Serve. Protect. Restore.

AU SABLE INSTITUTE

ausable.org

2024 Official Bulletin

Great Lakes – Pacific Rim – Costa Rica – Online

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Au Sable Institute is a not-for-profit 501(c) (3) institution under the U.S. Internal Revenue code and as such is eligible to receive tax-deductible contributions for its operations and programs. The Institute welcomes gifts from any who wish to support the fulfillment of its mission or the conduct of specific projects or programs.

COURSE OFFERINGS 2024

	MAY SESSION May 20 - June 7 3 weeks	SUMMER SESSION I June 10-July 12 5 Weeks	SUMMER SESSION II July 15- August 16 5 Weeks
Great Lakes	Field Biology in Spring Forest Management Insect Ecology Field Geology in Michigan Integration Day (M-all students)	Conservation Biology (Tu, Th) Field Botany (Tu, Th) Animal Ecology (Tu, Th) Agroecology (W, F) Aquatic Biology (W, F) Field Techniques in Wetlands (W, F) Research Methods I (by arrangement) Integration Day (M-all students)	Environmental Applications for GIS (Tu, Th) Stream Ecology (Tu, Th) Wildlife Ecology (Tu, Th) Environmental Chemistry (W, F) Restoration Ecology (W, F) Fish Ecology and Management (W, F) Research Methods II (by arrangement) Integration Day (M-all students)
Pacific Rim	Marine Invertebrates (*May 27 – June 14 at Rosario Beach Marine Lab)		Marine Biology (M, Th) International Development & Environmental Sustainability (M, Th) Alpine Ecology (Tu, F) Marine Mammals (Tu, F) Integration Day (W-all students)
Online	Environmental Law and Policy	Geographical Information Systems (GIS)	Ecological Analysis in R
Costa Rica	Sustainability, Tropical Agriculture & Development		

OVERVIEW

Purpose and Setting. Au Sable Institute inspires and educates people to serve, protect, and restore God's earth. It achieves this purpose through academic programs for college and university students; research studies and conferences; environmental education internships; retreats for churches and community groups; environmental information services for faith-based institutions, local governments, and environmental organizations and agencies; and by building a mutually supportive community of alumni and constituents engaged in the work of serving, protecting, and restoring creation. Supported by the natural settings of the US Great Lakes forests of northern Michigan, the Puget Sound in the US Pacific Northwest, and the cloud rainforest of Costa Rica, participants take courses, engage in scholarship, gain field experience, confer with students and faculty, and develop practical tools for environmental stewardship in programs that emphasize science, faith, and practical applications.

Vocation and Professional Certificates. To achieve the full vocational benefits of study at the Institute, students are encouraged to complete an integrated program leading to an official Institute Certificate (pages 22-25). Students pursuing certificates are given preference on course selection, fellowships, and financial aid.

Courses. Au Sable offers 22 field courses at its three campuses for the 2024 academic year along with two online courses. Courses are open to undergraduates, graduates, and other qualified individuals through our Partner Colleges. Each course is taught by a highly qualified professor in their area of expertise. Courses are four credits with the exceptions of Research Methods I and Research Methods II, which are two credits each. Students can sign up for one course during the three-week session in May and for two courses during the five-week Summer Sessions. Course descriptions begin on page 16.

Student Life. Au Sable is a community based upon Christian teachings and practices, working and worshiping together as it seeks to bring wholeness and restoration to the creation. Class periods begin with devotions, and biblical principles are integrated into the understanding and application of all subjects. Students and faculty families participate in Sunday vespers services, and students are encouraged to worship regularly in churches of their choice near campus. Recreation includes wildlife observation, nature study, wildland and tide pool exploration, hiking, fishing, kayaking and canoeing, volleyball, pickleball, soccer, frisbee, trail running, swimming, and snorkeling.

Relation to the Home College, University, or Seminary. Students enrolled in the Institute remain students at their home institution. Most enroll through accredited Partner Colleges who manage admission to Institute courses and programs, award college credit, and collect tuition and fees (see page 30 for a list of Partner Colleges). Individuals also may enroll through public and private colleges, universities, and seminaries by arrangement with the Institute.

Course Tuition and Fees. Au Sable charges a uniform tuition rate of US $2950 per 4-credit course. Site fees are charged for room, board, local transportation, and site-specific costs that vary depending on program location and session. Transportation to and from the campus session are the responsibility of the student. See page 11 for details.

Facilities. Au Sable-Great Lakes is located on Big Twin Lake, a glacial kettle lake in northern Michigan. Au Sable- Pacific Rim is located on Whidbey Island between Vancouver, British Columbia and Seattle, Washington. Au Sable-Costa Rica is located on the campus of Association for Development through Education (ADE) in the cloud rainforest of Vara Blanca, Costa Rica.

Undergraduate Research Participation. The Institute offers a summer program in research for selected undergraduates at its Great Lakes campus. See details on page 27.

International programs. Au Sable-Costa Rica in Vara Blanca, Costa Rica, is located on the campus of the Association for Development through Education (ADE), a partner organization sustained through educational initiatives, committed to the sustainable development of marginalized communities using education and the resources of each community for their own growth. The Au Sable - Costa Rica course, *Sustainability, Tropical Agriculture and Development,* studies tropical environments and includes practical work in sustainability and agriculture.

MISSION

Institute Philosophy. At Au Sable, we believe Christians should be leading the way in solving the earth's toughest environmental challenges. Through hands-on learning in the outdoors, engaging professors who integrate faith into their instruction, and a supportive community of friends, we inspire and educate students to serve, protect and restore God's earth.

The basis for the mission of Au Sable Institute is the Bible as the foundational authority for Christian faith and practice. The board, faculty, and staff confess that God is exclusive owner of all and that human beings are trustees of that over which they have responsibility. The task and responsibility of human beings is to serve and protect creation (Genesis 2:15) through our care for the Earth and its creatures. Such service and protection require ecological knowledge and environmental awareness to achieve accurate understanding of the interrelationships between living creatures and their environments, as well as the nature and impacts of their use by human beings. Stewards of the creation must have knowledge and skills for acting responsibly in sustaining, renewing, and preserving the creation and its rich diversity.

Mission of the Institute. *Au Sable Institute inspires and educates people to serve, protect, and restore God's earth.* The Institute integrates knowledge of the creation with biblical principles for the purpose of bringing the Christian community and the general public to a better understanding of the Creator and the best means of serving and protecting the Earth. All of its programs and activities are conducted toward this end. This includes persistent dedication to exemplary Christian stewardship in the Institute's planning, operations, programs, and outreach.

Role of the Institute in the Church and Society. Au Sable Institute is a Christian professional and vocational institution of higher education complementary to colleges and universities. It provides education directed toward attainment of (1) integrated ecological knowledge, (2) proficiency in the use of tools for knowledgeable stewardship of the creation, and (3) professional integration of biblical principles with this knowledge and proficiency. The educational service of the Institute is supportive of evangelical Christian colleges, the broader worldwide Christian community, the local environs of the Institute, and society at large.

In performing its professional and vocational role, the Institute offers (1) courses and programs in environmental stewardship for evangelical Christian colleges, universities, and seminaries; (2) courses and programs for all college and university students with professional, vocational or academic interests in developing an understanding of Christian environmental stewardship; (3) environmental education, information, primary research and analytical services to school systems, community groups, non-profit organizations, local residents and their communities and governmental agencies; (4) services to evangelical Christian colleges to nurture and develop their environmental curricula and stewardship goals; and (5) cooperation with and assistance to churches and denominations, educational institutions, and environmental stewardship organizations in responding to environmental issues in a manner consistent with the proper care, keeping, and restoration of creation.

As a professional institution, Au Sable operates with the conviction that everything done by the Institute, its students, and alumni expresses what and who we are. Thus, in its teaching and learning, its buildings and grounds, its ecosystem and land stewardship, its research and societal relationships, the Institute professes awareness and knowledge of the creation, the meaning of environmental stewardship, the vitality and spirit of Christian community and the caring management of entrusted life and resources. As a vocational institution, Au Sable Institute operates from the conviction that God's will must be actively pursued and intelligently discerned in the service and protection of God's creation. Selection of the work to be done must be in full response to God's will and calling. The Institute provides a means whereby one can seek God's will in the world, particularly as it relates to God's call to serve and protect the Earth. The Institute recognizes those who have attained the necessary knowledge and skills by granting professional and vocational certificates, and by enabling qualified students to gain additional certificates from other agencies and organizations.

GEOGRAPHIC SETTINGS

Au Sable Institute offers courses at three locations: in the Great Lakes Forest of north-central United States; on Puget Sound at the edge of the Pacific Ocean between Vancouver, British Columbia and Seattle, Washington; and in the heart of the Central American rainforest in Costa Rica.

Au Sable-Great Lakes is located in the Northwoods of Michigan's Lower Peninsula, about 80 miles southwest of the Straits of Mackinac and 40 miles east of Traverse City. Surrounded by tens of thousands of acres of forests, Au Sable- Great Lakes includes frontage on a 215-acre lake and an adjoining 200 acres of northern hardwoods and conifer forests. Environmental resources in the vicinity of Au Sable-Great Lakes are abundant and diverse. Pristine river systems, including a wild and scenic river, the Jordan, approximately 900 lakes and ponds in the local four county region, 80 bogs in the local twelve-township area, diverse forest ecosystems, three Great Lakes, various sand dune communities, varied climatic and topographic features, and diverse flora and fauna contribute to unique educational and research opportunities in this setting. Of particular significance are Sleeping Bear Dunes National Lakeshore, Hartwick Pines and Wilderness State Parks, Lake Skegemog Wildlife Area, Grass River Natural Area, the Jordan, Manistee, Au Sable, Boardman, and Rapid Rivers, and the Jordan River National Fish Hatchery. The climate is typical of north-temperate regions, although the Great Lakes temper extremes. Summer days are usually mild and sunny, followed by cool evenings. Snow dominates the winter landscape from December through March in most years.

