

ARCH - Architecture

ARCH 121IA Introduction to Design: 3 Credits (2 Lec, 1 Other)

PREREQUISITE: For majors and non-majors. Introduction to the design and creative process through global architecture and allied professions. Exploration of the history of design. Emphasis on 20th and 21st century architecture. Individual projects where students apply and explore creative process are required

ARCH 151RA Design Fundamentals I: 4 Credits (1 Lec, 3 Lab)

study of the creative design process with emphasis on two-dimensional design, basic three dimensional design concepts and introduction to the essential tools for graphic communication. Development of students' self-critical skills.

ARCH 152IA Design Fundamentals II: 4 Credits (1 Lec, 3 Other)

A study of the design process and methods employed by design disciplines as an introduction to architectonic principles, architectural graphic skills and further understanding of the creative process. Development of student's ability to make critical and analytical judgments.

ARCH 221 World Architecture: Modern to Contemporary: 3 Credits (3 Lec)

This course will examine the historical development of architecture from the 19th century to the present. Within an historical context, the course will focus on the impact of cultural and philosophic trends, technological changes and innovations and the globalization of the digital revolution on our built environment. Students will be introduced to seminal theoretical approaches professed by architects and thinkers of the 20th and early 21st centuries.

ARCH 223 Intro to Architectural Theory: 3 Credits (3 Lec)

Introduction to theoretical approaches advocated by architects urban designers, planners and theorists throughout history. Emphasis is placed on theoretical positions, their advocacies and their impact on architecture.

ARCH 231CS Issues in Sustainability: 3 Credits (3 Lec)

Introduction to concepts and practices intended to create more sustainable communities where present generations are accountable for the needs of future generations and the natural environment. The course will explore current multi-disciplinary practices in "ecological design".

ARCH 241 Building Construction I: 3 Credits (1 Lec, 2 Other)

PREREQUISITE: Course only open to the following majors/minor: PEVD-BA, ENVD-BA, CET-BS, MBES-MINOR, TEBD-BS, TEIT-BS, TTCH-MINOR. Introduction to the materials of construction and an overview of building construction systems. Emphasis upon an understanding of materials and systems as a means to effective and creative design utilization

ARCH 253 Architectural Design I: 5 Credits (1 Lec, 4 Lab)

PREREQUISITE: Successful Completion of ARCH 151RA and ARCH 152IA. Small-scale design projects requiring integration of spatial, visual concepts, emphasizing relationship of architecture to its context with principles of order, constituents of form, light, structural awareness, nature of materials, architectural coherency. Includes inclusive orthographic graphics design drawing conventions

ARCH 254 Architectural Design II: 5 Credits (1 Lec, 4 Lab)

PREREQUISITE: ARCH 253
Small to medium-size projects extending the development of the design process to site and adjacency analysis, diagramming, fundamental relationship to landscape and context. Topics include hybrid uses of hand and digital graphic communication including 2D and 3D drawing and modeling.

Department of Architecture.

ARCH 261 Architectural Graphics I: 3 Credits (1 Lec, 4 Lab)

PREREQUISITE: Formal admission into the environmental design program- PEVD-BA or ENVD-BA majors Fundamental techniques in architectural graphics. Course utilizes observation and design drawing studios supplemented by design drawing lecture/demonstrations sessions. Topics include freehand observation drawing and constructed multi-view, paraline, perspective and shade/shadow drawing leading towards the formal graphic presentation of architectural intentions

ARCH 262 Arch Graphics II: 3 Credits (1 Lec, 4 Lab)

PREREQUISITE: ARCH 261 Basic techniques in architectural graphic expression. Course emphasizes observation drawing studio supplemented by design drawing lecture/demonstration sessions. Topics include freehand, perspective, and shade and shadow drawing techniques. Two and three-dimensional digital applications introduced. Notebook computer required

ARCH 289R Undergraduate Research and Instruction: 1-3 Credits (1-3 Other)

classroom instruction associated with directed undergraduate research/creative activity projects. May be repeated.
Repeatable up to 99 credits.

ARCH 290R Undergraduate Research: 1-6 Credits (1-6 Other)

Directed undergraduate research/creative activity which may culminate in a written work or other creative project. Course will address responsible conduct of research. May be repeated.
Repeatable up to 99 credits.

