth focus on coding issues, including coding validation, data accuracy, coding guidelines and training; and reimbursement issues including Diagnostic Related Groups (DRGs), Ambulatory Patient Classifications (APCs) and Resource Based Relative Value scales (RBRVs). Impact of coding and DRG accuracy on financial stability of facility. Overview of specialist credentials: CCS and CCS-P. Prerequisite: HIM S210 and admission to HIM program or departmental permission.

### **HIM S270 Pathology**

**3 credits (3+0) S**

Introduces a basic concepts underlying various pathological processes. Students draw on their knowledge of normal anatomy and physiology to understand how pathogenesis of disease occurs. Discussion of diseases, diagnostic process, appropriate testing, and various treatment options. Class will require both independent work and class attendance. Lectures, discussions, assigned readings, online references, independent research, and student projects will be utilized. May not meet requirements for nursing programs. Prerequisite: BIOL S111 and S112. Corequisite: HIM/HS S135 or permission. Crosslisted as HS S270.

### **HIM S271 Pharmacology**

**1 credit (1+0) S**

Introduction to drug terminology, administration, toxicity, vocabulary, standards and references. Prerequisite: HIM 135. This course does not meet the requirements of nursing programs.

### **HIM S280 Health Care Management**

**3 credits (3+0) S**

Concepts of management including management functions are discussed and a case study approach is employed to review responses to a variety of management problems. Prerequisite: Completion of all lower level HIM courses or concurrent. Corequisite: HIM S291.

### **HIM S285 Healthcare Privacy**

**3 credits (2+2) S**

An in-depth review of federal and state regulations and laws, with emphasis on the Health Insurance Portability and Accountability Act (HIPPA). Students will complete an on-site project under the supervision of the facility's Compliance Officer or designee. Prerequisite: HIM S240 or permission.

### **HIM S291 Internship in Healthcare Management**

**2 credits (.5+0+6) J, K, S**

Eighty clock hours of professional internship in an assigned health care setting. Application of operational management theory for a health information service. Orientation to all aspects of practice as a health information manager. Completion of management projects designed jointly by student and clinical supervisor. Student writes project report and site evaluation. Corequisite: HIM S280

## **Health Science (HS)**

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### **HS S101 Introduction to Health Sciences**

**3 credits (3+0) J, K, S**

Provides a description of health care professions and the interdisciplinary team, job responsibilities, educational and licensing requirements, employment trends, and salary ranges for health related careers. Students will have an exposure to the history and development of health care in Alaska and the United States. Health care issues will be examined with an emphasis on ethics and cultural diversity. The principles of critical thinking will be introduced and communication skills will be promoted through collaborative discussion, presentation, and projects.

### **HS S102 Fundamentals of CPR and First Aid**

**1 credit (1+0) J, K, S**

Basic CPR techniques and First Aid for controlling bleeding, shock, seizures, obstructed airway/choking, hot and cold-related emergencies, and diabetic crisis. Signs and symptoms of stroke and heart attack are reviewed, as is use of A.E.D. Safety and prevention practices are discussed. The course meets certification requirements for child care providers, outdoor guides, lifeguards, home health aides, group homes, and certified nurse aids. Course materials are derived from American Safety and Health Institute and American Heart Association guidelines.

### **HS S103 Personal Care Assistant Training**

**4 credits (2+4) J, K, S**

Designed to train entry level health care workers in basic skills necessary to provide care in homes and facilities and to be efficient health care team members. Students receive a state issued certification of completion for PCA training. Minimum of 75 hours of classroom, lab, and/or practicum included. Prerequisite: Instructor approval and completed application.

### **HS S104 PCA to CNA Bridge**

**4 credits (3.5+2.5) J, K, S**

Trains Personal Care Assistants to become Certified Nurses Aides. Students build upon basic PCA skills and experience. Provides the additional classroom, laboratory and clinical hours necessary to sit for the Certified Nurses Aide certification exam. Minimum of 75 hours of classroom, lab and clinical experience. Prerequisite: HS S103 or agency training with 2 years experience, instructor permission, and completed application.

### **HS S105 Certified Nurse Aide Training**

**9 credits (6+6) J, K, S**

Trains entry level workers in basic skills needed to assist nurses and to be effective health care team members. Students qualify to sit for the Alaska State Certification Exam for Nursing Assistants. Minimum of 75 lecture hours and 80 lab/clinical hours. Requires criminal background check, current TB test and immunizations. Prerequisite: Instructor approval and completed application.

### **HS S107 Planning Your Career in Healthcare**

**1 credit (1+0) J,K,S**

Assists students in setting career goals and developing the skills needed to succeed in chosen career path. Students create program-specific plans and healthcare career portfolios. Students learn about healthcare trends, educational needs, and the academic and career skills required. Job search strategies, resume preparation, interviewing, and personal leadership development are examined. Requires Internet access and e-mail.

### **HS S111 Mariners First Aid**

**1 credit (1+0) J, K, S**

Training to provide basic assessment of and care for persons with medical emergency in marine settings. Particular focus is on rescue, burns, resuscitation, hypothermia, and trauma as well as on hazards and precautions common to fishing industry. Discusses conventional marine emergency response systems, including Coast Guard medevac. Techniques are presented for lifting and moving the sick and injured. Corequisite: HS S102 or current CPR certification, and permission.

### **HS S118 Emergency Trauma Technician –First Responder**

**3 credits (2+2) J, K, S**

Designed specifically for Alaskan conditions and needs, addressing environmental problems such as hypothermia as well as first aid. Prepares students to deal with emergencies: ensure scene safety, provide patient care and transport, document incident. For non-medical workers in construction, logging, mining, law enforcement, ski patrol and other occupations where emergency care may be needed.

### **HS S119 Emergency Medical Technician I**

**6 credits (6+2) J, K, S**

Training to provide assessment of and basic care for persons with medical emergency in pre-hospital settings. Conditions include acute trauma, pulmonary arrest, wounds, cardiac arrest, shock, fractures, and childbirth. Techniques are presented for lifting and moving the sick and injured. Course provides for State of Alaska EMS requirement of 120 contact hours (min.) Corequisite: HS S102 or current CPR certification, and instructor permission.

### **HS S121 EMT Refresher**

**1 credit (1+0) J, K, S**

Update and review of training for Emergency Medical Technician certificate holders. Covers new procedures and methods for assessment of and basic care for persons with medical emergency in pre-hospital settings. Prerequisite: Student must be currently certified as EMT I or higher.

### **HS S125 Public Health and Health Promotion**

**4 credits (4+0) S**

This is the first course in the Community Wellness Advocate Certificate program. Instruction in the basics of public health and health promotion. Prerequisite: GED or high school diploma.

### **HS S126 Health Promotion through Behavior Change**

**4 credits (3+2) S**

This is the second course in the Community Wellness Advocate Certificate Program. Covers stages of behavior change, basic community and counseling skills. Prerequisite: HS S125 (C or higher)

### **HS S127 Basic Nutrition and the Life Cycle**

**3 credits (3+0) S**

Introduces basic applied nutrition and nutritional needs across the life cycle. Explores key nutrients and their food sources and functions in the body. Analysis of student's eating patterns, and a brief look at common nutritional problems in the US population and dietary roles in the prevention of disease. Prerequisite: GED or high school diploma.

### **HS S128 Food Safety and Food Preservation**

**1 credit (1+0) S**

Introduces food safety and food preservation practices with emphasis on indigenous foods of Alaska. Historical practices in Alaska, and health issues related to home food preservation. Offers students the opportunity for practical, hands-on experiences in evaluating resources and products in their local community. Prerequisite: GED or high school diploma.

### **HS S130 Public Health and Injury Prevention**

**3 credits (3+0) S**

An examination of public health issues in general with particular emphasis on impact by unintentional injuries and violence within the overall perspective. Designed to provide a base of knowledge to understand and critically analyze the nature and extent of unintentional injuries and possible interventions.

### **HS S131 The Role of Data In Injury Prevention**

**3 credits (3+0) S**

A review of public health approach and injury prevention methods. Introduces epidemiology to help the student design data-based injury prevention programs and to critically analyze data sources. Surveillance data gathering will be explored as a precondition to effective injury prevention. The classic tools of epidemiology will be presented so the student can apply them to community based interventions. Prerequisite: HS S130 or instructor permission.

### **HS S132 Managing Injury Prevention Programs**

**4 credits (4+0) S**

A short review of the public health approach to injuries, focused on program implementation and management. Emphasizes the tools to find funding, write a successful proposal and to present to a board, council, or grantor in a professional manner. Assists the student with media campaigns and how to change existing curricula or programs to suit the community's needs. Prerequisite: HS S131 or instructor's permission.

### **HS S135 Medical Terminology**

**3 credits (3+0) J,K,S**

An introduction to root forms, prefixes and suffixes, and medical abbreviations. Focus is on terminology of body systems related to symptomatology, diseases and treatment. Cross-listed as HIM S135. Prerequisite: Placement at ENGL S110 or higher.

### **HS S140 Basic Helping Skills in Human Services**

**3 credits (3+0) J, K, S**

Introduction to the practical skills useful in helping others effectively deal with distressing life problems. Topic areas include developing effective working relationships, using active listening skills and other forms of therapeutic communication, clarifying key issues and developing goals, and selecting and implementing action strategies. Ethical issues, legality and cultural competence are discussed throughout. Intended for persons entering, or practicing in, varied human service or healthcare professions including behavioral health aides, youth counselors, nurses, and others.

### **HS S141 Introduction to Radiologic Technology and Patient Care**

**3 credits (3+0) J, K, S**

An overview of radiography and the practitioner's role in the health care delivery system. Examines principles, practices and policies of health care organizations, basic concepts of patient care, occupational safety, patient consent, and medical ethics and law as they relate to the profession.

### **HS S150 Radiation Protection for Non-Imaging Professionals**

**3 credits (3+0) J, K, S**

Introduces theory and application of diagnostic radiography for non-imaging professionals. Includes medical and legal responsibilities of radiography, principles of radiation protection, equipment operation and maintenance, image production and evaluation, and patient care and management.

### **HS S151 Medical Imaging Physics**

**2 credits (2+0) J,K,S**

Provides fundamental knowledge of atomic structure and terminology, the nature and characteristics of radiation, x-ray production and the fundamentals of photon interactions with matter. Includes introduction to accessory devices that influence image quality and patient exposure.

### **HS S201 Public Health: Issues and Practice**

**3 credits (3+0) J, K, S**

An introduction to public health issues, practice and history, with discussion of public health professions and organizations, and emerging threats to public health. The course will focus on current concepts of the six core functions and ten essential services of public health that support the vision of healthy people in healthy communities. Case studies of what works in Alaska communities will give insight into ways that individuals, communities, the private sector, and government can help promote and protect the health of the population. Prerequisite: ENGL S110 or instructor permission.

### **HS S202 Community Health Promotion**

**4 credits (4+0) S**

This is the third course in the Community Wellness Advocate Certificate program. Covers health promotion at the community level. Prerequisite: HS S125 and HS S126 (C or higher).

### **HS S203 Science of Nutrition**

**3 credits (3+0) J, K, S**

Introduction to nutrition as a health science. Students examine the basic principles of nutrition as they relate to human needs and behaviors throughout the life cycle. Some elements of clinical nutrition are explored. Meets the nutrition requirement for nursing and other health science majors. Prerequisite: BIOL S103 and CHEM S103 or instructor permission.