Au Sable-Pacific Rim is located on Whidbey Island in the Puget Sound, the mid-point between Vancouver, British Columbia and Seattle, Washington. The Olympic Mountain Range lies to the west and a marine estuary to the east. Nearby, tide pools display an array of sea life at low tide and coastal cliffs rise along the eastern boundary of the Pacific Ocean. Orca whales and harbor seals, flocks of shore birds, abundant marine invertebrates, diverse sea plants, and scores of bald eagles are among the myriad of creatures that can be observed in the region. Environmental resources in the region are varied. From the forest to the sea, from desert to rain forest, from sea level to mountain heights there is overwhelmingly wondrous life. Of particular significance are Olympic National Park, Ebey's Landing National Historical Reserve, North Cascades National Park, and numerous marine laboratories surrounding Puget Sound. The climate at Au Sable-Pacific Rim is one of 18 inches annual rainfall, comfortable temperatures, and pleasant ocean breezes. Summer conditions are excellent for conducting work in the field.

Au Sable-Costa Rica is located on the campus of the Association for Development through Education (ADE) in the Vara Blanca region of Costa Rica. ADE is a Christian non-profit organization funded through educational initiatives, committed to the sustainable development of marginalized communities using education and the resources of each community for their own growth. It offers innovative and holistic educational programs that support long- term sustainable capacity building activities among individuals, local community organizations, government agencies, and the local faith community. The biodiversity found in Costa Rica is unparalleled. The ADE Educational Center is located in the heart of a cloud rainforest along one of Costa Rica's most biologically diverse river systems, the headwaters of the Sarapiqui River.



INSTITUTE LIFE

The Au Sable Community. Life at Au Sable is that of a supportive Christian academic community. Students, staff, faculty, and families share in learning, recreation, and worship. Each course is itself an integrated whole of learning, devotions, recreation, and applications of biblical principles to guide scientific knowledge and technical skills to their highest and best ends in creation care. Students and faculty meet weekly in a common integration day engaging with experts in stewardship and service-learning. The courses, taken together with individual devotions, study, and community activities, form the integrated whole that is Au Sable.

Faculty-student interaction is an important and distinctive feature of education at Au Sable. Faculty often assist students with their studies outside of class, work with them in research, and join them for meals, recreation and vespers services. Together they explore and share the order and wonder of the natural world as fellow believers excited and awed by a creation that proclaims the glory of God. When they observe the creation abused, faculty and students seek opportunities and means to redeem degraded environments.

Student Conduct. While extending the privilege of admission to all irrespective of creed, denomination, race, color, or national origin, the Institute expects students to conduct themselves both on and off Institute grounds in accordance with biblical principles, with the rules of conduct detailed by the home institution through which they enroll and by the Institute's Statement of Community Aspirations and Expectations. Au Sable expects all students to pursue behavior which at all times contributes toward the mutual upbuilding of the Christian community (Romans 14:19, 15:2). Consistent with its focus on stewardship, beginning with the care of one's own body, the Institute does not permit the use or possession of tobacco and marijuana products, drugs, or alcohol on Institute grounds or in its facilities.

Weekly Schedule. Students are encouraged to attend a local church during their studies at Au Sable. On campus, the Au Sable week begins with the weekly Sunday evening vespers worship services held at the Institute. The Institute's classes then normally meet from 8:30 am to 4:30 pm Monday through Friday on all campuses, with occasional exceptions for longer daily or weekend field trips. Each academic week includes Integration Days, complementary to course content, focusing on Christian environmental stewardship. Integration Day material is covered in class discussions, assignments, and examinations, and participation in Integration Days and completion of associated assignments contributes to a student's final grade in every course.

Attendance and participation at Integration Days and Vespers services is a condition of enrollment and expected of all students.

Worship and Fellowship. The institute provides opportunities for worship and fellowship with various churches in the area, and coordinates or provides necessary transportation. Participation in Sunday evening worship services (Vespers) is often coordinated with course faculty and fellow students. Attendance at Vespers is required of all students.

Integration Days. All courses meet together weekly for an Integration Day which is dedicated to the integration of the various course disciplines currently being taught and the integration of these with Christian faith and earthkeeping. As part of these days, faculty and staff work cooperatively to develop and conduct interdisciplinary learning experiences, service, and field trips in which all courses and students participate. Integration Days are focused on a particular theme, environmental problem, or issue. These days include devotional opportunities and time for reflection on themes of Christian environmental stewardship and relationship with our Creator. In addition to Integration Days, courses often engage in at least one cooperative project or field trip with another complementary course. Attendance at Integration Day is a required component of each course for all students.

PARTNERSHIPS

Au Sable Institute operates as a service to colleges and universities, churches and denominations, and organizations and agencies in partnership with them. The longest standing partnerships are with the Partner Colleges and Universities, with whom the Institute works to provide courses, research opportunities, and certificate programs that assist these institutions and their students in achieving a comprehensive curriculum in environmental stewardship. Courses taken at Au Sable are treated as the college or university's own courses, not as transfer credits. At its Great Lakes Campus, the Institute provides educational and research settings for undergraduate and post- graduate students and faculty for these partners for the purpose of enhancing opportunities to teach, learn, and practice how to care for creation. At other sites, the Institute's partnerships include sharing of facilities and cooperative programs. For many of these partners, facilities for teaching, research, and stewardship practice belong to them and are shared with us and our students and faculty. Au Sable's partnerships include:

Christian Colleges and Universities. Over fifty Partner Colleges and Universities work with Au Sable throughout the US and Canada. Under the terms of a Participation Agreement, faculty and students from Partner Colleges engage in a vibrant and productive community of teaching and learning.

Sustaining Partners. Sustaining Partner Institutions provide essential financial support to Au Sable in recognition of the value of Au Sable courses to their own college curricula. Students attending Sustaining Partner Institutions are eligible for additional financial support and opportunities from Au Sable.

Northwest Lower Michigan School Systems. Au Sable Institute delivers environmental education programs to local schools that provide students and teachers with direct experiences in nature that compliment classroom learning and build a greater appreciation for the environment. During our 42-year history, we have served over 140,000 students making us one of the most successful and longest running environmental education programs in northern Michigan.

Association for Development through Education. Our Partner in Costa Rica, Association for Development through Education (ADE) is a Christian non-profit organization funded through educational initiatives, committed to the sustainable development of marginalized communities using education and the resources of each community for their own growth. ADE offers innovative educational initiatives that support long-term sustainable capacity building activities among individuals, local community organizations, government agencies, and the local faith community.

Au Sable Academic Council (AAC). The Institute is advised on academic matters and academic standards by the Au Sable Academic Council, a body consisting of one Au Sable Faculty Representative from each of the Partner Colleges which meets biannually (in person at Au Sable's Great Lakes Campus the last Friday-Saturday of September and online in March). Current faculty representatives are listed on page 30. Observers from colleges, universities and seminaries who are considering application for partner status are encouraged to attend the AAC.

APPLICATION PROCEDURE AND ACADEMIC STANDARDS

Eligibility. Admission to all Institute programs is a privilege extended to all regardless of creed, denomination, race, color, or national origin. Regardless of cultural, racial, national, or denominational differences, students who come to Au Sable should share a common aspiration of wanting to learn in and from a community of Christians engaged in serving, protecting, and restoring God's earth, and should be prepared to participate fully in Au Sable community life.

Application for Admission. Interested students are encouraged to apply for admission through the Institute's website, www.ausable.org. Current students at our partner colleges are eligible for admission upon submitting the admission application online and receiving approval from their Au Sable Faculty Representative and the Institute. Applications from students at colleges not formally affiliated with Au Sable are welcomed and will be reviewed for admission. Such students should contact the Au Sable Admissions Office to learn how the course credits they earn at Au Sable can be transferred to their home institutions.

Course Enrollment. Students may apply to enroll for courses online at www.ausable.org. A non-refundable Application Fee of US $30 must be paid with the application (by check/debit/credit card). This application fee is waived for students applying prior to December 1 of each year. Students will then complete registration online. Using the online platform, Populi, students will initiate registration approval forms being sent to the office of the Registrar and Off-campus Study/Study at the student's home campus. These forms must be completed by each office at the student's home institution before they can officially enroll in each course. Upon enrollment with the Institute, a tuition deposit of US $200 for each course must be received within 14 days in order to reserve a seat. Tuition deposits are applied to the student's account at the time of final billing. Enrollments are subject to cancellation until this deposit is received. If a student withdraws within 30 days of enrollment and paid tuition deposit, tuition deposits will be refunded to the student within 30 days after date of withdrawal. Tuition deposits are not refunded if withdrawal is more than 30 days after enrollment.

ACADEMIC STANDARDS AND RECORDS

Grading System. Grades are designated by letters A, excellent; B, good; C, average; D, just passing; and F, failure. The following numeric values (grade points) are assigned to each of these letter grades: A, four points; B, three points; C, two points; D, one point. Plus grades are computed at three-tenths of a point above these figures and minus grades at three-tenths below these figures.

Percentage	Grade	Percentage	Grade	Percentage	Grade
(≥ 94)	A	(≥ 80, < 84)	B –	(≥ 67, < 70)	D +
(≥ 90, < 94)	A –	(≥ 77, < 80)	C +	(≥ 64, < 67)	D
(≥ 87, < 90)	B +	(≥ 74, < 77)	C	(≥ 60, < 64)	D –
(≥ 84, < 87)	B	(≥ 70, < 74)	C –	(< 60)	F

A grade of W will be recorded for courses students who leave for any reason with the written approval of their instructor and the Director of College Programs before the end of the period when 60% of the course is complete. Students who discontinue classes without notification or permission or after 60% of the course is complete will receive the grade of F. A student may repeat a course, but only the most recent grade will be used to compute the grade point average for courses taken at the Institute. Such grades are entered on the Institute records preceded by the letter R.

In the event a student fails to complete all required work for a course or fails to take the final examination, the instructor may, if the student's reasons are considered valid, grant a grade of I (incomplete) rather than an F. All remaining expectations for the course must be completed within a timeframe determined in consultation with the professor, not to exceed 3 months after the final examination. If the student does not meet the remaining expectations to the satisfaction of the instructor, the grade is changed to an F. If, due to extended illness, the 3-month deadline cannot be met, an extension may be given by the Director of College Programs in consultation with the course faculty if requested by the student in writing at least one week prior to the deadline. Appeal of a final grade may be made to the Director of College Programs.

Audit. Students may elect to audit a course with the approval of the instructor and Director of College Programs. Students auditing a course are expected to attend all class meetings, including Integration Days, and participate fully in course

activities. Tests and assignments may be completed by the student for evaluation but are not required. An academic transcript will be issued directly to the student, but no credit will be earned. A change in registration from audit-to-credit or credit-to-audit must be completed before the end of the first week of classes. Auditing students pay 50% of normal tuition at the Great Lakes campus and do not qualify for additional financial aid. Students auditing courses at Pacific Rim and Costa Rica pay normal tuition.