ARCH 291 Special Topics: 1-4 Credits (1-4 Other)

PREREQUISITE: None required but some may be determined necessary by each offering department. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number
Repeatable up to 12 credits.

ARCH 292 Independent Study: 1-3 Credits (1-3 Other)

PREREQUISITE: Consent of instructor and approval of department head. Directed study and research on an individual basis
Repeatable up to 6 credits.

ARCH 294 Seminar: 1-2 Credits (1 Other)

PREREQUISITE: Determined for each offering. Topics offered at the lower division level which are not covered in regular courses. Students participate in preparing and presenting discussion material
Repeatable up to 4 credits.

ARCH 322IA World Architecture I: 3 Credits (3 Lec)

PREREQUISITE: Junior standing for non-majors, WRIT 101W or exemption from WRIT 101W per SAT or ACT Test scores. A survey of world architectural history from primitive developments to the Gothic

ARCH 323IA World Architecture II: 3 Credits (3 Lec)

PREREQUISITE: Junior standing for non-majors, WRIT 101W or exemption from WRIT 101W per SAT or ACT Test scores. A survey of world architectural history from the Renaissance to Industrial Revolution

ARCH 331 Environmental Controls I: 4 Credits (3 Lec, 1 Lab)

PREREQUISITE: ARCH 254. Analysis of climate, passive design strategies, and heat flow fundamentals. Analysis and design of basic heating, ventilating, and air-conditioning systems. Analysis and design of water supply, sanitation and vertical transportation systems. Notebook computer required

ARCH 332 Environmental Controls II: 4 Credits (3 Lec, 1 Lab)

PREREQUISITES: ARCH 331. Analysis and design of architectural lighting systems, acoustics, electrical systems, fire protection, and signal systems. Notebook computer required

ARCH 340 Building Construction II: 4 Credits (2 Lec, 4 Lab)

PREREQUISITE: ARCH 241, ARCH 343, ARCH 355 Development and integration of building materials and assemblies, construction costs and building systems into the construction documents, specifications and design of a small project. Building systems to be investigated include: structural environmental and enclosure, life safety and sustainability. Notebook computer required

ARCH 343 Architectural Structures I: 4 Credits (3 Lec, 1 Lab)

PREREQUISITE: ENVD-BA major- Formal admission into Environmental Design program. Introduction to structural design/analysis of horizontal and vertical members as applied to architectural works; basic statics, moment and shear of rigid bodies and architectural forms; strength concepts using stress and strain assessment; application of analytical and intuitive structural concepts in a design context

ARCH 344 Architectural Structures II: 4 Credits (3 Lec, 1 Other)

PREREQUISITE: ARCH 343 Understanding of design for structural elements in wood, steel, masonry, and concrete. Lateral considerations and calculations including wind, soil and seismic loads. Understanding of structural systems; building systems; diaphragms; connections; structural engineer-architect communications

ARCH 355 Architectural Design III: 5 Credits (1 Lec, 4 Lab)

PREREQUISITE: ARCH 254. Further exploration of ecologically-sound design with emphasis on the integration of structures, building envelope service systems, and building materials, including design for life safety and accessibility. Building scale and program complexity increases, utilizing long-span structural systems. Notebook computer required. Field trip required

ARCH 356 Arch Design IV: 5 Credits (1 Lec, 4 Lab)

PREREQUISITE: ARCH 355. Advanced architectural design projects integrating site analysis, programming, building systems, and contemporary design theory. Emphasis placed on the inclusive synthesis of conceptual processes, analysis preliminary design investigation, and design development. Notebook computer required

ARCH 363 Architectural Graphics III: 3 Credits (1 Lec, 2 Lab)

PREREQUISITE: ARCH 261 and ARCH 262 Advanced principles of computer-aided design and hand applications in architectural practice, including three-dimensional computer-aided design, hand and digital delineation, and presentations. Topics provide foundation for graphic applications in ARCH 354 design studio. Notebook computer required

ARCH 413 Professional Practice: 3 Credits (2 Lec, 1 Lab)

PREREQUISITE: ARCH 356 and ARCH 340. Architecture as a process by which social, economic, and environmental ideas are realized. Topics include: marketing, business planning, project management, legal issues, delivery methods, technology, regulation, ethics, accessibility, interdisciplinary relations, community relations, client relations, and trends of practice. Notebook computer required

