

CONSERVATION STUDIES (CONS)

100 Level Courses

CONS 100: *Introduction to Field Conservation Ecology*. 2 credits.

In this immersive 1-week experience, students will acquire firsthand exposure to fieldwork in conservation and how conservation professionals contribute to survival of species in natural habitats. Through a combination of lectures, discussions, fieldwork and outdoor adventure students will be introduced to major concepts of ecology (including diversity, succession, species interactions, communities, populations and ecosystems) in the context of species and habitat conservation. Offered by Provost's Office. Limited to three attempts.

Recommended Prerequisite: Participation in the Washington Youth Summit on the Environment.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 110: *Special Topics in Conservation*. 1-3 credits.

Students acquire first-hand exposure to a specific topic in conservation and how conservation professionals contribute to the long-term survival of species. Through a combination of lectures, discussions, and field/lab work, students explore current questions, methods and applications related to a particular topic in conservation. Course Format: Sections of this Smithsonian-Mason School of Conservation course will be taught as an intensive, mixed-format (lectures, lab exercises, field exercises) offerings, in residential, full-day, 1-3-week sessions held at the 3,200 acre Smithsonian Conservation Biology Institute in Front Royal, VA. Students may also be required to complete pre-course reading assignments, and carry out and submit final projects during (or within six weeks after) the onsite session. Offered by Provost's Office. May be repeated within the degree for a maximum 6 credits.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

300 Level Courses

CONS 320: *Conservation in Practice*. 3 credits.

Work with a conservation mentor in a practicum experience. Create a portfolio documenting professional development. Notes: Must be taken concurrently with CONS 401, CONS 402, CONS 410, and CONS 490 or CONS 403, CONS 404, CONS 411, and CONS 491. Only offered through the Smithsonian-Mason Semester. Offered by Provost's Office. Limited to three attempts.

Recommended Prerequisite: Junior standing and a college level biological or

Recommended Corequisite: environmental science course. CONS 401, CONS 402, CONS 410, and CONS 490.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

400 Level Courses

CONS 400: *Conservation Seminar*. 2 credits.

Examines key conservation issues, based on readings and discussions from the primary literature. Teaches professional development skills for scientists in conservation including fundraising, poster presentations, and interpretation of findings for diverse audiences. Develops skills for obtaining internships, jobs, or graduate positions. Offered by Provost's Office. May be repeated within the degree for a maximum 6 credits. Equivalent to BIOL 351.

Registration Restrictions:

Required Prerequisites: BIOL 308^C, EVPP 301^C, 302^C, BIOL 377^C, EVPP 377^C or INTS 401^C.
^C Requires minimum grade of C.

Schedule Type: Seminar

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 401: *Conservation Theory*. 3 credits.

Introduces the field of conservation biology and science-based management of threatened wildlife, habitats, and human landscapes. Provides theoretical background for understanding the importance of biodiversity conservation and sustainability. Notes: Must be taken concurrently with CONS 320, CONS 402, CONS 410, and CONS 490. Only offered through the Smithsonian-Mason Semester. Students cannot get credit for this course and Biology 318 or NCLC 401. Offered by Provost's Office. Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: Junior standing and a college level biological or

Recommended Corequisite: environmental science course. CONS 320, CONS 402, CONS 410, and CONS 490.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 402: *Applied Conservation*. 4 credits.

A practical scientific approach to the nature of biodiversity and species loss. Students participate in field conservation exercises in a variety of settings, as well as endocrine and reproductive technology labs. Students apply field and laboratory experiences to understanding science's connection to management decision-making for conservation. Notes: Must be taken concurrently with CONS 320, CONS 401, CONS 410, and CONS 490. Only offered through the Smithsonian-Mason Semester. Offered by Provost's Office. Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: Junior standing and a college level biological or

Recommended Corequisite: environmental science course. CONS 320, CONS 401, CONS 410, and CONS 490.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 404: Biodiversity Monitoring. 4 credits.

Covers the assessment, monitoring and conservation of species and habitats as well as the tools for sampling species and habitats and the evaluation of those tools' effectiveness. Students use this practical, hands-on knowledge to prepare a series of reports and recommendations for future work. Offered by Provost's Office. Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Registration Restrictions:

Required Prerequisites: BIOL 308^C, EVPP 301^C, 302^C, BIOL 377^C, EVPP 377^C or INTS 401^C.

^C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 405: Landscape and Macrosystems Ecology. 4 credits.

Identify and characterize patterns in landscapes, investigate how they form and change over time, and consider anthropogenic influences. Model populations and communities across landscapes, and consider ways of managing them to achieve goals in managing species and ecosystem processes at local, regional, and continental scales. Offered by Provost's Office. Limited to three attempts.

Registration Restrictions:

Required Prerequisites: BIOL 308^C, EVPP 301^C, 302^C, BIOL 377^C, EVPP 377^C or INTS 401^C.

^C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 406: Small Population Management. 4 credits.

Investigates species vulnerability to extinction and the methodologies of preserving genetic diversity in small populations, both in the wild and in captivity. Teaches modeling and laboratory techniques that promote successful captive breeding, such as hormone analysis and assisted reproductive techniques. Examines captive species in the Smithsonian Conservation Biology Institute to learn husbandry practices and skills from keepers and biologists. Offered by Provost's Office. Limited to three attempts.

Registration Restrictions:

Required Prerequisites: BIOL 308^C, EVPP 301^C, 302^C, BIOL 377^C, EVPP 377^C or INTS 401^C.