Student Rights and Records. At the conclusion of each session, students may view their grades at ausable.populiweb.com under "Student." Official transcripts of grades, for all students in good academic and financial standing, will be sent to the registrar of the home college. Transcripts will not be released to any party without approval of the student in accordance with the Family Educational Rights and Privacy Act of 1974.

Standards for Course Offerings. Each course offered by the Institute, in addition to having to meet Institute standards, is an approved offering of at least one accredited four-year Christian liberal arts college among Au Sable's family of Partner Colleges and Universities. The Institute is licensed by the State of Michigan as a proprietary post-secondary school.

Awarding Certificates. Students working toward a certificate from the Institute must file a formal certificate application no later than the beginning of the semester in which they expect to graduate from their home institution. The Institute will identify undergraduates who qualify for Institute certificates to the home college so that they may then recognize them at graduation ceremonies, indicate their certificate on the college transcript or otherwise recognize or announce this achievement according to college policies. Post-graduates and graduate students should file a formal certificate application no later than the beginning of their final academic session at the Institute.

Complaints. Students desiring to file a complaint with the State of Michigan for any violation of P.A. 148 of 1943, as amended, governing proprietary schools may do so by first reviewing instructions available at https://www.michigan.gov/leo/-/media/Project/Websites/leo/Documents/WD/Programs_Services/PSS/Post-Secondary_Complaint_Instructions_FINAL_08172023.pdf?rev=fabcd847affa4ccc97e1d70af8cd280c&hash=C73147436111AB986CBE49019BB152BE.

COSTS

Tuition: Tuition is normally paid by students to their home college for all courses taken at the Institute. Au Sable charges a uniform tuition rate of US $2950 per 4-credit course, regardless of credit granted by the student's home institution. Courses taken at Au Sable Institute are usually listed on student transcripts as courses offered by the home institution and are automatically accepted by all of Au Sable's Partner Colleges and Universities.

Upon enrollment with the Institute, a tuition deposit of US $200 for each course must be received within 14 days in order to reserve space in each course. Tuition deposits are applied to the student's account and students are typically billed by the home Institution in April.

Site Fees. Site fees are charged for room, board, local course transportation, and site-specific costs associated with each program location and session. Online courses do not have any site fees.

Rates in 2024 for each session and location are:

May Session - Costa Rica: US $725 per week
May Session - Great Lakes: US $480 per week
May Session - Pacific Rim: US $725 per week
Summer Session I - Great Lakes: US $480 per week
Summer Session II - Great Lakes: US $480 per week
Summer Session II - Pacific Rim: US $725 per week

Students not from Partner Colleges may arrange payment through one of the Partner Colleges or make payment directly to the Institute. Contact the Au Sable Admissions Office for assistance. Application fees and tuition deposits can be paid online or over the phone with VISA/Master Card/Discover. The Au Sable Office is closed on federal holidays and weekends.

Other Expenses: Students should plan on approximately US $120-180 per course for textbooks and supplies. Travel to the session sites in Michigan, Washington, and Costa Rica is the financial responsibility of the student.

Refunds: After 30 business days from enrollment, tuition deposits are non-refundable unless the applicant is rejected. If a student withdraws within 30 days of enrollment, deposits will be refunded within 30 days of withdrawal. Deposits more than 30 days after enrollment are not refundable.

Withdrawals or drops after the start of class will be refunded as follows. After one class day (i.e. 10% of class time), 50% of tuition and site fees will be refunded; after two class days (20% of class time), 25% of tuition and site fees will be refunded. After the second day of class, no refunds will be made. Scholarship, grants, and other financial aid award amounts will be adjusted on a prorated basis for drops and withdrawals. Withdrawals for documented health reasons will be handled on a case-by-case basis.

International/Canadian Students: Please work closely with the Au Sable Admissions Office to ensure correct processing of payments and I-20 documentation. International students from countries other than Canada will need to obtain a M-1 visa before departing for Au Sable. Canadian students will receive their M-1 visa at the border at the time of entry into the United States.

Canadian students may make application and tuition deposit payments by check, but the payments by check MUST be made in U.S. funds if they are drawn on a Canadian bank.

Full tuition and site fee payments MUST be made in US funds.

FINANCIAL AID

To assist students in meeting the cost of tuition, Au Sable Institute, through the support of its generous donors, provides financial aid outlined below. Financial aid is available until all funds are disbursed or until April 1st, whichever comes first. Exceptions to this deadline are the Sustaining Partner Grants and Honors Alumni Scholarships which are awarded regardless of application date.

Honors Alumni Scholarship. Honors Alumni Scholarships are granted to Institute alumni who have achieved at least a 3.0 GPA in their prior Au Sable courses. It is an automatic grant of US $300 per four-credit course. Recipients of the Au Sable Honors Alumni Scholarship may also qualify for additional financial assistance.
Deadline: None.

Au Sable Grants. Grants are provided for students who have demonstrated financial need above and beyond other aid provided by the Institute. Grant amounts are determined by financial need, the cost of attendance as determined by any other financial aid awarded to the student, and date of application.
Deadline. Students must apply for admission prior to April 15 for full consideration for Au Sable Grants. Additional need-based grants may be applied for if students are requesting more aid than what was initially provided at the time of application.

Au Sable Academic Scholar Awards. When completing the general application to Au Sable, students may choose to be considered for Au Sable Academic Scholar Awards that recognize their outstanding academic achievements and leadership potential based on their home college grade point average (GPA), financial need, and the recommendation of their Faculty Representative. Academic Scholar Awards are provided upon acceptance to the Institute according to the following levels (based on a 4.0 scale GPA):

GPA > 3.79 receive US $450 per 4-credit course
GPA = 3.00 to 3.79 receive US $175 per 4-credit course

Students will be awarded this support based on their Au Sable application for enrollment, which includes a recommendation from your Faculty Representative, submission of the most recent college transcript, and a copy of the Student Aid Report from FAFSA. Academic Scholars are also eligible and encouraged to apply for additional financial aid as applicable to their interests and qualifications.
Deadline. Students must apply for admission prior to April 15 to be eligible for Academic Scholar Awards.

Missionary Earthkeeping Fellowship. Missionary Earthkeeping Fellowships are awarded to qualified students demonstrating vocational commitment to a career in missions and application of environmental knowledge and skill in missionary efforts. This fellowship provides US $500 per course. Students must be recommended by the Au Sable Representative from their campus. Application materials include a vocational statement that confirms a dedication to a career in missions, an academic transcript, a resume, and letters of recommendation from a missions professional attesting to the student's commitment to a career in missions and the application of environmental knowledge and skill in missionary efforts, your Au Sable Faculty Representative, and one other faculty or staff member at your home college.
Deadline: Application materials must be submitted online on or before February 1. Awards are announced by February 28.

Creation Care Outreach Fellowship. Creation Care Fellowships are awarded to qualified students from Au Sable's partner colleges and universities who possess a strong desire to engage their own church more effectively in the understanding and practice of care for God's natural world. After completing their course(s) at Au Sable, recipients of the fellowship will be required to share a presentation with their home church community. The presentations will emphasize the biblical mandate of caring for creation and provide a summary of how their time at Au Sable inspired and educated the student to better serve, protect and restore God's earth. The fellowship provides US $500 per course.

The application includes:

a. A statement by the student to the Institute explaining his or her own personal commitment to caring for God's earth and to the expression of creation care in their own local church.
b. Letters of recommendation from the Au Sable Faculty Representative and one other faculty member at the student's home college attesting to the student's commitment to environmental stewardship and sharing the principles of biblical creation care.
c. A pastoral reference attesting to the applicant's commitment to faithful and obedient Christian living as a disciple of Jesus Christ from the pastor of the local church in which they would share. This recommendation should include a statement from the pastor of their willingness to allow the applicant to make a presentation to the church.
c. A resume listing education, service involvement, leadership positions and community, church, and co-curricular activities

Deadline: Application materials must be submitted online on or before February 1. Awards are announced by February 28.

Harold Snyder Fellowship. To commemorate the vision, life and legacy of Au Sable founder Dr. Harold Snyder, the Institute offers the Harold Snyder Fellowship to provide an annual award of US $3000 towards *two courses taken in residence at Au Sable's Great Lakes Campus.* The Fellowship is given to one student each year who shows promise of developing the passion, vision and skill to do and teach science to others as an expression of Christian faith, and as a commitment to serve, protect, and restore God's earth. Students applying for this fellowship should possess and provide:

a. Superior academic ability (GPA of 3.0 or higher); sophomore standing or higher at a partner college of the Au Sable Institute; and academic record providing evidence of pursuit of advanced knowledge and skills of environmental and conservation science.
b. Letters of recommendation from the Faculty Representative and one other faculty member at the student's home college attesting to the student's commitment to and vision for environmental stewardship and academic promise and a commitment to science teaching.
c. A pastoral reference attesting to the applicant's commitment to faithful and obedient Christian living as a disciple of Jesus Christ.
d. A current academic transcript.
e. A statement by the student explaining his or her own understanding and appreciation of the work of Harold Snyder and the Au Sable Institute, and their hopes for studying the biological or environmental sciences as an act of appreciation of God's Creation as well as an act of worship of the Creator.
f. A resume listing education, service involvement, leadership positions and community, church, and co-curricular activities

Acceptance of the Harold Snyder Fellowship requires registration for and completion of a minimum of two courses in residence at Au Sable's Great Lakes Campus during the year in which the award is given. There is no restriction as to which courses the recipient must take, but Au Sable encourages enrollment in Field Biology in Spring, Stream Ecology, or Aquatic Biology, as these subjects were close to Dr. Snyder's own academic interests.

Deadline: Application materials must be submitted online on or before February 1. Awards are announced by February 28.

David C. Mahan Fellowship. To commemorate the legacy of 30 years of service by Au Sable's former Associate Executive Director, Dr. David C. Mahan, the Institute offers the David C. Mahan Fellowship, an annual award of US $2000 towards *two courses taken in residence at Au Sable's Great Lakes Campus.* The Fellowship is given annually to one student who shows ability to advance the work of creation care through creative and caring relational collaborations with others, a hallmark of the work of Dave Mahan during his three decades at Au Sable. Application procedures and selection criteria are the same as the Harold Snyder Fellowship except that the student's statement must explain how he or she has used skill in creating relationally- based collaborations to further creation care. While there is no restriction as to which courses the recipient might take, we would encourage Stream Ecology, Aquatic Biology, or Fish Ecology and Management as these subjects were close to Dr. Mahan's own academic interests. **Deadline:** Application materials must be submitted online on or before February 1. Awards are announced by February 28.