ARCH 414 Architectural Study Abroad: 9 Credits (9 Lec)

PREREQUISITE: ARCH 356

COREQUISITE: ARCH 428. Structured study in foreign countries under the direction of an architecture faculty member to obtain an understanding of modern and historical architecture and the forces shaping them. Holistic study of urban environments combines design, urban design, architectural history, drawing, and pre-travel design and research. Itineraries include opportunities for additional destinations and independent travel

ARCH 424 Contemporary Architectural History and Theory: 3 Credits (3 Lec)

PREREQUISITE: ARCH 322IA and ARCH 323IA. Critique and discussion of architectural projects built and ideologies proposed in writings, drawings, and models during the 20th and 21st centuries as they relate to their social, cultural, technical and economic context

ARCH 425 West Architectural History: 3 Credits (3 Other)

PREREQUISITE: ARCH 322IA and ARCH 323IA. A study of events and influences that led to the development of western architectural styles, ideology, and forms of individual expression
Repeatable up to 6 credits.

ARCH 426 History of Identity of Contemporary Places: 3 Credits (3 Lec)

PREREQUISITE: ARCH 322IA and ARCH 323IA. A course in applied architectural history and theory. Lectures, discussions, and student projects investigate characteristics which convey a sense of place based on historical development, architectural styles, and urban design
Repeatable up to 6 credits.

ARCH 427 Non-Western Architectural History: 3 Credits (3 Other)

PREREQUISITE: ARCH 322IA and ARCH 323IA. A study of events and influences that led to the development of non-western architectural styles, ideology, and forms of individual expression
Repeatable up to 6 credits.

ARCH 428 Foreign Study History: 3 Credits (3 Lec)

PREREQUISITE: ARCH 356

COREQUISITE: ARCH 414. An on-site study in a foreign country of the social, cultural, and historic influences on architectural design. This course is only offered in conjunction with the foreign study program within the School of Architecture. Course shall include research on-site visits documented in an appropriate media form

ARCH 431 Sustainability in Architecture: 3 Credits (3 Lec)

PREREQUISITE: ARCH 332 and ARCH 356. Architectural and site strategies for reducing the energy footprint of structures and spaces with an emphasis on the profession's ethical responsibility and techniques that maximize the potential of active and passive design strategies to sustain our natural resources

ARCH 444 Computational Design for Structures: 3 Credits (2 Lec, 2 Lab)

PREREQUISITE: ARCH 243 and ARCH 263. Introduction to spreadsheets and computational software; spreadsheet developments for typical structural computations used in architecture; introduction to structural design/analysis software; and development of a library of computational software tools for the application of structural architectural design. Notebook computer required

ARCH 450 Community Design Center: 5 Credits (5 Lab)

PREREQUISITE: ARCH 356. The CDC assists public and non-profit groups by providing planning, programming, and conceptual design ideas. Emphasis and scope of projects are determined by the community needs. Projects are intended to complement and promote the professional practice of architecture in the State of Montana

ARCH 451 Design for Community: 1-3 Credits (1-3 Lab)

PREREQUISITE: ARCH 355. Students will be engaged in architecturally-related activities with government and non-profit agencies. This will enable students to be involved in a service learning academic experience
Repeatable up to 6 credits.

ARCH 452 Research Methods in Arch: 3 Credits (3 Lec)

PREREQUISITE: ARCH 356. Students are introduced to systematic architectural inquiry, its purpose in architectural design, the different approaches to conducting architectural research, and the major components of architectural research

ARCH 457 Architectural Design V: 5 Credits (1 Lec, 4 Lab)

PREREQUISITE: ARCH 356. Senior capstone course. Architectural design integrating building, landscape, and urban context using multi-story projects of medium scale and complexity with particular focus on mixed-use. Integrated topics include programming structural and mechanical integration, ecologically-sound design, building envelope systems and building codes

ARCH 458 Arch Design VI: 5 Credits (5 Lab)

PREREQUISITE: ARCH 356 A continuation of the holistic design synthesis encountered in ARCH 356 with emphasis on development of student's emerging design values and theoretical perspective. Field trip possible. Notebook computer required
Repeatable up to 12 credits.