### **HS S204 Introduction to Nutrition Education**

**3 credits (3+0) S**

Students learn to create and deliver innovative, community focused nutrition education. In this course, students will learn the basics of nutrition education across the life cycle and how to create simple nutrition education materials and deliver existing nutrition curriculum. Prerequisite: HS S127 and HS S202, both C or higher.

### **HS S206 Introduction to Environmental Health**

**3 credits (3+0) J, K, S**

An overview of the relationship of people to their environment, how it affects their physical well-being and what they can do to influence environmental quality and to enhance public health protection. Examines health problems associated with chemical, physical and biological agents, how they impact food safety, infectious disease, air quality, water quality and land resources in community and occupational settings. Policies intended to improve public health through mitigation of environmental impacts are also discussed. Prerequisite: ENGL S110 or instructor permission. Cross-listed as ENVT S206.

### **HS S270 Pathology**

**3 credits (3+0) J**

Introduces basic concepts underlying various pathological processes. Students draw on their knowledge of normal anatomy and physiology to understand how pathogenesis of disease occurs. Discussion of diagnostic process, appropriate testing, and various treatment options. Lectures, discussions, readings, references, and case studies will be used. May not meet the requirements for nursing programs. Prerequisite: BIOL S111 and S112; Corequisite: HIM/HS 135 or permission. Cross-listed as HIM S270.

### **HS S274 Introduction to Behavioral Healthcare**

**3 credits (3+0) J**

Explores the interaction between behavior and health. Introduces the student to theory and research concerning health and lifestyle, stress and illness, self-injurious behaviors, behavioral factors in chronic illness and cancer, the experience of pain, and factors affecting medical compliance. Practical ways to incorporate behavioral health principles and interventions into the delivery of health care services will be an important focus of this course. Prerequisite: ENGL S110 or instructor permission.

### **HS S291 Health Sciences Internship**

**3-6 credits (0+0+12-24) J, K, S**

Students are employed (paid or unpaid) in either a facility or community-based healthcare setting. Students work in an approved agency, under supervision of both a qualified professional at work and a faculty sponsor. Requires 50 clock hours per credit. Prerequisite: Admission to HS program and faculty permission via approval form.

### **HS S294 Nutrition Education Practicum**

**3 credits (1+0+8) S**

Students create and deliver innovative community-focused nutrition education under the supervision of a qualified nutrition professional. Requires application of nutrition concepts and nutrition education skills they have garnered. Prerequisite: HS S127 and HS S204 (C or higher).

## **History (HIST)**

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### **HIST S105 World History I**

**3 credits (3+0) J, K, S GER**

Survey of the political, social, economic, and cultural history of the Near East, Asia, Europe, Mesoamerica, and Africa, from antiquity to the 16th century.

### **HIST S106 World History II**

**3 credits (3+0) J, K, S GER**

Survey of the political, social, economic, and cultural developments which have created the modern global system since the 16th century.

### **HIST S115 Alaska, Land and People**

**3 credits (3+0) K**

A survey of Alaska from its earliest days to the present; its people, problems, and prospects. HIST S115 is not transferable as an upper division course.

### **HIST S131 History of the U.S. I**

**3 credits (3+0) J, K, S GER**

The discovery of America to 1865; colonial period, Revolution, formation of the Constitution, western expansion, Civil War.

### **HIST S132 History of the U.S. II**

**3 credits (3+0) J, K, S GER**

Continuation of HIST S131 from Reconstruction to the present.

### **HIST S133 Themes and Patterns of American History**

**3 credits (3+0) J**

A one-semester survey of major themes and patterns in the history of colonial N. America and the U.S.; particularly expansion, also contact and conflict in culturally diverse settings. Intended for students majoring in Elementary Education. Does not satisfy any GER requirement.

### **HIST S202 U.S. Women's History**

**3 credits (3+0) J**

A chronological and thematic look at the multiple histories of women in colonial and United States history. Particular emphasis will be placed on the changing social, cultural, and political environments within which diverse groups of women have acted. Prerequisite: HIST S131, S132 or equivalent, and ENGL S110.

### **HIST S227 Early Modern Europe 1400-1815**

**3 credits (3+0) J**

A survey of early modern Europe from the fifteenth through the eighteenth centuries. Major topics include the Renaissance, Reformation, Atlantic trade, Absolutism, Scientific Revolution, Enlightenment, and French Revolution. Prerequisite: ENGL S110 and either HIST S105 and S106 or HIST S131 and S132; or instructor permission.

### **HIST S228 Modern Europe 1815-2000**

**3 credits (3+0) J**

A survey of modern Europe in the nineteenth and twentieth centuries. Major topics include the dual revolutions in politics and economy, nationalism and imperialism, World Wars I and II, communism and fascism, and social and political challenges facing the European Union. Prerequisite: ENGL S110 and either HIST S105 and S106 or HIST S131 and S132; or instructor permission.

### **HIST S261 History of Russia**

**3 credits (3+0) J**

Survey of the origin and rise of the Russian State, the Revolution of 1917 and the development and decline of the U.S.S.R.

### **HIST S262 History of France**

**3 credits (2+3) J**

Survey of the geographic, social, and cultural diversity of France from Roman and medieval times to the modern era. Taught in conjunction with a study tour of France. Experiential field learning combined with formal academics. Corequisite: FREN S331

### **HIST S280 History of Women in Europe**

**3 credits (3+0) J**

A survey of women's history in Europe from the medieval to modern periods. Focuses upon the historical experiences of women at all levels of society, examines social and political forces that have subordinated and empowered women, and explores how a gendered approach to inquiry transforms historical understanding. Prerequisite: HIST S105 and S106 or S131 and S132, and ENGL S110, or instructor approval.

### **HIST S300 Historiography and Historical Methods**

**3 credits (3+0) J**

Readings and discussions on the nature of history, historical study and writing, recent tendencies in historical scholarship, and methods of historical research. Prerequisite: ENGL S111 and 12 credits in history.

### **HIST S330 Modern Far East**

**3 credits (3+0) J, K, S**

Change and development in the modern Far East since 1500 with emphasis on China, Japan and Korea. Prerequisite: HIST S105, HIST S106.

### **HIST S341 History of Alaska**

**3 credits (3+0) J, K, S**

The Russian background; acquisition, settlement and development of Alaska as an American territory and the 49th State. Prerequisite: 6 hours of HIST or permission.

### **HIST S356 Survey of Canada**

**3 credits (3+0) J, K**

This course is a survey of political, social and economic development beginning with New France through the Confederation to the present. Prerequisite: HIST S131 & S132 or HIST S105 & S106.

### **HIST S362 United States History 1865-1919**

**3 credits (3+0) J, K, S**

Investigates the creation of modern America from the end of the Civil War through World War I. Specific focus on the collapse of the slave economy, the restoration of white supremacy, the acceleration of industrialism and big business, the conquest of native land and culture, U.S. imperialism in Latin America and the Pacific, new immigration from Europe and Asia, and the emergence of popular reform movements among workers, farmers, women, and African Americans. Prerequisite: ENGL 111, six credits of history, and upper division standing; or instructor permission.

### **HIST S363 United States History 1919-1950**

**3 credits (3+0) J, K, S**

Explores the period between the end of the first World War and the onset of the Korean War. Specific focus on the development of mass media and popular culture, the economic dimensions of the Roaring 20's, the onset and consequences of the Great Depression, the rise of labor and the New Deal coalition, World War II, and the early years of the Cold War. Prerequisite: ENGL 111, six credits of history, and upper division standing; or instructor permission.

### **HIST S364 United States History Since 1950**

**3 credits (3+0) J, K, S**

Considers the recent history of the United States from the Cold War to the present. Emphasizes the culture and politics of the Cold War, the civil Rights struggle, the Vietnam War, the Women's movement, the New left and New Right, shifting patterns of immigration, globalization of the US economy and culture, and the war on terrorism. Prerequisite: ENGL 111, six credits of history, and upper division standing; or instructor permission.

### **HIST S365 History of Rock 'n' Roll**

**3 credits (3+0) K**

This class is a social history of rock 'n' roll. It places the evolution of rock music in the context of American history from 1950-1990. It explains how rock 'n' roll both reflected and influenced major social changes during those 40 years. Prerequisite: ENGL 111 and six credits of history or instructor permission.

### **HIST S370 Modern European Intellectual History**

**3 credits (3+0) J**

This course explores major intellectual developments from Europe that have been influential in shaping modern mentality, from liberalism, socialism, feminism, realism, and existentialism, to critical theory, structuralism, post-structuralism, and postmodernism. Prerequisite: 6 credits of history or instructor permission.

### **HIST S380 History of Gender and Sexuality in Modern Europe**

**3 credits (3+0) J**

A reading seminar on the historical construction of gender and sexuality in the West, and the use of gender as a critical category for reinterpreting major historical events. Prerequisite: ENGL S111, six credits of history, and upper-division standing; or instructor permission.

### **HIST S420 The Holocaust**

**3 credits (3+0) J**

This course examines the Nazi genocide of the European Jews by exploring questions such as: How was the Holocaust possible? Who were the perpetrators? Who were the victims? Who collaborated with and who resisted Nazi policies of racism and elimination? What are the legacies of genocide today? Prerequisite: 6 credits of history or instructor permission.

### **HIST S440 The Western Movement**

**3 credits (3+0) J, K**

Westward migration; establishment of new states and political institutions; influences of the West. Prerequisite: HIST S131, HIST S132.

**HIST S450 Twentieth Century America**  
**3 credits (3+0) J, K**

The United States from the progressive movement to the present day, with emphasis on domestic developments. Prerequisite HIST S131, HIST S132.

**HIST S474 Field Reading**  
**3 credits (0+6) J**

Directed reading of selected literature pertaining to a particular field of history and compiling of an annotated bibliography. The proposal shall consist of the reading topic, a hypothesis and initial tentative reading list. Prerequisite: 6 credits of history and permission. Pass/ Fail grading.

**HIST S492 Seminar in History:  
Selected Topics**  
**3 credits (3+0) J**

In-depth exploration of a major topic in history through a course of readings and discussions. Students will refine skills in critical thinking, analysis of sources, and working with a variety of historical interpretations. May be repeated for credit provided the content differs. Prerequisite: ENGL S111, 6 credits of history, and upper-division standing; or instructor permission.

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**Humanities (HUM)**

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**HUM S105 Critical Reading in the  
Humanities**  
**3 credits (3+0) J, K, S**

This course provides a range of readings in the humanities and strategies for interpreting, analyzing, and synthesizing written texts. Students can expect to read extensively; respond to the readings via oral, written, and other creative methods; and complete a reading research project. This course may be self-selected or required, based upon English placement scores.

**HUM S120 Freshman Seminar:  
A Sense of Place**  
**3 credits (3+0) J GER**

Designed for first-year students, this course, through a variety of readings, activities and discussions, examines the various ways we relate to places in which we find ourselves. We will focus on both the university and the Alaskan wilderness as place through a study of issues in the humanities and social science. Students explore issues critical to their academic goals and objectives. The purpose of the course is to assist students in finding their place in the university setting. Corequisites: English S110 or placement test results at the S110 level or instructor permission.

**HUM S499 Humanities Capstone**  
**3 (3+0) J**

Helps students synthesize learning and skills acquired in their undergraduate program and prepare them for postgraduate life. Opportunities to reflect on choices and consequences, to articulate ideas and experiences is facilitated by texts and discussion. Students prepare a portfolio and will present their work as part of the UAS Humanities Conference. Pass/Fail grading. Prerequisite: Senior standing in English, communication or art. Advisor and instructor permission required.