Calvin B. DeWitt Leadership Fellowship. Partner Colleges may nominate one student for the Leadership Fellowship each year. Au Sable will normally select one student to receive this award. The Leadership Fellowship honors the vision and work of our founding Executive Director, Dr. Cal DeWitt, through an award of US $5100 applied to the recipient's expenses for *two courses in one summer session on any Au Sable Campus.*

In addition to academic excellences, nominees must show high potential for leadership in Christian environmental stewardship as documented by the nominating institution in the case statement prepared of behalf of the nominee.

The case statement must also include:

a. A statement from the college/faculty representative giving evidence of the student's leadership potential, including personal growth in recent years;
b. A personal statement (500-600 words) by the student reflecting on experiences demonstrating leadership or potential in Christian environmental stewardship;
c. A statement by the applicant explaining their personal faith, future goals, and aspirations;
d. Two letters of recommendation in addition to the nominating recommendation;
e. A pastoral reference attesting to the applicant's Christian commitment;
f. Current copies of all college transcripts, and;
g. A resume listing education, service involvement, leadership positions and community, church, and co-curricular activities.

This fellowship is granted to a student enrolled in either summer session.
Deadline: Nominations, including case statement, must be submitted online with the Institute by the home institution and student on or before February 1. The recipient of the award is announced by February 28.

ACADEMICS

The Institute offers college-level courses during its May and Summer Sessions. Courses are listed with both semester credit hours and contact hours. The official measure of workload used by the Institute is contact hours, with listed credit hours suggested to the home institution. Semester credit hours granted for a given course are determined by the home institution of the enrolled student. Thus, the suggested semester credit hours listed are not necessarily those granted by the home college. For example, a college may grant 4 credit hours for a single course in either of the two summer sessions but grant a total of 6 credit hours for a summer session in which a student takes two courses simultaneously. Contact hours indicate the number of actual hours spent in class per course including field trips, laboratories, and lectures.

Courses numbered 300-699 are undergraduate and graduate courses. Whether courses are awarded undergraduate or graduate credit is determined by the college or university through which a student enrolls, not by the Institute. The course listing also indicates whether the course qualifies as a field, interdisciplinary, or applied course. These designations are to be used in selecting courses which meet the requirements of Institute Certificates, described later in this Bulletin.

Cross-cultural credit. International courses offered by Au Sable may qualify for cross-cultural credit. Interested students should contact the Au Sable Representative on their campus (or their study abroad office if from a non-partner program) to determine if Au Sable's course in Costa Rica would meet requirements for credit in cross cultural courses at their college.

Course Enrollment. Students may apply for admissions and begin enrollment for courses online at www.ausable.org. See page 9 for application fee and deposit information.

Arrival and departure. Students are expected to arrive at campus locations one day before the posted beginning date of the session. Classes will be conducted through the posted ending date. International courses may have different arrival and departure requirements. Students taking courses at any Au Sable location should confirm all arrival and departure dates prior to purchasing airfare or other travel arrangements.

Course Scheduling. Course scheduling is subject to change. See www.ausable.org/college for the latest information. A three-week session is given in May in which students take only one course. Five-week sessions are given in two Summer Sessions in which students can take two courses per session.

2024 COURSE OFFERINGS

MAY SESSION

May 20 (Monday) – June 7 (Friday), 2024

AU SABLE - GREAT LAKES

Integration Day. All courses include attendance and participation in Integration Days, which meet on Mondays.

Biol 361 Field Biology in Spring *4 cr; 100 contact hrs.*
A field-based introduction to the natural history of northern Michigan and its plants and animals, including their field identification, field biology, behavior and landscape context, with a focus on spring activity of biological communities. This course provides prospective teachers and naturalists with an opportunity to investigate the natural history in this very active time of year. *Field, Interdisciplinary.*

Biol 365 Insect Ecology *4 cr; 100 contact hrs.*
Ecology, systematics, life history and behavior of terrestrial and aquatic insects with an emphasis on field identification skills while exploring a variety of local habitats and considering the roles of insects in pollination, decomposition, herbivory, predation and pathogen transmission. The use of insects in citizen science is explored, including participation in the MiCorps stream monitoring program that provides familiarity with stream sampling and macroinvertebrate communities. *Field, Applied.*

Biol 371 Forest Management *4 cr; 100 contact hrs.*
Introduction to site-level, landscape and multi- stakeholder approaches to forest management, including strategies of climate change adaptation and mitigation. Theory, application, and techniques of forest management for specified values and objectives including instrumental (economic/utilitarian and life support such as wood production, habitat and watershed protection and climate moderation) and non-instrumental values (such as aesthetic, moral/spiritual values e.g. recreation). The course will address the evolution of forest management practice and some specific practices, methods and techniques of growing trees and the development and care of forests (silviculture) as applied to natural forests managed for various objectives. *Field, Applied.*

EnvSt/Geog 378 Field Geology in Michigan *4 cr; 100 contact hrs.*
Explore the bedrock and surficial geology of Northern Michigan and the Great Lakes Region. Students will explore field locations and learn map interpretation skills, to decipher bedrock geologic history and resources and surficial processes and landforms in glacial, drainage-basin, and coastal environments. Gain a profound understanding of how geological forces have sculpted this unique landscape, strengthening your foundation for future studies in geology and environmental sciences. By the end of the course, you will have a solid foundation in field techniques and a profound appreciation for the dynamic landscapes of the Great Lakes region. *Field, Applied.*

AU SABLE - COSTA RICA

Biol/Agric/Geog 343 Sustainability, Tropical Agriculture, and Development *4 cr; 100 contact hrs.*
An introduction to sustainability and tropical agriculture with applications for working with resource-poor farmers. Topics include the scientific basis of low-cost techniques, tropical crops and their requirements, and on-site work. Issues in agricultural development, urban gardening and small animal techniques are also covered in the context of agricultural employment and economy. This course includes several trips to different ecosystem regions of Costa Rica. *Field, Interdisciplinary, Applied.*

AU SABLE – ONLINE

EnvSt 310 Environmental Law and Policy *3 cr; 75 contact hrs.*
Analysis of the policy making process at local, national, and international scales with examination of environmental policy challenges including climate change, resource management and energy development. Students will interact with policy-makers researchers, and land managers to consider linkages between policy and science and ways for science to inform the policy-making process. Environmental ethics, environmental justice, and environmental advocacy will also be considered. *Interdisciplinary.*

AU SABLE – PACIFIC RIM

May 27 (Monday) – June 14 (Friday), 2024

Biol 377 Marine Invertebrates *4 cr; 100 contact hrs.*
Dive into the fascinating world of Marine Invertebrates, based at Rosario Beach Marine Lab and Deception Pass State Park. Explore the region's unique coastal ecosystems as you study the diverse and often overlooked creatures inhabiting its waters. Through hands-on fieldwork and engaging classroom sessions, you'll gain a deep understanding of the ecological importance of these marine invertebrates and their critical role in shaping the coastal environment. *Field.*

SUMMER SESSION I

June 10 (Monday) – July 12 (Friday), 2024

AU SABLE - GREAT LAKES

Integration Day. All courses include attendance and participation in Integration Days, which meet on Mondays.

Biol 305 Agroecology *4 cr; 100 contact hrs.* Field investigation of principles and practices in agroecology. The course will emphasize ecological factors required to produce food in a more environmentally sustainable way, seeking to steward Creation well. We will identify and apply ecological concepts of healthy natural ecosystems to design and manage agroecosystems more sustainably. Visits to various farm types, in comparison to natural ecosystems, will contrast food production practices varying in sustainability. Students will engage in food production practice, recognizing complexities and subtleties of food production. W, F. *Field.*

Biol 311 Field Botany *4 cr; 100 contact hrs.*
Field and lab identification, systematics, natural history, and ecology of vascular plants as components of natural communities and their relationships to ecological features, including stratification, history, plant zonation, adaptation, and animal interactions are examined. Taxonomic relationships of plant families and higher groups are covered. Project or plant collection required. Prerequisite: one year of general biology or one semester of botany. Tu, Th. *Field.*

Biol 321 Animal Ecology *4 cr; 100 contact hrs.*
Interrelationships between animals and their biotic and physical environments, emphasizing animal population dynamics in old growth pine forests and bogs. This field-intensive course centers on the ecology of northern Michigan fauna from a stewardship perspective. Included are individual student projects. Prerequisite: one year of introductory science. Tu, Th. *Field.*

Biol 322 Aquatic Biology *4 cr; 100 contact hrs.* Ecology, identification, systematics, culture, and care of aquatic plants and animals, and adaptations to freshwater environments as determined by direct investigation in lakes, ponds, bogs, marshes, streams, and in the laboratory. The course assesses human impacts on aquatic species and ecosystems, presents procedures for the stewardship of aquatic habitats, and introduces aquatic restoration ecology. Prerequisite: one year of general biology or one semester each of general zoology and general botany. W, F. *Field.*

Biol 358 Field Techniques in Wetlands *4 cr; 100 contact hrs.*
A comprehensive overview of wetland ecosystem processes, values, legislation, and quantification. Students will learn to evaluate and quantify soils, hydrologic status, and vegetation in a variety of wetland ecosystems including bogs, emergent marshes, forested wetlands, and wetlands converted for agriculture, and to apply standard tools developed by the US Army Corps of Engineers and Michigan Department of Environmental Quality to assess wetland extent and habitat quality. Prerequisite: one year of general biology or one semester of general ecology. W, F. *Field, Applied.*

Biol/EnvSt/Chem/Geog 389 Special Topics *1-4 cr; 40-100 contact hrs.*
Special Topics courses are offered periodically by the institute to connect students with training and expertise not available at their home institutions. Through immersive fieldwork, students will acquire essential skills in data collection, specimen analysis, and/or environmental monitoring. Special Topics courses empower students with the practical knowledge and field-ready expertise needed to address pressing environmental challenges and make meaningful contributions to the scientific community.

Biol/Chem/Geog 390 Directed Individual Study *1-4 cr; 15 - 60 contact hrs.*
Field or laboratory study of a problem selected by the student in consultation with a professor and presented as a written proposal in advance of the session in which the study is to be conducted. Prerequisite: A study proposal including goals and objectives, methods, protocols for evaluation to be signed by the professor and director of educational development.