ARCH 464 Intermediate Computer Applications: 3 Credits (3 Lab)

PREREQUISITE: ARCH 263 or ARCH 363. Investigation of digital design, fabrication, modeling and drawing as applied to architectural practice. Lectures and products will explore the use of 2D and 3D applications to explore design and construction processes

ARCH 465 Advanced Computer Application I: 3 Credits (3 Lab)

PREREQUISITE: ARCH 464, or consent of instructor. The investigation and application of advanced two-dimensional and three-dimensional digital application for design, modeling, and presentation techniques for architectural practice. Lectures and projects may include topics of three-dimensional modeling, animation, delineation, or digital fabrication

ARCH 471 Directed Research/Creative Act: 1-6 Credits (1-6 Other)

Directed research/creative activity which may culminate in a research paper, journal article, or design project. May be repeated.
Repeatable up to 99 credits.

ARCH 472 Directed Research/Creative Activity Instruction: 1-2 Credits (1-2 Other)

Classroom instruction associated with directed research/creative activity projects.
Repeatable up to 4 credits.

ARCH 490R Undergraduate Research: 1-6 Credits (1 Other)

Directed undergraduate research/creative activity which may culminate in a research paper, journal article, or undergraduate thesis. Course will address responsible conduct of research. May be repeated.
Repeatable up to 12 credits.

ARCH 491 Special Topics: 1-4 Credits (1-4 Lec)

PREREQUISITE: Course prerequisites as determined for each offering. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number
Repeatable up to 12 credits.

ARCH 492 Independent Study: 1-3 Credits (1-3 Other)

PREREQUISITE: Junior standing, consent of instructor, and approval of department head. Directed research and study on an individual basis
Repeatable up to 6 credits.

ARCH 494 Seminar: 1-3 Credits (1-3 Other)

PREREQUISITE: Junior standing and as determined for each offering. Topics offered at the upper division level which are not covered in regular courses. Students participate in preparing and presenting discussion material
Repeatable up to 4 credits.

ARCH 498 Architecture Residency Design Studio: 6 Credits (6 Other)

PREREQUISITE: ARCH 340, ARCH 355 and all other architectural courses through the third year. Students arrange for employment in an architectural office for a continuous period of 6 months. Students will participate in a structured work/study professional practice experience and are required to present the content of this experience upon their return to campus

ARCH 510 Leadership in Prof Practice: 3 Credits (3 Other)

This course broadens your perspective an understanding of the architect's value as it relates to different types of economics. It presents the leading edge of traditional practice, alternative opportunities, and civic engagement that utilize the architect's skill set.

ARCH 519 Synthesis of Arch Practice: 3 Credits (3 Other)

PREREQUISITE: MSEM 501, ARCH 510. This capstone will synthesize the learning acquired in previous courses to culminate in development of a transformative business plan for the student's office. The focus: Research in design milieu; Development of thesis; Evaluative strategies for measuring success; Total cost accountability

ARCH 521 Arch Theory: 3 Credits (3 Other)

PREREQUISITE: Graduate standing or seniors by petition. Specific architectural, urban, planning and preservation theories, their application and context within contemporary practice will be investigated through the study of essays, drawings, models and built projects. May be repeated
Repeatable up to 9 credits.

ARCH 522 Historical Issues in Arch: 3 Credits (3 Other)

PREREQUISITE: Graduate standing or seniors by petition. Close examination of historic periods and individuals. Emphasis upon in-depth studies of particular personalities and the social, cultural, artistic and scientific developments that influenced the progress of architecture, urban design and city planning. May be repeated
Repeatable up to 99 credits.

ARCH 523 Issues in City Planning: 3 Credits (3 Other)

PREREQUISITE: Graduate standing or seniors by petition. Problems and issues, processes and regulations in planning, urban design, and historic preservation. Field trip possible

ARCH 524 Design Competition: 3 Credits (3 Other)

PREREQUISITE: Graduate standing or seniors by petition. Students will work under the direction of a faculty member in the research, design, development and presentation of a project in response to a design competition
Repeatable up to 6 credits.

ARCH 525 Special Design Topic: 3 Credits (3 Other)

PREREQUISITE: Graduate standing or seniors by petition. Students will work under the direction of a faculty member in the research, design, development and presentation of a design, research, or historic preservation project. May be repeated as topics vary
Repeatable up to 12 credits.