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**Japanese (JPN)**

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**JPN S101 Elementary Japanese I**  
**4 credits (4+0) K, GER**

Introduction to spoken, written and conversational Japanese, Hiragana, Katakana, and approximately 15 Kanji will be learned. Emphasis on communicative competence. Cultural aspects will be introduced through language study and supplementary materials.

**JPN S102 Elementary Japanese II**  
**4 credits (4+0) K, GER**

Continuation of Japanese 101. Emphasis on differing levels of formality and development of aural/oral skills. Approximately 150 Kanji will be introduced. Prerequisite: JPN S101.

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**Journalism (JOUR)**

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**JOUR S100 Introduction to Journalism**  
**3 credits (3+0) J**

Develops skills in news and feature writing, reporting, and interviewing. Students will also learn about various aspects of journalism including ethics, newspapers, radio, TV, public information, and public relations. Co-requisite: ENGL S111.

**JOUR S101 Introduction to Mass  
Communications**  
**3 credits (3+0) J, GER**

A survey of the mass communications media and their functions in modern society. Topics include newspapers, magazines, books, movies, radio, television, the advertising and public relations industries, and the convergence of mass media in digital environment.

### **JOUR S102 Introduction to News Editing and Layout**

**3 credits (2+3) J**

A class for beginning writers who wish to improve their newspaper writing skills, but with a marked emphasis on learning strong editing skills. The class will focus on grammar, newspaper style and improvement in writing. It will review writing stories and feature headlines, picture captions and learning newspaper layout and photo editing. The course will also include discussions on newspaper libel law and other legal issues. Prerequisite: JOUR S101 or permission.

### **JOUR S221 Introductory Photography**

**3 credits (2+3) J**

(cross-listed ART S221)

Basic principles of photography; how the camera functions and the utilization of these features for artistic expression; processing and printing of black and white film; lab and classroom demonstration; relationship of photography to other art media. Three hours of lab per week required.

### **JOUR S224 Intermediate Photography**

**3 credits (2+3) J**

(cross-listed ART S224)

Development and refinement of camera skills and techniques as a medium of expression. Assignments given to create concepts, discipline, and an awareness that the camera is only a tool of creative expression. Lighting for form, texture, and separation through the use of existing and/or studio lighting. Introduction to special darkroom techniques as a tool for further investigation. Prerequisite: JOUR/ART S221. Three hours of lab per week required.

### **JOUR S294 Beginning Newspaper Practicum**

**1–3 credits (0+0+9) J, K**

This course will provide instruction and practical application of the basic skills needed to produce a newspaper every other week during the semester. Job skills include writing, reporting, editing, page layout, advertising sales and markup, headline writing, photo cropping and sizing and interviewing techniques. 50 hours of work required per credit. Prerequisite: ENGL S110 (C or higher) or instructor permission.

### **JOUR S394 Intermediate Newspaper Practicum**

**1–3 credits (0+0+9) J, K**

Provides practical application of the basic skills needed to produce a biweekly newspaper. Includes writing, reporting, editing, page layout, advertising sales and markup, headline writing, photo cropping and sizing, as well as interviewing techniques. 50 hours of work required per credit. Students may emphasize specific areas: writing (a number of stories will be required per issue); advertising sales and production; or layout and production. Understanding of AP style and basic journalistic writing techniques required. May be repeated for up to 6 credits. Prerequisite: ENGL S111 (C or higher) or instructor permission.

### **JOUR S494 Advanced Newspaper Practicum**

**1–3 credits (0+0+9) J**

This course provides development of more sophisticated newspaper skills including copy editing, page layout, news judgment and positioning, and assigning stories to staff. 50 hours of work required per credit. May be repeated for up to 6 credits. Prerequisite: ENGL S211 (C or higher), JOUR S294, JOUR S394, or instructor permission.

## **Justice (JUST)**

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### **JUST S111 Physical Training**

**1 credit (0+2) S**

Course covers physical conditioning, physical methods of arrest, baton, and cold water survival.

### **JUST S112 Procedural Law**

**2 credits (2+0) S**

A statutory law course covering individual rights, constitutional safeguards and roles of evidence. Constitutional issues such as search and seizure, 5th Amendment and 14th Amendment are studied.

### **JUST S113 Criminal Justice**

**1 credit (1+0) S**

Specific instruction in the organization, jurisdiction, and role of the Alaska Criminal Justice System, the District Attorney's office and the Public Defender's office. The special role of juveniles is included.

### **JUST S114 Traffic Law Enforcement**

**1 credit (1+0) S**

Course covers preparation of D.U.I. enforcement, drinking drivers and driving, the D.U.I. statute, issues and defenses, pharmacology and toxicology, theory and operation of the intoximeter, courtroom testimony, and case preparation. Accident investigation techniques and field exercises are included.

### **JUST S115 Police Procedures**

**5 credits (3+4) S**

Course covers a variety of disciplines including interviews and interrogation techniques, rules of evidence, substantive law, shooting, security checks, domestic disputes, and related topics. Report writing is included.

### **JUST S116 Criminal Investigation**

**2 credits (1+2) S**

Course covers physical evidence and crime scene investigation, drug identification and case procedures, arson, sex crimes, fingerprinting, and investigation practices.

## **Law Science (LAWS)**

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### **LAWS S101 Introduction to Law**

**3 credits (3+0) J**

Designed as a survey course to familiarize students with substantive legal concepts, legal procedures, legal systems, legal resources and legal reasoning.

### **LAWS S112 Civil Procedure**

**3 credits (3+0) J**

Jurisdiction of courts: problems of choice between federal and state law, venue, personal and in rem jurisdiction; various types of pleadings in civil actions including the complaint, answer, and reply; joinder of parties and claims; class actions; discovery; motion practice; trial and appeal. Prerequisite: LAWS S101.

### **LAWS S210 Evidence**

**3 credits (3+0) J**

This course is designed to acquaint the student with the law of evidence. Specific rules of evidence drawn from both the Federal and Alaska Rules of Evidence dealing with such matters as hearsay and privileges will be explored. Procedures will be studied for getting evidence into the records and keeping it out. The course includes a visit to a local courtroom to observe a trial in progress and a panel discussion by private investigators from the area.

### **LAWS S215 Paralegal Profession in Practice**

**3 credits (3+0) J**

Acquaint students with the tasks performed by paralegals in private law firms and government offices. Provide an understanding of procedures and skills required. Explore the role of paralegals in the legal arena, including ethics and regulations of the profession. Writing and interviewing skills will be learned and practiced.

### **LAWS S223 Real Estate Law**

**3 credits (3+0) J** (cross-listed BA S223)

Survey of the various kinds of deeds and conveyances, mortgages, liens, rentals, appraisals and other transactions in the field of real estate and law.

### **LAWS S235 Criminal Litigation**

**3 credits (3+0) J**

Analysis and practical application of the theoretical, historical, and substantive aspects of criminal law and procedure with a practical examination of the rules of evidence, mechanics and tactics applicable to the various stages of a criminal trial. An examination of all aspects of the trial process from the perspective of both the prosecution and the defense.

### **LAWS S240 Methods and Techniques of Legal Research**

**3 credits (3+0) J**

Practical study of the methodology and techniques of conducting legal research. Survey of the concepts, theories and sources used in connection with legal problems and their resolution. Practical application of these tools through discussion, research and the drafting of legal documents. Prerequisite: LAWS S101 or BA/LAWS S330.

### **LAWS S242 Legal Writing**

**3 credits (3+0) J, S**

Drafting of legal documents with an emphasis on citations, clarity, and concision. Prerequisites: LAWS 101 and ENGL 110.

### **LAWS S294/S394 Practicum: Field Practice**

**3 credits (1+0+8) J**

Practical experience within a specific law agency or firm, under the guidance of a field supervisor. Collecting and interpreting client information. Learning administration procedures within the agencies. Practice in investigative techniques. Prerequisite: permission.

### **LAWS S310 Personal Injuries and Property Damage**

**3 credits (3+0) J**

Fundamental principles of the civil law of torts with emphasis on personal injuries and property damage. Survey of the practical steps taken in forming a civil action in the court system to recover compensation for losses suffered. Research and creation of basic civil law suits in experimental or moot settings. Prerequisite: LAWS S101 or BA/LAWS S330.

### **LAWS S330 Legal Environment of Business**

**3 credits (3+0) J, K, S**

(cross-listed with BA S330)

This course examines business in its relation to the legal and judicial systems and to government regulation. It explores legal concepts and issues pertaining to competition, sales, employees, liabilities and forms of doing business.

### **LAWS S332 Contracts**

**3 credits (3+0) J**

Law related to the formation of a contract including the offer, acceptance and consideration; defenses to the formation and enforcement of contracts, performance of contracts, excuse, discharge and damages. Prerequisite: LAWS S101 or BA/LAWS S330.

### **LAWS S334 Advanced Business Law**

**3 credits (3+0) J**

(cross-listed with BA S334)

This course is designed to supplement BA/LAWS 330, Legal Environment of Business. It may be of special interest to students anticipating the CPA Exam, but it is appropriate for any student wishing to supplement their knowledge of business law through an upper division elective. Prerequisite: LAWS S101 or BA/LAWS S330.

### **LAWS S360 Business Organizations**

**3 credits (3+0) J**

(cross-listed BA 360)

This course will cover the theoretical and substantive aspects of the formation, operation, and dissolution of various types of business organizations. The subjects will include the law of sole proprietorships, partnerships, limited liability companies, and corporations. Aspects of agency and employment law will also be examined.

### **LAWS S380 Family Law**

**3 credits (3+0) J**

Practical application of the laws relating to the rights and responsibilities which arise out of and in connection with the husband/wife relationship, including the dynamics of family law practice, ethics, contracts, antenuptial agreements, ceremonial and common law marriages, annulment, separation agreements, divorce and divorce procedure, alimony, property division, tax consequences and separate maintenance. Prerequisite: LAWS S101 or BA/LAWS S330.

### **LAWS S410 Administrative Law and Procedures**

**3 credits (3+0) J**

Legal principles involved in the creation and administration of administrative agencies. Focus on the three essential functions of administrative agencies: investigative, rulemaking and adjudication. The Federal Administrative Procedure Act and the Alaska Administrative Procedure Act are examined.

### **LAWS S434 Constitutional Law**

**3 credits (3+0) J**

The growth and development of the United States Constitution as reflected in the decisions of the Supreme Court. Emphasis on the federal system, executive, legislative and judicial powers, regulation of commerce and taxation. Prerequisite: LAWS S101 or BA/LAWS S330 or GOVT S101 and GOVT S102.

### **LAWS S498 Selected Research Problems in Law and Public Administration**

**3 credits (1+4) J**

Investigation, research and drafting of advanced policy, legal and statistical analyses. Utilization of diverse sources of information and approaches for the creation of topics, specific memoranda, reports and briefs. Prerequisite: LAWS S240.

## **Library Science (LS)**

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### **LS S110 Library Resources and Information Literacy**

**1 credit (1+0) J, K**

Introduction to rapidly evolving online research methods and the principles of information retrieval and organization. Emphasis is on skills necessary for successful evaluation and use of virtual and physical library collections. Skills acquired are immediately relevant for other courses.

## **LS S111 Library Information Literacy for Distance Students**

**1 credit (1+0) J**

Introduction to rapidly evolving online research methods and the principles of information retrieval and organization. Designed for students without access to physical libraries; emphasis is on skills required to navigate the virtual library environment. Includes locating and evaluating information in e-book collections, full-text article databases, online indexes, via Internet, and interlibrary loan. Skills acquired are immediately relevant for other distance courses. Requires access to telephone and a computer with Internet, e-mail, and CD drive.