Biol/EnvSt 391 Research Methods I *2 cr, 40 contact hrs.*
A course designed to prepare natural science majors to conduct scientific field research at levels appropriate for senior capstone or competitive off-campus programs. Research Methods I introduces students to experimental design and statistical analysis relevant to scientific research. Students prepare a research proposal and initiate their investigation, typically focused on a biodiversity survey of a selected taxonomic group. Prerequisite: Selection to the Summer Undergraduate Preparation in Environmental Research program (page 27).

Biol/Geog 471 Conservation Biology *4 cr; 100 contact hrs.*
Principles of conservation biology with applications to sustainable human society and biospheric integrity. An integrative approach to biology and society that interrelates population biology, ecological principles, biogeochemical cycles, ecosystem functions, and human society in the context of biospheric degradation. The course develops a stewardship perspective rooted in biological principles and directed at conservation of plant and animal species, biotic communities, ecosystems, and human society, including topics in human development, poverty, and economic growth. Prerequisite: one year in biology, one course in ecology, or permission of professor. Tu, Th. *Field, Applied, Interdisciplinary.*

Biol/Chem/Geog 499 Research *1-6 cr; 15-90 contact hrs.*
Participation in an ongoing research project of the Institute. Prerequisite: A research proposal including goals and objectives, methods, protocols for evaluation; to be signed by the professor and program director.

AU SABLE – ONLINE

Biol/EnvSt/Geog 330 Geographic Information Systems *4 cr; 100 contact hrs.*
An introduction to the theory and application of Geographic Information Systems (GIS) for applied social and ecological problem-solving. Through a series of readings, videos, and hands-on exercises covering a variety of environmental themes, issues, and scales, participants will learn the fundamentals of the types of maps, map projections, symbology, classification, analysis, and web mapping applications, and gain skills and confidence to be able to conduct their own field studies, do spatial analysis, and create their own maps and visualizations. *Applied, Interdisciplinary.*

SUMMER SESSION II

July 15 (Monday) – August 16 (Friday), 2024

AU SABLE - GREAT LAKES

Integration Day. All courses include attendance and participation in Integration Days, which meet on Mondays.

Biol/EnvSt/Geog 362 Environmental Applications for Geographic Information Systems (GIS) *4 cr; 100 contact hrs.* Introduction to the theory and application of spatial analysis for environmental conservation and planning using geographic information system (GIS) technology in the context of real-world conservation problems. This course combines instruction in GPS field data collection; ArcGIS use for storage, analysis, interpretation, and presentation of spatial data; and remote sensing techniques and their integration with GIS applications. Examines theories of environmental planning at regional and landscape levels and their importance for conservation. Instruction in these skills will be integrated around an environmental project applying GIS techniques to actual conservation problems associated with protecting or restoring degraded environments. Tu, Th. Field, *Applied. Interdisciplinary.*

Chem 332 Environmental Chemistry *4 cr; 100 contact hrs.*
Principles, analysis and impact of chemical movement and distribution - both natural and human-induced - in natural environments focusing primarily on the hydrosphere and atmosphere. Sampling and analytical methods are included for water, soil, and air. Work is conducted both on site in natural habitats and the laboratory. Prerequisite: one year of general chemistry and one semester of either biochemistry or organic chemistry. W, F. *Field, Applied.*

Biol 323 Stream Ecology *4 cr; 100 contact hrs.*
An exploration of streams, emphasizing the unique organisms inhabiting them. Using field-oriented approaches, the course invites students to recognize the intimate connections between streams and their watersheds, explore lotic community ecology, and study fascinating aquatic creatures. Students will gain appreciation for both the intrinsic value of lotic habitats and ecosystem services they provide. The course also addresses human impacts on freshwater systems and approaches to their stewardship. Students will receive training in standard techniques used to assess stream quality and contribute to an ongoing river monitoring project. Tu, Th. *Field, Applied, Interdisciplinary.*

Biol 342 Fish Ecology and Management *4 cr; 100 contact hrs.*
Introduction to the relation of freshwater fish species and their environments in lakes and streams with concurrent examination of techniques and technologies employed to manage populations and species for conservation, recreational use, and commercial harvest. This course will provide understanding of freshwater fish taxonomy and phylogenetic relationships, habitat requirements of major fish species by life stages, stream habitat assessment, population measuring and monitoring, and strategies for management of recreational and commercial species and conservation of threatened and endangered species. W, F. *Field, Applied.*

Biol 345 Wildlife Ecology *4 cr; 100 contact hrs.*
Ecology, conservation, and stewardship of wildlife and their habitats. Includes examination of growth and structure of populations, environmental and human social factors affecting wildlife communities, and theories and applications of wildlife conservation. Set in the context of the historical development of the field from management to ecology to the land ethic of Leopold. Includes management and stewardship of non-game and endangered species, and long-term prospects of wildlife in changing environmental, climatic, and social contexts. Prerequisite: one course in biology, or permission of professor. Tu, Th. *Field, Applied, Interdisciplinary.*

Biol/EnvSt/Chem/Geog 389 Special Topics *1-4 cr; 40-100 contact hrs.*
Special Topics courses are offered periodically by the institute to connect students with training and expertise not available at their home institutions. Through immersive fieldwork, students will acquire essential skills in specimen collection, data analysis, and/or environmental monitoring. Special Topics courses empower students with the practical knowledge and field-ready expertise needed to address pressing environmental challenges and make meaningful contributions to the scientific community.

Biol/Chem/Geog 390 Directed Individual Study *1-4 cr; 15-60 contact hrs.*
Field or laboratory study of a topic selected by the student in consultation with a professor and presented as a written proposal in advance of the session in which the study is to be conducted. Normally, topics are outgrowths of previous coursework with a given professor at Au Sable. Prerequisite: A study proposal including goals and objectives, methods, protocols for evaluation; to be signed by the professor and director of educational development.

Biol/EnvSt 392 Research Methods II *2cr, 40 contact hrs.*
This course follows Research Methods I with completion of data collection and analysis, and the reporting of results through scientific writing and oral/poster presentation. Prerequisite: Research Methods I. Tu.

Biol 482 Restoration Ecology *4 cr; 100 contact hrs.*
Ecological principles for ecosystem restoration and applications for restoring degraded and endangered species. Field studies include analysis of restoration and rehabilitation work with the Kirtland's warbler, an officially designated wild river, coastal dunes, kettle-hole bogs, deforested lands, degraded residential and farming sites, and abandoned oil wells. A practical field lab is included in which techniques are applied to a specific site. Prerequisite: one year of biology and one course in ecology or field biology, or permission of professor. W, F. *Field, Applied, Interdisciplinary.*

Biol/Chem/Geog 499 Research *1-6 cr; 15-90 contact hrs.*
Participation in an ongoing research project of the Institute. Prerequisite: A research proposal including goals and objectives, methods, protocols for evaluation; to be signed by the professor and director of educational development. Staff.

AU SABLE - PACIFIC RIM

July 15 (Monday) – August 16 (Friday), 2024

Integration Day. All courses include attendance and participation in Integration Days, which meet mid-week.

Biol/Geog 304 International Development and Environmental Sustainability *4 cr; 100 contact hrs.*
Principles of sustainable development, examining ecological sustainability and sustainable society in the context of various factors that are bringing environmental degradation and impoverishment to people and cultures. The course addresses problems associated with tropical agriculture, hunger, poverty, international debt, appropriate technology, relief programs, missionary earthkeeping, conservation of wild nature, land tenure, and land stewardship and the resolution of practical and ethical issues associated with these problems, employing a discussion format both in classroom and field settings. M, Th. *Field, Applied*, *Interdisciplinary*.

Biol 318 Marine Biology *4 cr; 100 contact hrs.*
Biology of marine plants and animals in the field. The focus of the course is on intertidal life and marine ecology in oceanic and geophysical context. Includes trophic dynamic relationships of eel grass communities and the intertidal zone, workings of the island systems of Puget Sound, ecological roles of sea birds and fishes, population and community structure dynamics, exploitation and oceanic microbialization, and biogeochemical processes and their linkages with the biosphere. Marine stewardship and effects of human activity on the marine environment are examined in all course components. M, Th. *Field*.

Biol 359 Marine Mammals *4 cr; 100 contact hrs.*
Biology, behavior, ecology, identification, and conservation of the marine mammals of the Pacific Northwest. This course examines habitats of marine mammals in Puget Sound and the Salish Sea, with special attention to diving physiology, social behavior, and communications of whales and seals. The course aims to develop a stewardship perspective rooted in biological principles and directed at the global conservation of marine mammals and their ecosystems. Special attention is given to their use by cultures of the region and the relation of such use to current controversies in management of marine mammals. Prerequisite: one year of general biology or one semester of zoology. A course in anatomy and/or physiology is recommended. Tu, F. *Field. This course includes an additional excursion fee of $100 (required).*

Biol 478 Alpine Ecology *4 cr; 100 contact hrs.*
Ecology of the mountains of the Pacific Northwest, with particular attention to adaptation of plant and animal life to montane climates and altitudes, and analysis and interpretation of altitudinal zonation of biotic communities with applications to latitudinal biogeography. The course also examines physiological responses of organisms to reduced oxygen levels, low temperatures and high altitude radiation regimes. Field work includes on-site studies in the Olympic Mountains of the Olympic Peninsula. Tu, F. *Field.*

AU SABLE – ONLINE

Biol/EnvSt 331 Ecological Analysis in R *4 cr; 100 contact hrs.*
Unlock the power of R for analyzing ecological data. Explore the fundamentals of statistical analysis and discover how R can revolutionize ecological studies, equipping you with essential skills for graduate school and enhancing your proficiency in conducting impactful ecological research. Consult with your major advisor to see whether this course fulfills your major's statistics requirement. *Applied, Interdisciplinary*.

CERTIFICATE PROGRAMS

Certificates are granted by the Institute for naturalists, land resources analysts, water resources analysts, and environmental analysts. Students working toward a certificate should indicate so on their application or give written notice to the Institute. Students seeking a certificate have priority for admission and course selection. Certificate requirements are revised periodically, and students may comply either with those requirements listed in the Official Bulletin under which they first enrolled, or the most recent requirements, at their discretion.

Application for Certificates.
Students working toward a certificate must file a formal certificate application no later than the beginning of the semester in which they expect to graduate from their home institution. Contact the Director of College Programs for more information.