ARCH 526 Advanced Architectural Theory: 3 Credits (3 Lec)

PREREQUISITE: Graduate Standing
COREQUISITE: ARCH 558, ARCH 535
This course focuses on the critique and discussion of current architectural projects built and ideology proposed in writings, drawings and model including historic traditions and the simultaneous global, social, and technical context, in order to examine current architectural issues. To be taken concurrently with ARCH 558 by new Graduate students.

ARCH 527 Architecture: Meaning & Place: 3 Credits (3 Other)

PREREQUISITE: Graduate standing or Seniors by petition
Close examination of the psychological, existential and traditional meaning and consequential sense of place in our natural and built environment.
Repeatable up to 9 credits.

ARCH 528 Advanced Studies in Interior Design: 3 Credits (3 Other)

PREREQUISITE: Graduate standing or Seniors by petition
Exploration of topics related to interior design including theory and application of the principles of interior design.

ARCH 533 Adv Environmental Controls: 3 Credits (3 Lec)

PREREQUISITE: Graduate standing or seniors by petition. Advanced environmental control systems explored through experimental exercises, calculations, physical modeling and computer simulations with the goal of designing a high-performance buildings with an emphasis on lighting and HVAC systems. Notebook computer required

ARCH 535 Adv Bldg Sys Integration: 1-3 Credits (2 Lec, 1 Lab)

PREREQUISITE: Graduate standing

COREQUISITE: ARCH 558

Classroom instruction leading to a demonstrated understanding and integration of environmental, structural, building envelope, building service, building materials and assembly systems in a comprehensive studio design project. To be taken concurrently with ARCH 558 by new graduate students.

Department of Architecture.

ARCH 543 Advanced Applied Design and Construction: 3 Credits (3 Lab)

PREREQUISITE: Graduate standing or Seniors by petition. Small scale projects industrial products, furniture, buildings, etc., will be designed and built by students as an exploration of the opportunities and limitations of materials, technology, economics, and construction methods Repeatable up to 6 credits.

ARCH 545 Advanced Structures: 3 Credits (3 Other)

PREREQUISITE: ARCH 244 or ARCH 344 and graduate standing or seniors by petition. Advanced structural topics, historical and contemporary structural precedents, load path, performance design, structural LLEC 2system planning, connection design; structural restoration; complete 2D and 3D design/analysis/structural projects

ARCH 551 Advanced Arch Studio: 6 Credits (6 Lab)

PREREQUISITE: Graduate Standing. Design projects which explore specific critical positions with regard to contemporary architectural issues. Research and analysis of theoretical positions are emphasized along with the development of contemporary methods and techniques for analysis. Field trip required

ARCH 552 Arch Research Methods: 3 Credits (3 Other)

PREREQUISITE: Graduate standing or seniors by petition. An examination of the types of inquiry used to conduct architectural research. Students will engage in initial studies of traditional and non-traditional research methods in architecture and its related fields followed by an individual research project

ARCH 553 Architectural Studio - Theoretical Application: 3 Credits (1 Lec, 2 Other)

PREREQUISITE: Graduate standing. Graduate research and analysis of the formal manifestations of the specific theoretical positions advocated and illustrated through the design work of significant architectural practitioners. Notebook computer required

ARCH 554 Urban Design Studio: 6 Credits (8 Lab, 2 Other)

PREREQUISITE: Graduate standing. Urban design projects that develop an understanding of public planning goals and constraints, urban infrastructure, formal urban fabric, historic preservation, and socio-cultural issues. Notebook computer required. Field trip required

ARCH 555 Urban Design Research/Theory: 3 Credits (3 Lec)

PREREQUISITE: Graduate standing. Methods, models, and techniques for analyzing the city as an artifact of social, cultural, historical, economic and physical significance. Notebook computer required. Field trip required

ARCH 556 Construction Theory: 3 Credits (3 Other)

PREREQUISITE: Graduate standing. Graduate research and analysis of contemporary and historic design theory. Notebook computer required. Field trip required Repeatable up to 99 credits.