## **Marine Science and Limnology (MSL)**

(University of Alaska Fairbanks courses)

### **MSL F111 The Oceans**

**3 credits (3+0) JCSFOS**

This course examines in an introductory way the classic disciplines of ocean science beginning with important definitions and a general history of oceanography. Emphasis is on descriptive biological, physical, chemical, and geological marine science. Additional topics of special interest including scuba, demonstrations of marine research instrumentation, and films of current oceanographic topics such as coastal upwelling and polar oceanography will supplement the lecture.

### **MSL F411 Current Topics in Oceanographic Research**

**3 credits (3+0) JCSFOS**

Study of current oceanographic research problems from biology, chemistry, geology and physics. Topics will include sea floor hydrothermal vents and their indigenous communities, manganese nodules, tsunami prediction, radioisotopes in the sea, Bering Sea productivity, and the role of the ocean in global warming due to fossil fuel carbon dioxide. Prerequisites: four semesters of natural sciences at 100-level or above or permission of the instructor.

## **Marine Technology (MT)**

### **MT S119 Skiff Operator**

**1 credit (1+0) K**

Learn to safely operate a skiff in Alaskan waters. The course covers navigating, trip planning, line and vessel handling including one practice session using a skiff in the water. Rain gear may be required.

### **MT S120 Outboard Motor Maintenance**

**1 credit (0+2) J, K**

An introduction to outboard systems that need maintenance and upkeep for efficient operation. Ignition, carburetion power head and lower unit systems will be studied emphasizing preventive maintenance.

### **MT S121 Outboard and Small Engine Repair**

**3 credits (1+4) J**

Outboard and small engine repair theory, diagnosis service and repair of outboard and other small gasoline engines.

### **MT S122 Inboard and Sterndrive Maintenance**

**2 credits (1+2) J**

Course covers basic inboard engine and sterndrive operations, servicing, troubleshooting and tune-up procedures. Standard brand outdrive units will be covered along with normal inboard transmissions, shafts, and propeller installation and maintenance.

### **MT S129 Basic Safety Training**

**2 credits (2+1) K**

This US Coast Guard approved course meets the requirements of the International Convention on Standards of Training and Watchkeeping for Seafarers (STCW) 95. The four modules of the course are Personal Survival, Fire Fighting, First Aid, and Personal Safety & Responsibility. Prerequisite: Must be physically able to demonstrate practical competencies.

### **MT S131 Seamanship**

**3 credits (2.5+1) J, K**

Seamanship skills are taught in a hands-on competency-based manner. Students learn terms, boat handling, vessel systems, stability, weather and marlinspike. Emphasis is placed on safety, including both pool and on-board drills. This course is U.S. Coast approved on the Ketchikan campus as one of three courses for the 100 Ton Masters license with no additional examination.

### **MT S134 Marine Drill Instructor**

**1 credit (1+.5) K, S**

This course focuses on survival equipment and procedures to be used in an emergency in the marine environment. This course also includes the drill instructor requirements for documented fishing vessels that fish beyond the boundary line. Hands on training with life rafts, EPIRBS, immersion suits, and firefighting are included. A pool exercise will also be conducted as well as a drill onboard a fishing vessel.

### **MT S211 Aluminum Boat Building**

**3 credits (1+4) J**

This class will concentrate on the fundamentals of aluminum boat building. Class projects may vary in size and type of boat, and may be available for purchase. Students should be familiar with the basics of plate development or have previous aluminum welding experience. Prerequisite: WELD S124 or instructor approval.

### **MT S225 Able Seaman**

**2 credits (1.5+1) K**

This course prepares the mariner to pass the Able Seaman exam administered by the Coast Guard. Students learn rules of the road, ship nomenclature, knots, splices and general seamanship topics.

### **MT S230 Proficient in Survival Craft**

**2 credits (2+0) K**

This U.S. Coast Guard approved course provides training in the use of lifeboats, life rafts and survival gear. It meets the requirements of 46 CFR 12.10-3(a)(6) and 46 CFR 12.10-5 for endorsement for Lifeboatman. It also meets the requirements of Section A-VI/2 and Table A-VI/2-1 of the Standards of Training, Certification and Watchkeeping for Seafarers 95 (STCW).

### **MT S232 Radar Observer**

**2 credits (1+2) K**

This 40 hour, U.S. Coast Guard approved course provides training in basic radar theory and use. Topics include navigation and collision avoidance. Great emphasis is placed upon plotting techniques using state of the art simulators. This course also meets the requirements for towing vessels greater than 26 feet.

### **MT S233 Celestial Navigation**

**3 credits (3+0) J, K**

Basic concepts of celestial navigation and nautical astronomy. Definitions and solutions of the astronomical triangle utilizing H.O. 229 will be emphasized for practical application in the off shore navigation environment utilizing the marine-type sextant.

### **MT S236 Advanced Navigation**

**1 credit (0.5+1) K**

Advanced techniques used to fix the position of a vessel. Prerequisite: MT S132 or permission.

### **MT S238 U.S. Coast Guard Regulations**

**2 credits (1.5+1) K**

This course covers the rules and regulatory ramifications of vessel operation from Rules of the Road to Aids to Navigation. Also included is a study of the Code of Federal Regulations (CFRs) which pertain to vessels and their operation. This course is U.S. Coast Guard approved on the Ketchikan campus as one of three required courses for the 100 ton Master license with no additional U.S. Coast Guard exam.

### **MT S239 Master 100 Ton & Operator of Uninspected Passenger Vessel**

**4 credits (4+2) K**

This course and instructor have been approved by the U.S. Coast Guard for Third Party testing. A UAS Certificate of completion is accepted as a substitute for testing by the Coast Guard. Depending on sea experience and other Coast Guard requirements, a person passing this course is eligible to receive an Operator of Uninspected Passenger Vessel (OUPV, commonly called a 6-pack license) up to a Master 100 Gross Ton license.

### **MT S282 Marine Technology Laboratory**

**3 credits (.5+5) J, K**

This supervised laboratory serves as an extension for students course work from other classes in marine technology program. All projects must be approved by the instructor prior to the start of class. Class may be repeated as necessary for project completion. Prerequisite: instructor approval.

## **Mathematics (MATH)**

*\*Courses below 100 level are not applicable to A.A. or baccalaureate degrees.*

### **MATH S054 Preparatory Mathematics\***

**3 credits (3+0) J, K, S**

Review of concepts necessary for a course in algebra fundamentals. Topics of study include whole numbers, integers, fractions, decimals, and applications. Prerequisite: Placement Test.

### **MATH S055 Fundamentals of Algebra\***

**4 credits (4+0) J, K, S**

Introduction to elementary algebra including writing, simplifying and evaluating algebraic expressions; polynomials, factoring, rational forms, graphing, radicals, linear equations, linear inequalities, and problem solving. Prerequisite: MATH S054 with a P or Placement test.

### **MATH S105 Intermediate Algebra**

**4 credits (4+0) J, K, S GER**

Introduction to the properties, graphs, and applications of linear, quadratic, rational, and radical functions. Prerequisite: MATH S055 with a C or better or Placement Test.

### **MATH S107 College Algebra**

**4 credits (4+0) J, K, S GER**

A detailed study of linear, quadratic, rational, radical, exponential and logarithmic functions; operations on and applications of these functions, and selected topics from algebra. Prerequisite: MATH S105 with a C or better.

### **MATH S108 Trigonometry**

**3 credits (3+0) J, K**

Properties and applications of trigonometric functions. Prerequisite: MATH S107.

### **MATH S131 Concepts and Applications of Contemporary Mathematics**

**4 credits (4+0) J GER**

Study of topics from management science, growth and symmetry, and statistics and probability. Prerequisite: MATH S105 with a C or better.

### **MATH S200 Calculus I**

**4 credits (4+0) J, K, S GER**

Limits, continuity and differentiation of functions, analysis of functions and their graphs, applications of the derivative, introduction to integration, fundamental theorem of calculus. Prerequisite: C or higher in both MATH S107 and MATH S108. Graphing calculator required.

### **MATH S201 Calculus II**

**4 credits (4+0) J**

Applications of the definite integral, techniques of integration, introduction to differential equations, infinite series, polar coordinates, parametric equations, conic sections. Prerequisite: MATH S200.

### **MATH S202 Calculus III**

**4 credits (4+0) J**

Vectors in 3-space, vector-valued functions, differential calculus of functions of several variables, multiple integrals, vector integral calculus, Green's and Stoke's Theorem. Prerequisite: MATH S201.

### **MATH S205 Mathematics for Elementary School Teachers I**

**3 credits (3+0) J**

Designed for elementary education majors. Sets, functions, numeration systems, integers, elementary number theory and rational numbers. Prerequisite: MATH S107 and ED S222.

### **MATH S206 Mathematics for Elementary School Teachers II**

**3 credits (3+0) J**

Designed for elementary education majors. Real numbers, informal geometry, measurement, statistics and probability. Prerequisite: MATH S107 and ED S222.

### **MATH S215 Introduction to Proofs**

**3 credits (3+0) J**

Basic techniques of abstract formal reasoning in the mathematical sciences. Topics include logic, elementary set theory, relations, functions, proof by induction and other proof techniques. Intended for students majoring in mathematics; math majors should plan to complete it concurrently with MATH S200 or S201. Corequisite: MATH S200

### **MATH S302 Differential Equations**

**3 credits (3+0) J**

First order differential equations, higher order linear differential equations, systems of linear differential equations, power series, Laplace Transforms, numerical methods, and applications. Prerequisite: MATH S202 or instructor approval.

### **MATH S305 Geometry**

**3 credits (3+0) J**

Selected topics from Euclidean geometry, hyperbolic geometry, elliptic geometry, projective geometry or affine geometry. Prerequisite: MATH S200.

### **MATH S311 Modern Algebra**

**3 credits (3+0) J**

Study of algebraic structures including groups, rings, integral domains, and fields. Prerequisite: MATH S200 and MATH S215.

### **MATH S314 Linear Algebra**

**3 credits (3+0) J**

Linear equations, finite dimensional vector spaces, matrices, determinants, linear transformations, eigenvalues, inner product spaces. Prerequisite: MATH S200.

### **MATH S324 Advanced Calculus**

**3 credits (3+0) J**

A thorough development of continuity, convergence of sequences and series of numbers, convergence of sequences and series of functions. Prerequisite: MATH S201 and MATH S215.

### **MATH S392 Junior Seminar**

**1 credit (1+0) J**

Advanced topics in mathematics that are not found in other course offerings. Possible topics include topology, number theory, and problem solving. May be repeated for credit. Prerequisites: MATH S201 and S215

### **MATH S410 Complex Variables**

**3 credits (3+0) J**

Complex numbers and their algebraic properties; functions of complex variables; calculus of complex functions; selected applications. Prerequisites: MATH S201.

### **MATH S411 History of Mathematics and Science**

**3 credits (3+0) J**

Topics in the history of mathematics and science from antiquity to the present. Prerequisite: MATH S200.

### **MATH S460 Mathematical Modeling**

**3 credits (3+0) J**

Introduces the process of developing, analyzing and interpreting mathematical models. Specific areas of application will depend on student majors and/or areas of interest. Topics will be selected from applications of mathematical and statistical methods to the biological and physical sciences. Not repeatable for credit. Prerequisites: MATH S200

### **MATH S492 Senior Seminar**

**1 credit (1+0) J**

Advanced topics in mathematics that are not found in other course offerings. Possible topics include topology, number theory, and problem solving. Students are required to give presentations. Prerequisites: MATH S392 and departmental approval. May be repeated for credit.