General Requirements for Certificate.
Students working toward any of the Institute certificates must complete or achieve the following:

a. A baccalaureate degree program at a college or university approved by the Institute.
b. An approved major field of study at a liberal arts college or university with an average grade of C or better in the major field of study.
c. A minimum of three approved courses for a minimum of 270 contact hours taken in residence at the Institute.
d. A minimum of four field courses totaling a minimum of 300 contact hours taken at either or both the college and the Institute. (A field course has 50% or more of the contact hours in out-of-doors situations. The remaining 50% of the contact hours is in classrooms, laboratories, government buildings, fish hatcheries, or other indoor settings.)
e. A minimum of one applied course with a minimum of 45 contact hours. (An applied course has 40% or more of the contact hours devoted to applications and techniques that are routinely used in occupations and vocations.)
f. A minimum of two interdisciplinary courses each with a minimum of 45 contact hours. (An interdisciplinary course has no more than 40% of the contact hours from a single traditional liberal arts department or field of study.)
g. An average grade of C or better for courses taken at the Institute for a certificate.

Specific Requirements for obtaining a Certificate. The following are the additional specific requirements:

CERTIFIED NATURALIST (Field Naturalist Certificate)

The purpose of the Naturalist Certificate is to certify students as having proficiency in occupational skills in interpretive natural history and environmental biology, skills required for pre-medical students considering work in environmental medicine, and students seeking interpretive naturalist and related positions with schools and colleges, science and natural history museums, nature interpretive centers, state departments of natural resources, arboretums, preserves, and school forests.

Minimum Course Requirements:

a. One course in plant taxonomy, field botany, regional vegetation, or woody plants with a minimum of 90 contact hours.
b. One course in field biology, natural history, woody plants, animal ecology, or an animal group, with a minimum of 90 contact hours.
c. One course in ecology or conservation biology for which a year of general biology is a prerequisite, with a minimum of 90 contact hours.
d. One course in physical geography, geology, land resources, land stewardship ecology, biosphere science, or soils with a minimum of 90 contact hours.

Minimum Occupational Techniques Requirements: These are met through course work and proficiency tests administered by the faculty of the Institute.

a. *Museum Techniques.*
   Must demonstrate proficiency at professional museum techniques for at least one major plant or animal group. Examples are herbarium specimen preparation and management, insect specimen preparation and management, study skin preparation and management, and preserved specimen preparation and management. Proficiency is normally demonstrated through regular work done in Au Sable courses.
b. *Field Techniques.*
   Must demonstrate proficiency in use of topographic maps, aerial photographs, and geographical positioning systems (GPS) for orientation and other purposes under field conditions. Must demonstrate proficiency in management, transport, and safety techniques for use of boats and canoes. Must demonstrate proficiency in conduct of field trips for children and adults, complete any of the officially-listed internships in this Official Bulletin, or work as a volunteer or intern teaching out-of-doors for a church, nature center, or environmental organization.
c. *Literature and Information Techniques.*
   Must demonstrate proficiency in selecting and managing library materials relating to environmental stewardship and natural history subjects. Proficiency can be demonstrated by (1) developing a specific topical collection of literature for the Institute. (2) contributing to the Au Sable website, or (3) volunteer work on an environmental topic in an Au Sable campus library, college library, public library, or nature
   center library.

CERTIFIED LAND RESOURCES ANALYST
(Land Resources Analyst Certificate)

The purpose of the Land Resources Analyst Certificate is to certify students as having proficiency in occupational skills in land resources interpretation, assessment, inventory, and management– skills required for planning, resource management, and related positions with employers such as township and county planning agencies, county zoning offices, departments of natural resources, private planning and engineering firms, and firms engaged in landscape architecture.

Minimum Course Requirements:

a. One course in land resources, land stewardship ecology, or town and country planning, with a minimum of 90 contact hours.
b. One of the following courses: 301, 303, 304, 310, 343, 358, 362, 367, 482, with a minimum of 90 contact hours.
c. One course from the following, with a minimum of 90 contact hours: physical geography, soils, hydrology, general geology, field geology, geomorphology, environmental geology.
d. One course in ecology, ecological agriculture, or development and ecological sustainability with a minimum of 90 contact hours.

Minimum Occupational Techniques Requirements:

This requirement is met through course work and proficiency tests administered by the faculty of the Institute.

a. *Remote Sensing and Photographic Interpretation Techniques and Geographic Information Systems (GIS) and Geographical Positioning Systems (GPS).*
   Must demonstrate proficiency in managing geographic information systems and ability to use satellite and aircraft imagery in interpretation and mapping landforms, vegetation types, and urban development.
b. *Field Techniques.*
   Must demonstrate proficiency in use of topographic maps, aerial imagery, and geographical positioning systems (GPS) for orientation and other purposes under field conditions. Must demonstrate proficiency at dominant species identification and classification of biotic communities and ecosystems.
c. *Laboratory Techniques.*
   Must demonstrate proficiency in computer-based overlay mapping techniques applied to land resources planning, management, and decision-making.

d. *Literature and Information Techniques.*
Must demonstrate proficiency in identification, location, procurement, and use of planning and management documents of public and private agencies. Must demonstrate proficiency in preparing land resources maps and integrating them with non-technical but accurate text for use in policy- making and planning.

e. *Computing and Information Processing Techniques.*
Must demonstrate proficiency in the use of computers in ecological and geographic and geo-referenced data management and analysis, spreadsheet modeling, and word-processing.

CERTIFIED WATER RESOURCES ANALYST
(Water Resources Analyst Certificate)

The purpose of the Water Resources Analyst Certificate is to certify students as having proficiency in occupation skills in water resources interpretation, assessment, inventory, and management– skills required for planning, resource management, and related positions with employers such as township and county planning agencies, county zoning departments, soil and water conservation agencies, state departments of natural resources, planning and engineering firms, lake-owners associations, and governmental lake districts.

Minimum Course Requirements:

a. One course in limnology, watershed ecology, or water resources with a minimum of 90 contact hours.
b. One course in aquatic biology, marine invertebrates or marine biology, with a minimum of 90 contact hours.
c. One course in analytical or environmental chemistry with a minimum of 90 contact hours.
d. One of the following courses: 304, 310, 322, 342, 358, 367, 482 with a minimum of 90 contact hours.

Minimum Occupational Techniques Requirements: This requirement is met through coursework and proficiency tests administered by the faculty of the Institute.

a. *Sampling and Measurement Techniques.*
Must demonstrate proficiency in aquatic resources sampling techniques including use of grab samplers, plankton nets, seines, conductivity, pH, temperature and dissolved oxygen meters, transparency and light apparatus, and electronic thermometer.

b. *Field Techniques.*
Must demonstrate proficiency in use of topographic and bathymetric maps, nautical charts, aerial photographs, digital imagery, geographic information systems (GIS), and geographical positioning systems (GPS) for orientation and other purposes under field conditions. Must demonstrate proficiency in management, transport, and safety techniques for use of boats and canoes.

c. *Laboratory Techniques.*
Must demonstrate proficiency in standard methods of water resources analysis including microscopy, titrimetric methods, spectrometric methods, gravimetric methods, and bacterial analysis. Must demonstrate competence in laboratory management and safety procedures, including methods of treatment, storage, and disposal of chemical and hazardous wastes. Must demonstrate proficiency in aquaria and captive aquatic organism management.

d. *Literature and Information Techniques.*
Must demonstrate proficiency in the use of EPA Standard Methods and the latest edition of Standard Methods for the Examination of Water and Wastewater as published by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, including thorough knowledge of its General Introduction.

e. *Computing and Information Processing Techniques.*
Must demonstrate proficiency in the use of computers in ecological and geographic and geo-referenced data management and analysis, spreadsheet modeling, and word-processing.

CERTIFIED ENVIRONMENTAL ANALYST
(Environmental Analyst Certificate)

The purpose of the Environmental Analyst Certificate is to certify students as having proficiency in occupational skills in land and water resources interpretation, assessment, inventory, and management– skills required for planning, resource management, and related positions with employers such as township and county planning agencies, county zoning departments, soil and water conservation agencies, state departments of natural resources, planning and engineering firms, and firms engaged in landscape architecture.

Minimum Course Requirements:

a. One course in land resources, land stewardship ecology, or field geology with a minimum of 90 contact hours.
b. One course in water resources, limnology or environmental chemistry with a minimum of 90 contact hours.
c. One course in ecology with a minimum of 90 contact hours.
d. One of the following courses: 303, 304, 310, 332, 343, 358, 471, 482, with a minimum of 90 contact hours.

Minimum Occupational Techniques Requirements: This requirement is met through coursework and proficiency tests administered by the faculty of the Institute.

a. *Sampling and Measurement Techniques.*
Must demonstrate proficiency in aquatic resources sampling techniques including use of grab samplers, plankton nets, seines, conductivity, pH, temperature and dissolved oxygen meters, transparency and light apparatus, and electronic thermometer.
b. *Remote Sensing and Photographic Interpretation Techniques.* Must demonstrate proficiency at using satellite and aircraft imagery in interpretation and mapping of landforms, water bodies, vegetation types, and urban development. Must demonstrate proficiency in the use of equipment employed in such mapping.
c. *Field Techniques.*
Must demonstrate proficiency in use of topographic and bathymetric maps, nautical charts and aerial photographs for orientation and other purposes under field conditions. Must demonstrate proficiency at dominant species identification and classification of biotic communities and ecosystems.
d. *Laboratory Techniques.*
Must demonstrate proficiency in computer-based overlay mapping techniques applied to land and water resources planning, management, and decision-making. Must demonstrate proficiency in standard methods of water resources analysis including microscopy, titrimetric methods, spectrometric methods, gravimetric methods of treatment, storage, and disposal of chemical and hazardous wastes.
e. *Literature and Information Techniques.*
Must demonstrate proficiency in identification, location, procurement, and use of planning and management documents of public and private agencies. Must demonstrate proficiency in preparing analog and digital land and water resources maps and integrating them with non-technical but accurate text for use in policy-making and planning. Must demonstrate proficiency in the use of EPA Standard Methods and the latest edition of Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association, American Water Works Association and Water Pollution Control Federation, including thorough knowledge of its General Introduction (Parts 100-108).
f. *Computing and Information Processing Techniques.*
Must demonstrate proficiency in the use of computers in ecological and geographic and geo-referenced data management and analysis, spreadsheet modeling, and word- processing.