ARCH 557 Architectural Design Studio: 6 Credits (8 Lab, 2 Other)

PREREQUISITE: Graduate standing. Advanced architectural design projects integrating site analysis, programming, building systems, and contemporary design theory. Emphasis placed on the synthesis of conceptual processes, analysis, preliminary design investigation, and design development. Field Trip required

ARCH 558 Comprehensive Design Studio: 6 Credits (6 Lab)

PREREQUISITE: Graduate Standing

COREQUISITE: ARCH 535. Comprehensive architectural studio which integrated design thinking and investigative skills with site design, accessibility and life safety, sustainability and environmental, and structural systems in the design and presentation of a programmatically complex building

ARCH 560 Masters Studio Project: 4 Credits (4 Lab)

PREREQUISITE: ARCH 575 with grade of B or better, and ARCH 577

COREQUISITE: ARCH 561

Architectural design project that builds upon prior research investigations with an emphasis placed on analysis, synthesis, evaluation and development of a design solution from conceptual design through schematic/design development.

ARCH 561 Design Critique for Master's Studio Project: 2 Credits (1 Lab, 1 Other)

PREREQUISITES: ARCH 575 with grade of B or better, and ARCH 577

COREQUISITE: ARCH 560. ARCH 561 is a 2 unit credit taken simultaneously with ARCH 560 as part of the independent professional project. 560/561 are courses that compose a two-semester independent research project. ARCH 575/576, the first semester, focuses on research and writing to establish an intellectual framework for architectural space, process, or thought. ARCH 560/561, the second semester, is used to realize a design project that demonstrates critical architectural thinking at a level appropriate to the Master of Architecture first professional degree. Students will take 2 units of 561 with their Critic while taking 4 units of 560 with their advisor

ARCH 564 Adv Arch Graphics: 3 Credits (6 Lab)

PREREQUISITE: Graduate Standing or Seniors by petition. Advanced architectural presentation strategies for exploring visual perception and design development through graphic exploration. May be taken more than once as topics vary Repeatable up to 99 credits.

ARCH 565 Advanced Computer Applications II: 3 Credits (3 Other)

PREREQUISITE: Graduate standing or Seniors by petition. Computer-aided design and theory for architecture. Lectures and projects may include topics of three-dimensional modeling, animation, delineation or digital fabrication

ARCH 566 Photography for Architects: 3 Credits (3 Other)

PREREQUISITE: Graduate Standing or Seniors by petition

Theory and application of the principles of photography as a means to view and interpret the built and natural environment from the perspective of an allied art.

Department of Architecture.

ARCH 575 Professional Paper: 1-4 Credits (1-4 Other)

PREREQUISITE: Graduate Standing

Research or professional paper/project dealing with a topic in the field. Topic must be mutually agreed upon by the student and their major advisor and graduate committee. This course is required for students in Architecture non-thesis (plan B) master's degree program.

Department of Architecture.

Repeatable up to 4 credits.

ARCH 577 Reader Critique for Professional Paper: 1 Credits (1 Other)

PREREQUISITES: ARCH 558, ARCH 535 and completion of School of Architecture Master's Studio Project

COREQUISITE: ARCH 575. Research for professional paper/project dealing with a topic in the field. Professional paper will be evaluated by a committee chair via ARCH 575 and critiqued by a faculty reader via ARCH 577

ARCH 589 Graduate Consultation: 1-3 Credits (1-3 Other)

PREREQUISITE: Master's standing and approval of the Dean of Graduate Studies. This course may be used only by students who have completed all of their course work but who need additional faculty or staff time or help Repeatable up to 3 credits.

ARCH 590 Master's Thesis: 1-10 Credits (1-10 Other)

PREREQUISITE: Master's standing
Repeatable up to 99 credits.

ARCH 591 Special Topics: 1-4 Credits (1-4 Lec)

PREREQUISITE: Graduate standing or seniors by petition. Course prerequisites as determined for each offering. Courses for which there is a particular one time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number Repeatable up to 12 credits.

ARCH 592 Independent Study: 1-4 Credits (1-4 Other)

PREREQUISITE: Admission to graduate program. Directed graduate research and study of architectural, urban design or historic preservation issues on an individual basis Repeatable up to 8 credits.

ARCH 594 Seminar: 1 Credits (1 Other)

PREREQUISITE: Graduate standing or seniors by petition. Course prerequisites as determined for each offering. Topics offered at the graduate level which are not covered in regular courses. Students participate in preparing and presenting discussion material Repeatable up to 4 credits.