## **Music (MUS)**

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### **MUS S100 Music Appreciation and Principles**

**2 credits (2+0) J**

Enables students to develop awareness and knowledge of the major periods, styles, and landmark works in worldwide music. Basic elements of music will be identified and applied to study of masterworks and in learning to play the recorder. MUS S100 counts as a GER only in a combined pair with either ART S100 or THR S100.

### **MUS S123 Music Appreciation**

**3 credits (3+0) J, K GER**

Introduction to the historical and cultural aspects of music as an art form in the various stylistic eras, the leading figures in these eras, and the world they inhabited. The course also deals with the materials and structural elements from which a musical work is fashioned.

### **MUS S161, S261, S361, S461**

#### **Private Lessons**

**1–4 credits J**

Private instruction in piano, voice, strings, or winds. The course is designed to develop technique, improve musicianship, and broaden repertoire. The course may be repeated for credit. Note: private piano lessons offered in Ketchikan; half-hour per week for 2 credits. Prerequisite: permission.

## **Natural Science (NSCI)**

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### **NSCI S102 Weather and Geology of Southeast Alaska**

**2 credits (2+0) S**

This course focuses on the weather of Southeast Alaska and other science phenomenon as they apply to residents of Southeast Alaska. Topics include: Oceanography (air/ocean interaction, tides, tsunamis), and Glaciology (Alaska glaciation, tidewater glaciers, fjord dynamics).

## Oceanography (OCN)

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### **OCN S101 Introduction to Oceanography**

**3 credits (3+0) K, S GER**

Survey of the oceans. Geology, chemistry, physical and biological characteristics will be covered. Topics include plate tectonics, sedimentation, ocean topography, major and minor chemical elements of seawater, currents and water masses, waves and tides, upwelling, nutrient cycles, plankton and nekton, benthic and pelagic life.

### **OCN S210 Oceanography of Southeast Alaska**

**3 credits (3+0) K, S**

This course covers the physical, chemical and biological oceanography of Southeast Alaska. Material presented includes waves, tides, currents, bathymetry, circulation, and ecology in both inshore and offshore waters.

### **OCN S411 General Oceanography**

**3 credits (3+0) J, K**

Survey of the physics, chemistry and geology of the oceans, and explanations of the relationships between the physical environment and organisms. Prerequisites: BIOL S271 and CHEM S106.

## Outdoor Studies (ODS)

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*Must be admitted to the Outdoor Leadership Certificate program, or must have signature of program director to enroll in the course.*

### **ODS S114 Backpacking in SE Alaska**

**1 credit (.5+2) J**

Introduces skills and equipment required for overnight backpacking trips in SE Alaska in non-winter seasons. Covers selection of personal, group, and safety equipment. Overnight outings are a required component of the course.

### **ODS S115 Winter Backpacking in SE Alaska**

**1 credit (.5+2) J**

Introduces students to travel and camping in winter. Covers selection of personal, group, and safety equipment for an overnight outing. Emphasizes snow shelter construction and backcountry techniques appropriate for winter conditions. Overnight outings are a required component of the course.

### **ODS S116 Introduction to Rock Climbing**

**1 credit (.5+2) J**

A short introduction to the basics of rock climbing in both indoor and outdoor settings. Course covers risk assessment, hazard evaluation, equipment, climbing techniques, knots, belaying, rappelling and top rope anchor setup. Outings are a required course component.

### **ODS S117 Introduction to Ice Climbing**

**1 credit (.5+2) J**

An introduction to the basics of top rope ice climbing. Course covers risk assessment, hazard evaluation, equipment, ice climbing techniques, knots, belaying, rappelling, and top rope anchors for ice climbing. Outings are a required component of the course.

### **ODS S118 Avalanche Evaluation and Theory: Level I**

**2 credits (1+2) J**

An intensive course on avalanche study covering rescue, terrain analysis, snow study and stability evaluation, route finding, decision-making, and safe travel. The course combines in class and field orientated experience.

### **ODS S133 Introduction to Sea Kayaking**

**1 credit (.5+2) J**

Introduces the fundamentals of sea kayaking in Alaska. Includes the most commonly used equipment, techniques, challenges and hazards found in the activity. Provides instruction in selecting the equipment, trip planning, transporting boats, preparing to paddle, boat handling, re-entry techniques and sea kayaking strokes. Emphasizes risk assessment and safety skills. Requires backcountry camping skills and participation in an overnight outing.

### **ODS S148 Backcountry Skiing and Snowboarding**

**1 credit (.5+2) J**

This course will present students with skills needed to plan and complete short trips into the backcountry, on days with low avalanche danger, for the purpose of skiing (alpine and telemark) or snowboarding. Topics covered include gear, modes of travel, map reading for skiers and snowboarders, avalanche and other hazards.

### **ODS S205 Backcountry Navigation and Travel**

**2 credits (1+2) J**

This course will cover topics relating to extended backcountry trips and navigation by map and compass. Students completing the course will have skills necessary for planning and carrying out multi-day backpacking trips and should be able to use common maps to plan routes through unknown terrain.

### **ODS S206 Outdoor Leadership**

**3 credits (3+0) J**

This course gives students the opportunity to learn how to lead others in outdoor and adventure settings. The course covers, and gives students opportunities to practice, skills required to teach others, and lead and manage risk for groups participating in outdoor recreation related pursuits.

### **ODS S221 Glacier Travel and Crevasse Rescue Fundamentals**

**2 credits (1+2) J**

An introduction to the fundamentals of glacier travel and crevasse rescue. Topics include hazard evaluation and risk assessment, selection of personal gear, as well as climbing and safety gear necessary for glacier travel. In addition knots, rope handling, belay, rappelling and various climbing, glacier travel and crevasse rescue techniques will be discussed.

## **Philosophy (PHIL)**

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### **PHIL S101 Introduction to Logic and Reasoning**

**3 credits (3+0) J, S GER**

Analyzes argumentation and informal fallacies, introduces students to deductive logic, and examines inductive evidence in scientific and practical reasoning.

### **PHIL S201 Introduction to Philosophy**

**3 credits (3+0) J, K GER**

Basic concepts, problems and methods as reflected in writings of great philosophers of the Western philosophical tradition.

### **PHIL S206 Symbolic Logic**

**3 credits (3+0) J GER**

This course introduces students to formal systems and covers the application of symbolic techniques to the assessment of arguments. Logical concepts and techniques of natural deduction in propositional calculus and quantification theory are covered.

### **PHIL S271 Perspectives on the Natural World**

**3 credits (3+0) J GER**

What is wilderness, and what is our relationship to it? Explore the concepts of nature and wilderness from historical and contemporary perspectives of both Western and non-Western cultures. Conclusions reached will be applied to issues concerning ways in which members of contemporary Western society interact with the wilderness. Completion requires participation in overnight class outings. Prerequisite: ENGL S110 (C or higher) or instructor permission.

### **PHIL S301 Ethics**

**3 credits (3+0) J GER**

An introduction to classical and contemporary theories in philosophical ethics and to the problems those theories are designed to solve. Students will develop skills to help them to understand and think through situations in which moral factors play a significant role. Prerequisite: PHIL S201 or S204, or comparable course in philosophy.

### **PHIL S390 Selected Topics in Philosophy**

**3 credits (3+0) J**

Focused study of a particular philosopher, philosophical problems or area of philosophical thought. The specific topic is announced in the semester schedule. The course may be repeated for credit when the content varies. Prerequisite: PHIL S201 or S204, or permission from the instructor.

## **Physical Education (PE)**

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*Degree students may not apply more than 8 credits in PE at the 100-level toward a degree.*

### **PE S100 Health and Fitness**

**1 credit (1+0) J**

The course is an investigation of fitness and health: body structure and functions, emotional and social health, environmental impact on health, sound nutrition, prevention and treatment of childhood illness and common health problems, and media influences.

### **PE S103 Physical Activity: Individual Sports**

**1–3 credits (0+2–6) J, K, S**

Instruction, practice and activity under supervision in individual activities such as diving, tennis, racquetball/handball, swimming, golf, track and field. May be repeated for credit.

### **PE S104 Physical Activity: Team Sports**

**1–3 credits (0+2–6) J, K, S**

Instruction, practice and activity under supervision in team sports such as basketball, skiing, volleyball, soccer, and softball. May be repeated for credit.

### **PE S105 Outdoor Education: Selected Topics**

**1 credit (.5+2) J**

A foundation course in outdoor education designed to help students develop skills needed to fully appreciate all that Southeast Alaska has to offer, in as safe a manner as possible. Covers basic safety, gear and techniques in the selected topic area. At least one weekend outing will be a required course component. May be repeated for credit.

### **PE S200 Ocean Diving**

**2 credits (1+2) J**

Designed to improve ocean diving skills. Basic scuba equipment review, underwater navigation, night diving, basic deep diving patterns, small boat diving techniques. Intended as intermediate program for basic scuba divers and introduction to Juneau regional diving environment; lectures, two pool sessions, eight dives. Prerequisite: permission of instructor.

### **PE S210 Advanced Diving**

**4 credits (2+4) J**

Designed to develop advanced diver skills and safety procedures. Intended for experienced divers new to diving in Southeast Alaska, for divers re-entering diving, and for divers with basic or intermediate skills who want to develop advanced diver experience. The course consists of lectures focusing on dive safety, equipment systems, the marine environment, and procedures and techniques for advanced diving specialties. Openwater dives include night diving, deep and shallow diving, drift diving, underwater navigation exercises, and search and recovery exercises. The dives serve as an orientation to a variety of Southeast Alaska dive conditions and dive sites, and promote diver safety and awareness. Prerequisite: PE S200 or equivalent.

### **PE S246 Advanced Lifesaving**

**1 credit (.5+1) S**

Provides students with current trends, information, and knowledge to save their own or the lives of others in an aquatic environment. Those completing the course are entitled to Red Cross Advanced Lifesaving certification. Prerequisite: must be at least 15 years old and able to pass swimming and diving proficiency tests.

## **Physics (PHYS)**

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### **PHYS S102 Survey of Physics**

**4 credits (3+3) J, K, S GER**

Concepts and methods of physics for students lacking prior physics study. The course introduces ideas selected from motion, properties of matter, electricity and heat with laboratory experiences. Emphasis is on the reasoning and techniques used in physics. Prerequisite: MATH S107 or equivalent.

### **PHYS S103 College Physics I**

**4 credits (3+3) J, K GER**

Classical mechanics including mechanical energy, waves, sound and fluids. Prerequisite: high school physics and MATH S107 and MATH S108.

### **PHYS S104 College Physics II**

**4 credits (3+3) J, K GER**

Electricity, magnetism, optics and an introduction to modern physics. Prerequisite: PHYS S103.

### **PHYS S209 Fundamentals of Meteorology**

**3 credits (3+0) J GER**

An introductory course in meteorology for the non-science major. Topics include the nature of atmosphere, physical processes in the atmosphere and weather.

### **PHYS S211 General Physics I**

**4 credits (3+3) J GER**

Calculus based study of principles of mechanics. Topics include energy, oscillations, sound and fluids. Prerequisites: high school physics and MATH S200.

### **PHYS S212 General Physics II**

**4 credits (3+3) J GER**

Continuation of PHYS S211. Topics include electricity, magnetism, and optics. Prerequisite: PHYS S211.