OTHER CERTIFICATES

Society of Wetland Scientists

Students completing Field Techniques in Wetlands (Summer Session I, Great Lakes) complete the necessary training, field work and exams to earn a certificate in wetland delineation from Au Sable. This course has been pre- approved by the Society of Wetland Scientists Professional Certification Program as meeting standards for content and instruction to receive credits and/or points toward SWSPCP Professional Certification or SWSPCP Professional Certification Renewal.

RESEARCH

SUMMER UNDERGRADUATE PREPARATION IN ENVIRONMENTAL RESEARCH

The Au Sable Summer Undergraduate Preparation in Environmental Research (SUPER) program is designed to prepare sophomore or junior students for upper-level requirements in environmental research at their home college, including senior capstones, or for external competitive research programs such as the National Science Foundation's Research Experiences for Undergraduates.

The SUPER program is a comprehensive 13-week program that includes 16 college credits of field coursework at the Au Sable Great Lakes campus and guided research instruction culminating in an independent or collaborative research project. Whenever possible, students will be advised on projects that (a) work with local conservation partners and funding agencies to address questions of concern for the region, (b) provide for a better understanding of the diversity of local ecosystems, or (c) test theories for which there is a direct or indirect connection to conservation practice in the Great Lakes region. Typical taxonomic groups may include woody or herbaceous plants, aquatic or terrestrial invertebrates and insects, or selected vertebrates. Students will select courses to complement their SUPER program experience in consultation with their major advisor and with Au Sable's Director of College Programs. A typical course of study looks like the following:

May Session: One course: Field Biology in Spring, Forest Management, Field Geology in Michigan, or Insect Ecology

Summer Session I: Research Methods I and one additional course

Summer Session II: Research Methods II and one additional course

Selection for the SUPER program is competitive and based on student academic performance, supportive recommendations and interest in environmental research. All selected SUPER participants will be awarded an additional US $2000 Research Fellowship in addition to other qualifying aid awarded (such as the Academic Scholar Awards or Sustaining Partner Grant). Because the SUPER program provides preparation for research, no specific research experience is required; however, students should meet the prerequisites of 1 year of general biology, 1 semester of ecology or environmental science and 1 semester of introductory statistics.

Application Procedure. Students should first contact their Official Au Sable Representative who will recommend them based on their qualifications and interest. Further information is available on Au Sable's website or by contacting the Director of College Programs at heath.garris@ausable.org.

RESEARCH

The Au Sable Undergraduate Research Program is designed to prepare students as scientists by involving them in an interactive, eight to thirteen-week experience in being part of longer-term, externally funded, direct, primary investigations in conservation science. Past research studies have included the nesting preferences of the threatened Kirtland's warbler, the reforestation of inactive oil and gas well pads and monitoring the macroinvertebrate community of the Boardman River following dam removal. Program objectives include enhancing student skills in scientific methodology, research design, data gathering and analysis, and scientific writing and presentation. Students will also be part of an academic community offering scientific collaboration and interdependence among professional scientists and research students. Research Assistants receive free room and board and stipends. Selection to the Research Program is competitive and project-specific. Applicants considered for Research Assistantships must possess a strong academic background, career commitment to environmental conservation, supportive recommendations, interest in research, and capacity for extended and strenuous effort needed to gather data in field environments.

The research program is offered when project funding is available. Students desiring to study in the research program should check Au Sable's website for announcements or contact the Institute office.

CUSTOM OPPORTUNITIES

Working with your campus Faculty Representative, Au Sable can help students complete research, internship or other experiential options that can help fulfill program and major requirements. For further information, please contact Dr. Heath Garris, Director of College Programs at heath.garris@ausable.org.

FACULTY AND STAFF

Scott Carr. Ph.D. Miami University. Professor of Chemistry and Physics, Anderson University.
Grant Casady, Ph.D. University of Arizona, Professor of Biology, Whitworth University.
Jason Courter, Ph.D. Clemson University, Professor of Biology, Malone University.
Calvin B. DeWitt. Ph.D., M.A., University of Michigan. Prof. of Environmental Studies, Gaylord Nelson Institute for Environmental Studies, University of Wisconsin-Madison, and Executive Director Emeritus, Au Sable Institute.
David Dornbos. Ph.D., Iowa State University; M.S., The Ohio State University. Associate Professor of Biology, Calvin University.
Tomás Dozier. Director, Association for Development through Education (ADE).
Michael Ferber. Ph.D., M.A., West Virginia University. Associate Professor of Geography, The King's University.
Laurie Furlong. Ph.D., M.A., University of California-Santa Barbara. Professor of Biology, Northwestern College.
Heath Garris. Ph.D., University of Akron; M.S., University of Alabama at Birmingham. Director of College Programs, Au Sable Institute.
Mark Gathany. Ph.D., Colorado State University; M.S., Ohio University. Professor of Biology, Cedarville University.
Mike Guebert. Ph.D., M.S., Pennsylvania State University. Professor of Earth and Environmental Science, Taylor University.
Christian Hayes. Ph.D. University of Southern Mississippi; M.S., Loma Linda University. Assistant Professor of Biology, Waynesburg University.
David Hoekman. Ph.D. University of Notre Dame. Associate Professor of Biology, Olivet Nazarene University.
Beth Horvath. M.S., California State University, Long Beach. Associate Professor of Biology, Westmont College.
Matt Ingle. Ph.D., M.S., Loma Linda University. Rhetoric School Science and Math Teacher, Trinity Classical Academy.
Joseph Kerski. Ph.D. University of Colorado; M.A. University of Kansas. Education Manager, ESRI.
Wendy Klooster. Ph.D. The Ohio State University; M.S. Michigan State University. Assistant Professor of Professional Practice, The Ohio State University.
Eli Knapp. Ph.D., Colorado State University; M.S., University of California - Santa Barbara. Associate Professor of Intercultural Studies, Biology and Earth Science, Houghton College.
Aaron Koning. Ph.D. University of Wisconsin-Madison. University of Nevada-Reno, Postdoctoral Research Fellow.
Rachel L. Lamb. Ph.D., M.S./M.P.P, University of Maryland. Agency Lead, Maryland Department of the Environment.
Steven Lane. Ph.D., University of Montana. Assistant Professor of Biology, Malone University.
Andrea N. Nord. Ph.D., M.S., Pennsylvania State University. Assistant Professor of Biology, Greenville University.
Eric Nord. Ph.D., M.S., Pennsylvania State University, Assistant Professor of Biology, Greenville University.
Vern Peters. Ph.D., University of Alberta. Associate Professor of Biology, The King's University.
Nathan Reed. Ph.D., Texas A&M. Assistant Professor of Biology, North Greenville University.
Kenneth J. Sytsma. Ph.D., Washington University; M.A., Western Michigan University. Professor of Botany, University of Wisconsin-Madison.
Jon Terry. B.S., Calvin College. Executive Director, Au Sable Institute.
Timothy R. Van Deelen Ph.D. Michigan State University; M.S. University of Montana. Associate Professor of Wildlife Ecology, University of Wisconsin - Madison.
Ronald J. Vos. Ph.D., South Dakota State University; M.A., Governors State University. Professor of Agriculture, Dordt University.
Timothy Wakefield. Ph.D., Auburn University; M.A., University of Missouri Kansas City. Associate Professor of Biology, John Brown University.
David P. Warners. Ph.D., Univ. of Michigan; M.S., University of Wisconsin. Professor of Biology, Calvin University.
Brian Webb. M.S., Minnesota State University and Harvard Extension School. Director of Campus Sustainability, Wooster College.
Paul Wiemerslage. M.Ed., Western Washington Univ. Environmental Education Coordinator, Au Sable Institute.

PARTNER COLLEGES

The following schools are Partner Colleges and Universities of the Au Sable Institute, have faculty who serve on the Institute's Academic Council, and are authorized to publish any or all Au Sable courses in their bulletins and catalogs as part of their regular course offerings. Contact your Au Sable Faculty Representative listed below for more information.

Abilene Christian University	Abilene, Texas 79601	Dr. Thomas Lee
Anderson University	Anderson, Indiana 46012	Dr. Scott Carr
Azusa Pacific University	Azusa, California 91702	Dr. Charles Chen
Bethel University	Mishawaka, Indiana 46545	Dr. Katie Weakland
Bethel University	St. Paul, Minnesota 55112	Dr. Sara Wyse
Biola University	La Mirada, California 90639	Dr. Patrick Sun
Bryan College	Dayton, Tennessee 37321	Dr. Alice Lawrence
Calvin University	Grand Rapids, Michigan 49546	Dr. David Warners
Cedarville University	Cedarville, Ohio 45314	Dr. Mark Gathany
Cornerstone University	Grand Rapids, Michigan 49505	Dr. Rob Keys
Covenant College	Lookout Mountain, Georgia 30750	Dr. Joelle Laing
Dordt University	Sioux Center, Iowa 51250	Dr. Robb De Haan
Eastern University	St. Davids, Pennsylvania 19087	Dr. Rachael Alfaro
Geneva College	Beaver Falls, Pennsylvania 15010	Prof. Marjory Tobias
Gordon College	Wenham, Massachusetts 01984	Dr. Dorothy Boorse
Grace College	Winona Lake, Indiana 46590	Dr. Nate Bosch
Greenville University	Greenville, Illinois 62246	Dr. Andrea Nord/Dr. Eric Nord
Hardin-Simmons University	Abilene, Texas 79698	
Houghton College	Houghton, New York 14744	Dr. Eli Knapp
Huntington University	Huntington, Indiana 46750	Dr. Collin Hobbs
Indiana Wesleyan University	Marion, Indiana 46953	Dr. Steve Conrad
John Brown University	Siloam Springs, Arkansas 72761	Dr. Timothy Wakefield
Judson University	Elgin, Illinois 60123	Dr. Jeffrey Henderson
King University	Bristol, Tennessee 37311	Prof. Joshua Rudd
Lee University	Cleveland, Tennessee 37311	Dr. Michael Freake
LeTourneau University	Longview, Texas 75602	Dr. Scot Dyer
Malone University	Canton, Ohio 44709	Dr. Steven Lane
Messiah University	Grantham, Pennsylvania 17027	Dr. David Foster
Mid-Atlantic Christian University	Elizabeth City, NC 27909	Dr. Kevin Larsen
Montreat College	Montreat, North Carolina 28757	Dr. Joshua Holbrook
North Park University	Chicago, Illinois 60625	Dr. Drew Rholl
Northwest Nazarene University	Nampa, Idaho 83686	Dr. David Hille
Northwest University	Kirkland, Washington 98033	Dr. Eric Steinkamp
Northwestern College	Orange City, Iowa 51041	Dr. Laurie Furlong/Dr. Todd Tracy
Olivet Nazarene University	Bourbonnais, Illinois 60914	Dr. Derek Rosenberger
Oral Roberts University	Tulsa, Oklahoma 74171	Dr. Hal Reed
Palm Beach Atlantic University	W. Palm Beach, Fla. 33401	Dr. Robert Hegna
Point Loma Nazarene University	San Diego, Calif. 92106	Dr. Michael Mooring
Redeemer University	Ancaster, Ontario L9K 1J4	Dr. Edward Berkelaar
Roberts Wesleyan College	Rochester, New York 14624	Prof. Rachel Graham
Simpson University	Redding, California 96003	Dr. Brian Hooker
Southern Nazarene University	Bethany, Oklahoma 73008	Dr. Daniel G. Rocha
Spring Arbor University	Spring Arbor, Michigan 49283	Prof. Brian Steel
Taylor University	Upland, Indiana 46989	Dr. Michael Guebert

Continued on next page.