## **Psychology (PSY)**

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### **PSY S101 Introduction to Psychology**

**3 credits (3+0) J, K, S GER**

An introduction to the fundamentals of general psychology and human behavior. Topics include an overview of the field of psychology, research methods, the brain, lifespan development, perception, consciousness, learning, memory, language, intelligence, motivation, emotion, mental disorders, personality, and social behavior. Prerequisite: ENGL S110 or instructor permission.

### **PSY S110 College Orientation and Personal Adjustment**

**1 credit (1+0) J**

Provides students with strategies necessary for success in college and life skills to assist after college. Includes time management, learning styles, study techniques, academic expectation and resources, social and cultural adjustments, and goal setting. PSY S110 is not a prerequisite for other PSY courses.

### **PSY S245 Child Development**

**3 credits (3+0) J**

Study of physical, emotional, cognitive, and social aspects of a child's development from prenatal period through adolescence. Includes theoretical view of development and effects of genetics, environment and socialization. Prerequisite: PSY S101 or instructor permission.

### **PSY S250 Lifespan Development**

**3 credits (3+0) J, K GER**

Introduction to the various aspects of development and changes that occur throughout a person's life span. Covers prenatal period, infancy, childhood, and adolescence; early, middle and late adulthood. Prerequisite: PSY S101 or permission of instructor.

### **PSY S269 Human Sexuality**

**3 credits (3+0) J, K**

Examines topics of human sexual functioning in terms of historical influences; anatomical and physiological aspects; the social, cultural, and behavioral aspects of human sexuality; including the social construction of sexuality, and sexual behaviors. Practices, meaning and identities across a limited range of cultures and topics. Prerequisite: PSY S101 or permission of instructor.

### **PSY S302 Social Psychology**

**3 credits (3+0) J**

Examines the behavior of individuals in social situations and why individuals behave, think, and feel as they do in the presence of others. Includes research methods, social perceptions and inferences, stereotyping and prejudice, aggression, attitudes, conformity, obedience, group processes, social environmental influences on behavior. (cross-listed SOC S302) Prerequisites: PSY S101 and upper division standing or permission.

### **PSY S313 Psychology of Women**

**3 credits (3+0) J**

Examines the impact society and sex roles have on an individual woman's behavior. Students become knowledgeable about psychological research and theories about women and gender to connect these with their own experiences and the experiences of other women. Uses a feminist approach to promote empowerment through the development of critical thinking. Prerequisite: PSY S101 or permission of instructor.

### **PSY S316 Motivation and Emotion**

**3 credits (3+0) J**

Examines basic theories and phenomena associated with motivational states and emotional experiences. Human motives are described and related to various forms of behavior. Characteristics of emotional states are identified. Prerequisite: PSY 101 and 250; or instructor permission.

### **PSY S340 Abnormal Psychology**

**3 credits (3+0) J, K**

Critical exploration of human experience and behavior in dimensions generally considered outside the range of normality. Integrates current diagnostic taxonomy with current research and prevailing theoretical perspectives with attention to cultural and development issues. Prerequisite: PSY S101 or permission of instructor.

### **PSY S370 Drugs and Drug Dependence**

**3 credits (3+0) J**

Comprehensive overview of commonly used drugs, medical uses of drugs, physiological and psychological effects, law enforcement and legal aspects of drug abuse, cultural influences on substance abuse and addiction, acute and chronic alcoholism, and substance-abuse related disorders. Theories of addiction, treatment, and prevention are also addressed. Prerequisite: PSY S101 or permission of instructor.

### **PSY S375 Current Issues in Psychology: Selected Topics**

**1–3 credits (variable) J**

Covers contemporary topics related to the field of psychology. Subjects focus on such areas as: Environmental Psychology, Psychology and Religion, Stereotyping and Prejudice, Industrial/Organization Psychology, Domestic Violence, Psychology and the Media, Forensic Psychology. Prerequisite: PSY S101 or permission of instructor.

### **PSY S406 Personality Theories**

**3 credits (3+0) J**

A survey of contemporary theories of personality, with critical examination of theoretical perspectives and theory construction. Emphasizes relevant research findings. Develops understanding for, and prediction of, human behavior, thought and feeling. Prerequisites: PSY S250 and one additional psychology course; upper division standing or permission.

### **PSY S430 Clinical and Counseling Psychology**

**3 credits (3+0) J**

Introduction to major theoretical approaches and to applied issues in clinical and counseling psychology. The students' ability to understand and articulate the relationship between theory and practice is emphasized. Major professional issues are discussed. Prerequisites: PSY S340 and one additional psychology course; upper division standing or permission.

### **PSY S440 Learning and Cognition**

**3 credits (3+0) J**

Analysis of major approaches to learning and cognition, including behavioral, social, cognitive, and biological. Classical and operant conditioning, observational learning, skill acquisition, memory, and language. Prerequisite: PSY 101 plus two additional PSY courses and upper division standing; or instructor permission.

### **PSY S494 Counseling Practicum**

**1–3 credits J**

Supervised field experience in an applied psychological setting which may be in a clinic, hospital, school, or other public or private community agency. The student learns to articulate an approach to counseling. Prerequisite: permission.

## **Public Administration (PADM)**

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### **PADM S125 Economics for Public Managers**

**3 credits (3+0) J**

This course examines the foundations of micro and macro economics as they apply to Public Managers. It introduces and applies economic concepts and languages. It introduces supply and demand and the rational decision making of firms, as well as macro economics concepts such as monopolies and externalities. This course satisfies the micro and macro economic prerequisite requirements for the Master of Public Administration and the Master of Business Administration degrees. Prerequisites: MATH S105

### **PADM S310 Introduction to Public Policy**

**3 credits (3+0) J**

Introduction to the public policy process. The role of public administration will be examined within the context of the political environment. The policy role of the public administrator will be examined as well as the construction of an analytical framework from which the process of public policy can be explored.

### **PADM S601 Introduction to Public Administration**

**3 credits (3+0) J**

Introduction to the field of public administration, dealing with the scope, nature, history, current context, and basic tools in the study of public administration. Topics include the social, economic, and political environments of public administration, bureaucratic politics, power and authority, law, ethics, basic models, and comparative administration. This gateway course for the MPA program provides an introduction to graduate studies, library research skills, and a focus on written and oral communication skills.

### **PADM S604 Research Methods in Administration**

**3 credits (3+0) J**

Introduces basic quantitative and qualitative methods of social science research as applied to policy and administrative problems. Addresses research design, data collection and analysis methods, interpretation and evaluation of published research. Prerequisite: Introductory statistics class.

### **PADM S610 Organization Theory and Behavior**

**3 credits (3+0) J**

Presents organization theory and builds practical management skills. Develops a working understanding of how organizational structure and environment relate to the success of an organization, and improves skills critical to leading, managing, and working in an organization, including leadership, individual and group decision-making, personal and group communication, motivation and fostering creativity, and conflict resolution.

### **PADM S615 Intergovernmental Relations**

**3 credits (3+0) J**

Explores the complexities of policy and program management in an era of interacting governments and overlapping responsibilities. Examines the interface between levels of government and the nonprofit and private sectors.

### **PADM S618 Law for Public Managers**

**3 credits (3+0) J**

Legal guidelines for adoption, implementation, and adjudication of public agency regulations at federal, state, and local levels. Legislative, executive, and judicial controls on agencies, and the political environment of regulatory action.

### **PADM S624 Human Resources Administration**

**3 credits (3+0) J**

Survey of human resource management issues in the public sector, including recruitment, selection, classification, compensation, training and development, discipline and dispute resolution, collective bargaining, performance evaluation, and risk management. Addresses law and practice of current issues such as affirmative action, discrimination, sexual harassment, disabilities, family medical leave, and pay equity.

**PADM S625 Economics and Public Policy**  
**3 credits (3+0) J**

Examines economics both as a determinant of public policy and as a tool of public administration. Topics include how markets allocate resources, the role of government in a market economy, market failures and responses, problems of efficiency vs. equity, and application of microeconomic tools to analysis of Alaska and national policy issues. Prerequisite: ECON S201 and S202, or PADM S125 or equivalent.

**PADM S628 Public Financial Management**  
**3 credits (3+0) J**

Survey of theory, practice, problems and politics of financial management in governmental units, revenue sources, budgetary planning and control, methods of debt financing, and intergovernmental relationships. Addresses federal, state, and local perspectives. Prerequisite: ECON S201 and S202, or PADM S125 or equivalent.

**PADM S636 Natural Resource Law**  
**3 credits (3+0) J**

Provides an in-depth analysis of natural resource, environmental, and public land law. Examines legislation and legal precedent through a historic review. Examines modern cases and current legal trends and provides perspective and skills in law for natural resource administrators. Special attention is given to legislation and laws of special interest to Alaska.

**PADM S671 Selected Topics in Public Administration**  
**1–3 credits (1–3+0) J**

Examination of selected topics pertinent to public administration. Course may be repeated, provided course content differs.

**PADM S675 Leadership Communications for Public Managers**  
**3 credits (3+0) J**

When organizational problems are identified, the most frequently mentioned problem is communications. The purpose of this course is to understand and practice good communications in the public administration setting. This includes not only interpersonal and organizational communications, but also communications with citizens, their representatives and the media.

**PADM S688 Program Evaluation and Performance Measurement**  
**3 credits (3+0) J**

Introduces students to the theories, concepts, and analytical tools used in the evaluation of public programs and policies. Examines conceptualization and practicality of measures that accurately evaluate performance. Explores the dynamics of evaluating program process and structure in a political environment. Prerequisite: PADM S604.

**PADM S690 Public Administration Capstone**  
**3 credits (3+0) J**

Final course in the MPA curriculum. Students review, synthesize and apply concepts and methods learned during the degree program to the evaluation of a public or nonprofit organization. Intended as a program review and assessment tool. Prerequisite: Completion of all other MPA requirements.

**PADM S698 Directed Research**  
**1–6 credits (variable) J**

(cross-listed BA S698)  
Investigation of an administrative problem which falls within the scope of the student's program. Topic must be approved by student's advisory committee. The investigation and written report is conducted under the auspices of a designated member of the faculty. Prerequisite: permission.

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**Russian (RUSS)**

**RUSS S101 Elementary Russian I**  
**4 credits (4+0) J, K, S GER**

An introduction to basic Russian grammatical structures and vocabulary items with an emphasis on the development of listening and speaking skills.

**RUSS S102 Elementary Russian II**  
**4 credits (4+0) J, K, S GER**

A continuation of RUSS S101. Focuses on grammatical structures and vocabulary building and emphasizes listening/speaking skills. Prerequisite: RUSS S101 or instructor permission.

**RUSS S201 Intermediate Russian I**  
**4 credits (4+0) J, S**

A continuation of RUSS S102. Focuses on grammatical structures, vocabulary building and listening/speaking skills with a growing emphasis on reading and writing ability. Conducted in Russian. Prerequisite: RUSS S102 or instructor permission.

## **RUSS S202 Intermediate Russian II**

**4 credits (4+0) J, S**

A continuation of RUSS S201. Focuses on grammatical structures, vocabulary building and listening/speaking skills with a growing emphasis on reading and writing ability. Conducted in Russian. Prerequisite: RUSS S201 or instructor permission.

## **Social Science (SSCI)**

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### **SSCI S101 Self, Culture, and Society**

**3 credits (3+0) J**

An introduction to the fundamental issues and texts of the social sciences. Examines classic and contemporary texts and theories, readings, methods, and issues. Prerequisite: ENGL S110 (C or better).

### **SSCI S102 Reading and Writing in the Social Sciences**

**2 credits (2+0) J**

Introduction to reading, understanding, and responding to research, journal articles, and critical analyses in multidisciplinary social science writings. Objective evaluation and writing techniques are emphasized. Prerequisite: ENGL S110 (C or better).

### **SSCI S210 First Portfolio Review Class**

**1 credit (1+0) J**

A required class for all social science students, this course introduces students to the social sciences, and assists each student in preparing a portfolio for the First Review of the Social Science Senior Assessment Portfolio Plan. Recommended for students declaring Social Science emphasis. Prerequisite: Social Science emphasis.

### **SSCI S300 Research Methods in the Social Sciences**

**3 credits (3+0) J**

An overview of inquiry methods in the social sciences. Students learn skills in hypothesis formation, literature review, research design, data collection and interpretation. Issues of correlation, cause and inference are discussed, and students gain experience in use of quantitative and qualitative analysis. Desired writing, graphing, collaborative and presentation practices are covered, as are political and ethical issues. The course is interdisciplinary and is strongly recommended for students in the social science curriculum. Prerequisite: 9 credits of social science, or permission.

## **Sociology (SOC)**

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### **SOC S101 Introduction to Sociology**

**3 credits (3+0) J, K, S GER**

Serves as an overview to the essentials of the discipline, including its theories and methodology. Sociology explores the relationship between the individualist, culture and society, examining how cultural and social forces influence personal experience and group behavior. Prerequisite: ENGL 110 or instructor permission.

### **SOC S102 Science, Technology and Society**

**3 credits (3+0) S**

A study of how science, technology, and society have developed throughout history and the influence and impact they have had on one another. It is a systematic, integrated exploration of the relationships between science and technology and modern society from a sociological and philosophical perspective. The specific relationships between Alaska native societies and western science and technology will be investigated. The content is designed to broaden the students understanding of process interactions and the evaluation of the impact of science, technology, and science on one another.

### **SOC S201 Social Problems**

**3 credits (3+0) J, K GER**

Survey of some of today's major social problems such as criminal and violent behavior, health problems, poverty, racism, gender inequality, sexual deviance, and substance abuse. Examines how social issues become social problems, the causes of problems, and the dynamics involved in arriving at policies and solutions.

### **SOC S242 Marriage, Family and Intimate Relationships**

**3 credits (3+0) K**

An introduction to the sociological study of contemporary patterns of marriage, family, and other intimate relationships. Explores the impact of gender roles, ethnicity, as well as economic and social forces and other intimate relationships.

### **SOC S251 Criminology**

**3 credits (3+0) J**

The study of deviant behavior and theories of crime causation and their relationship to society, law and law enforcement. Prerequisite: SOC S101 or permission.

### **SOC S301 Sociology of Close Relationships**

**3 credits (3+0) J**

This course examines the formation, development, maintenance, change and termination of close relationships. Close relationships are those characterized by emotional and/or sexual intimacy. In this course, focus will primarily be on close relationships between men and women, including but not limited to, those resulting in marriage or marriage-like circumstances. Issues addressed will include relationship structures and interactions, partner selection, parenting, violence, and dissolution. Prerequisite: ANTH S101 or S202, or SOC S101, or PSY S101.

### **SOC S302 Social Psychology**

**3 credits (3+0) J**

Examines the behavior of individuals in social situations and why individuals behave, think and feel as they do in the presence of others. Includes research methods, social perceptions and inferences, stereotyping and prejudice, aggression, attitudes, conformity, obedience, group processes social and environmental influences on behavior. (cross-listed PSY S302) Prerequisite: SOC S101, upper division standing or instructor permission.

### **SOC 325 Theory and Research in Criminology**

**3 credits (3+0) J**

This course will provide a study of crime, criminals, and victims in society. Focus will be on why some acts and not others are defined as crimes; an examination of the social responses to crime, and why some people and not others are processed through the system. Theories that attempt to explain why some people engage in crime, and research that examines particular types of crime will be explored. Prerequisite: SOC S101.

### **SOC S343 Sociology of Deviant Behavior**

**3 credits (3+0) J**

A study of the etiology of deviant behavior, both criminal and non-criminal, with an emphasis on the nature of social interaction, and an examination of the social control groups and institutions which deal with deviant behavior. Topics include physical and sexual violence, suicide, mental disorder, heterosexual deviance, homophobia, and illegal drug use. Prerequisite: SOC S101.

### **SOC S346 Alaskan Social Problems**

**3 credits (3+0) J**

This course will examine the macro forces that have influenced, and may have helped create, current Alaskan social issues and problems. It will focus on the underlying political processes, and economic and cultural forces that shape what the public has come to define as a social problem or issue. Prerequisite: SOC S101 or S201.

### **SOC S370 Medical Sociology**

**3 credits (3+0) J**

Medical sociology studies medicine as a social institution. It involves the use of medical settings to investigate areas such as organizational structure, role relationships, and role conflicts, and the attitudes and values of persons involved in health care transactions. Prerequisite: SOC S101.

### **SOC S372 Contemporary Issues in Technology and Society**

**3 credits (3+0) J**

Examines the social, ethical, and environmental issues raised by the development and use of modern technology.

### **SOC S375 Current Issues in Sociology: Selected Topics**

**1–3 credits (variable) J, K**

In-depth exploration of a major timely topic in applied or theoretical sociology. Topics may include substance abuse, human sexuality, and religion.

### **SOC S377 Men, Women and Change**

**3 credits (3+0) J**

This course will familiarize students with the body of knowledge that constitutes the sociological discipline concerning gender issues in contemporary society. Students will be assisted in connecting a central element in their personal lives—their gendered experiences—with the social and political world in which they live. Men and women are treated differently in most societies, and the information examined will address this differential treatment and its significance in the everyday lives of men and women within the context of particular structural institutional arrangements. Prerequisite: SOC S101 or permission.

## **SOC S410 Sociology of American Multiculture**

**3 credits (3+0) J**

Sociology of American Multiculture is designed to assist, encourage, and challenge awareness and knowledge of self and others in racially and ethnically diverse society, populations and issues within the US. The course will develop an appreciation of the influence of one's cultural heritage upon self; a greater understanding and valuing of the cultural values; beliefs, and behaviors of persons of a different heritage; and an increased sensitivity to and knowledge of the diversity and complexity of the relationship between people of differing backgrounds and experiences. Prerequisite: SOC S101 and one upper division sociology class, or permission from the instructor.

## **Spanish (SPAN)**

*\*SPAN S100A and S100B not applicable to associate of arts and bachelor's degrees.*

### **SPAN S100A Conversational Spanish I\*** **1 credit (1+0) S**

Provides beginning students with a basic foundation in conversational Spanish. Students learn to speak in the present tense and learn to read and write simple paragraphs. Conversation related to everyday situations.

### **SPAN S100B Conversational Spanish II\*** **1 credit (1+0) S**

Continues Spanish, with emphasis on conversation related to travel and everyday situations. Students learn to speak in the past and future tenses, as well as expand their knowledge of the present tense. Prerequisite: SPAN 100A or instructor permission.

### **SPAN S101 Elementary Spanish I** **4 credits (4+0) J, K, S GER**

An introduction to basic Spanish grammatical structures and vocabulary items with an emphasis on the development of listening and speaking skills.

### **SPAN S102 Elementary Spanish II** **4 credits (4+0) J, K, S GER**

A continuation of SPAN S101. Focuses on grammatical structures and vocabulary building and emphasizes listening/speaking skills. Prerequisite: SPAN S101 or instructor permission.

### **SPAN S201 Intermediate Spanish I** **4 credits (4+0) J**

A continuation of SPAN S102. Focuses on grammatical structures, vocabulary building and listening/speaking skills with a growing emphasis on reading and writing ability. Conducted in Spanish. Prerequisite: SPAN S102 or instructor permission.

### **SPAN S202 Intermediate Spanish II** **4 credits (4+0) J**

A continuation of SPAN S201. Focuses on grammatical structures, vocabulary building and listening/speaking skills with a growing emphasis on reading and writing ability. Conducted in Spanish. Prerequisite: SPAN S201 or instructor permission.

### **SPAN S317 Spanish Conversation** **3 credits (3+0) J**

A continuation of SPAN S202, Intermediate Spanish. Focus is on gaining vocabulary and learning idiomatic expressions for increased verbal fluency. Includes some fine tuning of grammar skills and work on reading skills, but emphasis is on practicing conversation and creating situations in the classroom that simulate situations students would encounter in a Spanish speaking community or country. Prerequisite: SPAN S102 (SPAN S201 and S202 recommended) and ENGL S211 with C or better and upper division standing or instructor permission.

### **SPAN S318 Themes in Literature: Selected Topics**

**3 credits (3+0) J**

Advanced exploration of literary themes in various genres of literature, including fiction, poetry, drama, and film. Conducted entirely in Spanish. The specific theme is announced in the semester schedule. The course may be repeated for credit when content varies. Prerequisite: SPAN S102 (SPAN S201 and S202 recommended) and ENGL S211 with a "C" or better and upper division standing or instructor permission.

### **SPAN S331 Language and Culture of the Spanish Speaking World**

**3 credits (2+2) J**

An intensive immersion program designed to introduce the student to the language and culture of countries in the Spanish speaking world. Course includes four meetings prior to departure to discuss culture, linguistics, and group dynamics while traveling for one month in the focus country. Two post-travel meetings for debriefing and synthesis. Requires two papers and a final project involving community education. Prerequisite: At least 4 credits of language study pre-departure, or instructor permission.

## Statistics (STAT)

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\*University of Alaska Fairbanks course

### **STAT S107 Introductory Statistics**

**4 credits (4+0) J, K, S, GER**

Descriptive statistics, estimations, statistical tests. Prerequisite: MATH S105 with grade C or better or placement test into MATH S107.

### **STAT S273 Elementary Statistics**

**3 credits (3+0) J, K, S**

Introduction to data analysis, least-squares regression, data production, sampling distributions, probability, confidence intervals, hypothesis testing, detection and analysis of patterns in data. Prerequisite: MATH S107 or equivalent.

### **STAT S373 Probability and Statistics**

**3 credits (3+0) J**

A calculus-based course emphasizing theory and applications. Continuous and discrete random variables and their probability distributions, including joint distributions; functions of random variables, including moment-generators; estimations, including Bayesian methods and maximum likelihood; introduction to the study of the power and significance of hypothesis tests. Prerequisites: MATH S200. Requires a graphing calculator.

### **STAT S401 Regression and Analysis of Variance**

**4 credits (3+3) J**

A study of multiple regression including multiple and partial correlation, the extra sum of squares principle, indicator variables, and model selection techniques. Analysis of variance and covariance for multi-factor studies in completely random and randomized complete block designs, multiple comparisons and orthogonal contrasts. Prerequisite: STAT S273 or equivalent or higher, or instructor permission.

### **STAT F602 Experimental Design\***

**3 credits (3+0) JCSFOS**

Constructing and analyzing designs for experimental investigations; completely randomized, randomized block and Latin-square designs, split-plot design, incomplete block design, confounded factorial designs, nested designs, treatment of missing data, comparison of designs. Prerequisite: STAT F401/S401 or consent of instructor.

### **STAT F621 Distribution-Free Statistics\***

**3 credits (3+0) JCSFOS**

Methods for distribution-free (non-parametric) statistical testing. These methods apply to many practical situations including small samples and non-Gaussian error structures. Univariate, bivariate, and multivariate tests will be presented and illustrated using a variety of applications and data sets. Prerequisite: STAT S273; STAT F401/S401 recommended.