The King's University	Edmonton, Alberta T6B 2H3	Dr. Vern Peters
The Master's University	Santa Clarita, California 91322	Dr. Joe Francis
Trinity Christian College	Palos Heights, Illinois 60463	Dr. Abigail Schrotenboer
Trinity Western University	Langley, B.C. V2Y 1Y1	Dr. David Clements/Prof. Karen Steensma
Union University	Jackson, Tennessee 38305	Dr. Michael Schiebout
University of Northwestern-St. Paul	St. Paul, Minnesota 55113	Dr. Joel Light
Wayland Baptist University	Plainview, Texas 79072	Dr. Matthew Allen
Waynesburg University	Waynesburg, PA 15370	Dr. Christian Hayes
Westmont College	Santa Barbara, California 93108	Dr. Jeffrey Schloss
Wheaton College	Wheaton, Illinois 60187	Dr. Kristen Page
Whitworth University	Spokane, Washington 99251	Dr. Grant Casady

Enrollment through other Colleges and Universities. Other colleges, universities, and seminaries may at their discretion grant credit for courses taken by their students at Au Sable Institute. Students in these institutions must make arrangements for credit with their home institution in advance of the sessions in which they intend to enroll. These students may also enroll through any Partner College.

Further Information & Campus Locations

For more detailed directions, go to www.ausable.org or contact the site office.

FURTHER INFORMATION

Au Sable Website. Visit the Au Sable website for more information, news, blog posts, and photographs, www.ausable.org

Viewbook. The Institute provides a printed brochure for display of programs conducted in partnership with Partner Colleges. Contact the Institute Administrative Office for this and other publicity material.

AU SABLE OFFICES

Business Office / Registrar / Main Campus
Au Sable Institute
7526 Sunset Trail NE, Mancelona, Michigan 49659
Phone: (231) 587-8686; (800) 315-2836; Fax: (231) 587-5353;
E-mail: info@ausable.org
Instagram: @ausableinstitute
Facebook: @ausableinstitute

Admissions Office
Phone/Text: (231) 252-6374
E-mail: admissions@ausable.org

Contact for applications, transcripts, information on academic program and internships as well as general information about the Institute, Christian environmental stewardship, newsletters, website information, and supporting the Institute. Office is closed on federal holidays and weekends.

COURSE LOCATIONS

Au Sable Institute of Environmental Studies- Great Lakes
7526 Sunset Trail NE, Mancelona, Michigan 49659 Phone:
(231) 587-8686; Fax: (231) 587-5353

Au Sable Institute of Environmental Studies- Pacific Rim- May-June
Rosario Beach Marine Laboratory
15510 Rosario Beach Rd,
Anacortes, WA 98221

Au Sable Institute of Environmental Studies- Pacific Rim- SSII
Camp Casey Conference Center
1276 Engle Road
Coupeville, WA 98239-3617

Costa Rica – Association for Development through Education (ADE)
San Rafael de Vara Blanca, Heredia, Costa Rica.
Transportation logistics and van transportation from San Jose Airport (SJO) are coordinated with each enrolled student.

2024 Institute Calendar & 2025 Tentative Schedule

2024 CALENDAR

MAY SESSION 2024

May 20 - June 7, 2024

GREAT LAKES
Forest Management; Field Biology in Spring; Field Geology in Michigan, Insect Ecology

PACIFIC RIM * May 27 – June 14, 2024
Marine Invertebrates

COSTA RICA
Sustainability, Tropical Agriculture, and Development

ONLINE
Environmental Law and Policy

SUMMER SESSION I 2024

June 10 - July 12, 2024

GREAT LAKES
Animal Ecology; Aquatic Biology; Conservation Biology; Field Botany; Field Techniques in Wetlands; Agroecology; Research Methods I

ONLINE
Geographic Information Systems (GIS)

SUMMER SESSION II 2024

July 15 - August 16, 2024

GREAT LAKES
Environmental Applications for GIS; Environmental Chemistry; Fish Ecology and Management; Stream Ecology; Restoration Ecology; Wildlife Ecology; Research Methods II

PACIFIC RIM
Alpine Ecology; International Development and Environmental Sustainability; Marine Biology; Marine Mammals

ONLINE
Ecological Analysis in R

TENTATIVE 2025 CALENDAR

MAY SESSION 2025

May 19 – June 6, 2025
May 26 – June 13, 2025 (Pacific Rim)

SUMMER SESSION I 2025

June 9 - July 11, 2025

SUMMER SESSION II 2025

July 14 - August 8, 2025

List of Au Sable Courses by Number

303	Ecological Agriculture	Pacific Rim	Summer Session II
304	International Development and Environmental Sustainability	Pacific Rim	Summer Session II
305	Agroecology	Great Lakes	Summer Session I
310	Environmental Law and Policy	Online	May Session
311	Field Botany	Great Lakes	Summer Session I
318	Marine Biology	Pacific Rim	Summer Session II
321	Animal Ecology	Great Lakes	Summer Session I
322	Aquatic Biology	Great Lakes	Summer Session I
323	Stream Ecology	Great Lakes	Summer Session II
330	Geographic Information Systems	Online	Summer Session I
331	Ecological Analysis in R	Online	Summer Session II
332	Environmental Chemistry	Great Lakes	Summer Session II
342	Fish Ecology and Management	Great Lakes	Summer Session II
343	Sustainability, Tropical Agriculture and Development	Costa Rica	May Session
345	Wildlife Ecology	Great Lakes	Summer Session II
354	Environmental Justice	Online	Summer Session II
358	Field Techniques in Wetlands	Great Lakes	Summer Session I
359	Marine Mammals	Pacific Rim	Summer Session II
361	Field Biology in Spring	Great Lakes	May Session
362	Environmental Applications for Geographic Information Systems (GIS)	Great Lakes	Summer Session II
365	Insect Ecology	Great Lakes	May Session
368	Forest Ecology	Pacific Rim	Summer Session II
371	Forest Management	Great Lakes	May Session
377	Marine Invertebrates	Pacific Rim	May-June Session*
378	Field Geology in Michigan	Great Lakes	May Session
389	Special Topics	Multiple	Multiple
390	Directed Individual Study	Great Lakes	Summer Session I and II
391	Research Methods I	Great Lakes	Summer Session I
392	Research Methods II	Great Lakes	Summer Session II
471	Conservation Biology	Great Lakes	Summer Session I
478	Alpine Ecology	Pacific Rim	Summer Session II
482	Restoration Ecology	Great Lakes	Summer Session II
499	Research	Great Lakes	Summer Session I and II

List of Au Sable Courses Alphabetical

Agroecology	Biol 305	Great Lakes	Summer Session I
Alpine Ecology	Biol 478	Pacific Rim	Summer Session II
Animal Ecology	Biol 321	Great Lakes	Summer Session I
Aquatic Biology	Biol 322	Great Lakes	Summer Session I
Conservation Biology	Biol/Geog 471	Great Lakes	Summer Session I
Directed Individual Study	Biol/Chem/Geog 390	Great Lakes	Summer Sessions I and II
Ecological Agriculture	Biol/Agric/Geog 303	Pacific Rim	Summer Session II
Ecological Analysis in R	Biol/EnvSt 331	Online	Summer Session II
Environmental Applications for GIS	Biol/EnvSt/Geog 362	Great Lakes	Summer Session II
Environmental Chemistry	Chem 332	Great Lakes	Summer Session II
Environmental Justice	Biol/EnvSt 354	Online	Summer Session II
Environmental Law and Policy	EnvSt 310	Online	May Session
Field Biology in Spring	Biol 361	Great Lakes	May Session
Field Botany	Biol 311	Great Lakes	Summer Session I
Field Geology in Michigan	EnvSt/Geog 378	Great Lakes	May Session
Field Techniques in Wetlands	Biol 358	Great Lakes	Summer Session I
Fish Ecology and Management	Biol 342	Great Lakes	Summer Session II
Forest Ecology	Biol 368	Pacific Rim	Summer Session II
Forest Management	Biol 371	Great Lakes	May Session
Geographic Information Systems	Biol/EnvSt/Geog 330	Online	Summer Session I
Insect Ecology	Biol 365	Great Lakes	May Session
International Development and Environmental Sustainability	Biol/Geog 304	Pacific Rim	Summer Session II
Marine Biology	Biol 318	Pacific Rim	Summer Session II
Marine Invertebrates	Biol 377	Pacific Rim	May-June
Marine Mammals	Biol 359	Pacific Rim	Summer Session II
Research	Biol/Chem/Geog 499	Great Lakes	Summer Sessions I and II
Research Methods I	Biol/EnvSt 391	Great Lakes	Summer Session I
Research Methods II	Biol/EnvSt 392	Great Lakes	Summer Session II
Restoration Ecology	Biol 482	Great Lakes	Summer Session II
Special Topics	Biol/EnvSt/Chem/Geog 389	Multiple	Multiple
Stream Ecology	Biol 323	Great Lakes	Summer Session II
Sustainability, Tropical Agriculture & Development	Biol/Agric/Geog 343	Costa Rica	May Session
Wildlife Ecology	Biol 345	Great Lakes	Summer Session II