### **STAT F640 Exploratory Data Analysis\***

**3 credits (2+2) JCSFOS**

Quantitative and graphical methods for explaining data and for presenting data to others. Computer-aided detection and analysis of patterns in data. Methods for validating the assumptions of common statistical tests and models. Use of computer graphics in statistical analysis. Prerequisite: STAT S273; STAT F403 recommended.

### **STAT F661 Sampling Theory\***

**3 credits (3+0) JCSFOS**

Statistical theory for sampling and sample surveys. Choice of method, power and sample size considerations, treatment of sampling and nonsampling biases. The jack-knife, the bootstrap, and resampling plans. Prerequisites: STAT S273; STAT F403 recommended.

## Theatre (THR)

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### **THR S100 Theatre Appreciation and Principles**

**2 credits (2+0) J**

Enables students to understand movement, drama and theater through the study of drama and the major works of Western theatre. THR S100 counts as a GER only in a combined pair with either ART S100 or MUS S100.

### **THR S211 Introduction to Drama I**

**3 credits (3+0) J, K GER**

Theatre in its Western historical context, coupling a study of theatrical modes with the reading of plays from different time periods. This course begins with ancient Greek theatre through 18th century drama. When possible, local guest artists meet with students, and classes attend performances. Readings may include Sophocles, Euripides, Shakespeare, Behn and Moliere. Prerequisite: ENGL S111 (C or higher) or instructor permission.

### **THR S212 Introduction to Drama II**

**3 credits (3+0) J, K GER**

Theatre in its Western historical context, coupling a study of theatrical modes with the reading of plays from the 19th and 20th centuries. When possible, local guest artists meet with students, and classes attend performances. Readings may include Ibsen, Chekhov, Williams, Churchill, and Havel. Prerequisite: ENGL S111 (C or higher) or instructor permission.

### **THR S218 Studies in Theatre**

**3 credits (3+0) J**

Analysis and application of selected topics from Theatre, including but not limited to stagecraft, arts and administration. The specific topic is announced in the semester schedule. May be repeated for credit when content varies. Prerequisite: ENGL S111 (C or higher) or instructor permission.

### **THR S221 Acting I**

**3 credits (1+4) J**

An introduction to the basics of truthful acting, using prepared and improvised exercises to explore acting techniques. Moment to moment acting, analyzing text for actions and objectives, and application through work on scenes from modern plays. Process-oriented with a final presented scene and/or monologue.

### **THR S222 Acting II**

**3 credits (1+4) J**

A rigorous study of the vocal and physical aspects of acting, with focus on expressive use of voice and body. Includes Linklater voice production and Skinner stage speech and direction, as well as Anne Bogart's Viewpoints. For experienced actors, voice and body work will be connected to use of imagination and play.

### **THR S294 Theatre Practicum**

**1–3 credits (0+0+4-12) J**

Participation in drama workshop or lab production as performer or technical staff member. Three to nine hours lab per week required. Prerequisite: Instructor permission.

### **THR S331 Directing**

**3 credits (1+4) J**

Direction of short plays for drama-lab production. Four hours lab per week required. Prerequisite: THR S221.

### **THR S391 Theatre Internship**

**1–3 credits (0+0+4-12) J**

Work experience where a student is employed (paid or non-paid) by a theatre organization and is under the supervision of both a qualified professional in that work environment and a theatre faculty member. Prerequisite: admission to a program, demonstration of preparation for internship activity, or instructor permission.

### **THR S418 Advanced Studies in Theatre**

**3 credits (3+0) J**

Advanced analysis and application of selected topics from theatre, including but not limited to stagecraft, arts administration, and directing. The specific topic is announced in the semester schedule. May be repeated for credit when content varies. Prerequisite: C or higher in ENGL S211 and a lower division THR course, or instructor permission.

### **THR S491 Theatre Internship**

**1–3 credits (0+0+4-12) J**

Work experience where a student is employed (paid or non-paid) by a theatre organization and is under the supervision of both a qualified professional in that work environment and a theatre faculty member. Prerequisite: Admission to a program, demonstration of preparation for internship activity, or instructor permission.

### **THR S494 Theatre Practicum**

**1–3 credits (0+0+4-12) J**

Participation in drama workshop or lab production as performer or technical staff member. Three to nine hours lab per week required. Prerequisite: permission.

## **Welding Technology (WELD)**

The facilities and equipment for welding are different on each campus, which necessitates curriculum variations.

### **WELD S100 Welding Laboratory**

**1–3 credits S**

A laboratory class which may be used in a number of ways: the serious welding student to gain more welding time and/or as a chance to construct welding projects of the student's own design. May be repeated for credit.

### **WELD S104 Oxyacetylene Welding, Cutting, Brazing**

**2 credits (1+2) S**

Covers OAW fuel gases, equipment materials, processes and safety. Develops skills in welding of mild steel up to three-sixteenths in all positions, welding small diameter pipes, brazing cast iron, soldering, and manual flame cutting of various thicknesses and shapes.

### **WELD S105 Arc Welding**

**2 credits (1+2) S**

Introduces shielded metal arc welding (SMAW) power sources, electrodes, equipment distortion control, inspection, and safety. Develops skills in basic techniques, beading and padding, welding joints in flat or horizontal positions, and applications of four types of electrodes. Prerequisite: Instructor permission.

### **WELD S107 Arc Welding II**

**2 credits (1+2) S**

Covers SMAW testing, arc cutting and gouging, AWS and ASME qualification, and metal identification. Develops skill in jointing in the vertical and overhead positions, and in using 60 to 70 series electrodes. Includes certification practice. Prerequisite: WELD S105 or instructor permission.

### **WELD S108 Arc Welding III**

**2 credits (1+2) S**

Covers SMAW of nonferrous metals, cast iron, hard surfacing, and metallurgy. Develops welding skills in stainless steel, nickel rod, aluminum arc rod, and mild steel. Includes AWS and ASME certification practice. Prerequisite: WELD S107 or instructor permission.

### **WELD S120 Basic Welding**

**3 credits (1+4) J, K**

A beginning level course covering the fundamentals of oxyacetylene welding, brazing and cutting, and electric arc welding. Emphasis in flat and horizontal welding positions on mild steel using a variety of welding rods and techniques.

### **WELD S121 Arc Welding I**

**3 credits (1+4) J, K**

Arc welding techniques used for vertical and horizontal fillet welds and groove welds in all positions using AWS standard procedures. Topics include joint preparation, distortion control, fabrication practices, etc. Prerequisite: WELD S120 or competency placement.

### **WELD S122 Arc Welding II**

**3 credits (1+4) J, K**

Arc welding techniques used for all position groove weld without backup, using AWS standard procedures. Topics include welding various steels, plasma arc cutting, codes, maintenance and repair welding, etc. Prerequisite: WELD S121 or competency placement.

### **WELD S125 Welder Qualifications**

**1 credit (0+2) K, S**

Preparation for and performance of an AWS D1-1 structural steel, API 1104 pipe or ASME Sec. IX Welder Qualification Test using a prequalified welding procedure. Prerequisite: block of courses dealing with applicable code, standard, or specification.

### **WELD S130 MIG Welding**

**2 credits (1+2) S**

Introduces gas metal arc welding (GMAW) equipment, metal transfer, shielding gases, CP power source, and fluxed cored and submerged arc. Includes skill development in hard wire welding of mild steel in all positions. Prerequisite: WELD S104 and WELD S105 or instructor permission.

### **WELD S131 TIG Welding**

**2 credits (1+2) S**

Introduces gas tungsten arc welding (GTAW) equipment, weld properties of mild steel, stainless steel, and aluminum, arc characteristics, quality control, and pulsed current. Includes skill development in welding of mild steel, stainless steel, and aluminum in all positions. Prerequisite: WELD S104 and WELD S105 or instructor permission.

### **WELD S132 Pipe Welding, Uphill Techniques**

**2 credits (1+2) S**

Covers the application of pipe welding procedures, root pass methods, preheat and interpass methods, testing, and mild and stainless steel pipe. Includes skill development in SMAW up-hill techniques in the 2G, 5G and 6G positions with and without back-up rings to ASME code. Prerequisite: WELD S108 or instructor permission.

### **WELD S133 Pipe Welding, Downhill Techniques**

**2 credits (1+2) S**

Covers how to read and apply down-hill pipe welding procedures, reading the puddle, weld quality, and pipe line construction. Includes skill development in SMAW down-hill techniques in the 5G and 6G positions without back-up rings to ASME code. Prerequisite: WELD S108 or instructor permission.

### **WELD S135 Blueprints and Symbols**

**2 credits (2+0) S**

Covers how to read and interpret the engineering drawings commonly encountered by welders, including welding symbols, orthographic projection, mathematical calculations, and development of the ability to visualize weldments and assemblies from blueprints.

### **WELD S150 AWS (American Welding Society) Entry Level Welder**

**12 credits (9+3) K**

An intensive 600 hour course designed to give the student entry level skills in Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW) with mild steel and aluminum. Other topics will include plasma cutting, carbon arc gouging, manual and automatic oxy-acetylene cutting, blueprint reading, weld symbols and math for welders. The mission of our AWS Welding Certificate of Completion program is to prepare students to meet the needs of our industry. To help accomplish this, several of the UAS competencies will be addressed, one being the competency in quantitative skills and the other in critical thinking. This certificate of completion includes courses designed specifically to meet the standards set by the American Welding Society (AWS) and is designed for students to complete competencies in Entry Level and Advanced Welding.

### **WELD S151 AWS Advanced Welder (Level II)**

**12 credits (6+3+4) K**

An intensive 600 hour course designed to continue from the Entry Level Welding program to provide Advanced Welding techniques that includes joint fit-up, carbon-arc cutting and gouging, properties of metals, pre-heating and post-heating of metals, weld quality, Shielded Metal Arc Welding (SMAW), open root on steel plate and pipe, and Gas Tungsten Arc Welding (GTAW), open-root on stainless/mild steel and aluminum plate and pipe. Course will also provide a section on blue print and weld symbols. The mission of our AWS Welding Certificate of Completion program is to prepare students to meet the needs of our industry. To help accomplish this, several of the UAS competencies will be addressed, one being the competency in quantitative skills and the other in critical thinking. This certificate of completion includes courses designed specifically to meet the standards set by the American Welding Society (AWS) and is designed for students to complete competencies in Entry Level and Advanced Welding.

### **WELD S175 Selected Topics in Advanced Welding**

**3 credits (2+4) K**

Designed for advanced welders to further their skills in one or more processes and levels. Topics may include aluminum welding, sheet welding, shield metal arc welding, pipe welding, flux-core arc welding, or other to be announced. May be repeated for credit when content varies. Prerequisite: WELD S120 or instructor permission.

### **WELD S200 Metal Fabrication Laboratory**

**2 credits (0+4) S**

A course in designing, constructing, and finishing one or more projects of student's choice using at least one welding process and metal forming equipment. Prerequisite: Instructor's permission. May be repeated up to 3 times for additional elective credit.

## **Women's and Gender Studies (WGS)**

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### **WGS S201 Introduction to Women's and Gender Studies**

**3 credits (3+0) J**

Introduces students to the fundamental concepts and themes in the interdisciplinary study of women. Course focuses on understanding the institutions, social and political practices, and cultural representations that shape women's lives in both the developed and developing worlds. Prerequisite: ENGL S111.

### **WGS S499 Women's and Gender Studies Senior Project**

**3 credits (0+0+12) J**

Independent thesis or project in the student's area of interest as approved by the student's advisor. The thesis will be presented to and evaluated by a panel of WGS faculty. Prerequisite: Enrollment in the WGS minor, senior standing and permission of the instructor.