^C Requires minimum grade of C.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 410: Human Dimensions in Conservation. 3 credits.

Provides sociological, local and global perspectives on conservation issues including adaptive management, conflict resolution, environmental economics, sustainability, public policy, environmental values and public opinion, and conservation ethics. Notes: Must be taken concurrently with CONS 320, CONS 401, CONS 402, and CONS 490. Only offered through

the Smithsonian-Mason Semester. Offered by Provost's Office. Limited to three attempts.

Mason Core: Social/Behavioral Sciences, Encore: Sustainability

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: Junior standing and a college level biological or

Recommended Corequisite: environmental science course. CONS 320, CONS 401, CONS 402, and CONS 490.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 440: Ecology Field Skills. 4 credits.

Directed field studies emphasizing ecology and behavior. Topics vary but include design of field manipulation, data collection and analysis, and introduction to organisms of study site. May include field trips. Offered by Provost's Office. Limited to three attempts. Equivalent to BIOL 357, EVPP 440.

Recommended Prerequisite: BIOL308 or BIOL310 (or equivalent course), or INTS 401 Conservation Biology

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 460: Statistics and Study Design in Ecology and Conservation. 3 credits.

An understanding of statistics and study design is essential to success in the fields of ecology and conservation. However, many of the analyses of greatest utility for ecological data are frequently unable to be addressed in introductory courses, while advanced courses often delve deeply into a limited set of techniques. This course bridges this gap: building on knowledge obtained in introductory courses, additional techniques appropriate to many forms of ecological data and more advanced approaches will be introduced. This course will address the fundamentals of study design, linking choices made when establishing a research project to the types of analyses appropriate to the chosen design. Emphasis will be placed on understanding the output of analyses, and separating statistical significance from biological or ecological significance. Additionally, skills in data manipulation, analyses, and graphics using the R statistical computing environment will be developed. Offered by Provost's Office. Limited to three attempts.

Registration Restrictions:

Required Prerequisites: BIOL 214^C, SOCI 313^C, STAT 250^C or CONS 404^C.

^C Requires minimum grade of C.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 480: Primate Behavior, Ecology and Conservation. 3 credits.

Using primates as a focal taxon, this two-week course examines the theoretical background on how ecology, behavior, and life history influence primate abundance, distribution, and population dynamics. Teaches data collection methods for primate behavior studies, survey methods and habitat assessment techniques. Topics include several

conservation-related case studies. Includes the development of a research proposal concerning primate socio-ecological strategies to address larger conservation issues. Notes: Students have the option to register for an “add-on” field experience course, CONS 497 “Primate Behavior and Conservation in Peru”, through the Mason Study Abroad Global Education Office (GEO). In this course, students conduct independent research on primate species in the wild. The course takes place at the Los Amigos Biological Research Station in Peru. Offered by Provost’s Office. Limited to three attempts.

Recommended Prerequisite: This course is open to 3rd and 4th year undergraduate students who have obtained a minimum GPA of 2.25. The course is also open to recent graduates, non-degree seeking students and non-Mason students.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 490: RS: Integrated Conservation Strategies. 3 credits. Integrates the course work of the Smithsonian-Mason Semester through study of current conservation issues. Students incorporate interdisciplinary aspects of conservation into a summative group case study on a chosen conservation issue and present formally before a faculty panel. Notes: Must be taken concurrently with CONS 320, CONS 401, CONS 402, and CONS 410. Only offered through the Smithsonian-Mason Semester. Offered by Provost’s Office. Limited to three attempts.

Mason Core: Encore: Sustainability, Synthesis

Specialized Designation: Green Leaf Related Course, Research/Scholarship Intensive

Recommended Prerequisite: Junior standing and a college level biological or

Recommended Corequisite: environmental science course. CONS 320, CONS 401, CONS 402, and CONS 410.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 491: RS: Conservation Management Planning. 4 credits. Explores strategies and decisions that help secure the long-term survival of threatened species and habitats. Focuses on the planning tools necessary to define and set conservation goals and quantitatively assess species and areas of conservation value and prioritization. Offered by Provost’s Office. Limited to three attempts.

Mason Core: Encore: Sustainability, Synthesis

Specialized Designation: Green Leaf Related Course, Research/Scholarship Intensive

Registration Restrictions:

Required Prerequisites: BIOL 308^C, EVPP 301^C, 302^C, BIOL 377^C, EVPP 377^C or INTS 401^C.

^C Requires minimum grade of C.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 496: Research in Conservation. 6 credits.

One-on-one research experience with a conservation practitioner over 5 weeks (about 36 hours per week) on a conservation research project associated with that practitioner’s program. Offered by Provost’s Office. May be repeated within the degree for a maximum 12 credits.

Mason Core: Capstone

Registration Restrictions:

Required Prerequisites: BIOL 308^C, EVPP 301^C, 302^C, BIOL 377^C, EVPP 377^C or INTS 401^C.

^C Requires minimum grade of C.

Schedule Type: Independent Study

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 497: Special Topics in Conservation. 1-4 credits.

Topics of current relevance to the field of conservation. Offered by Provost’s Office. May be repeated within the degree for a maximum 9 credits.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 498: Internship. 1-3 credits.

Directed readings and final reflective paper or project in conjunction with an internship subject to instructor approval. Permission to enroll must be obtained from the Mason Center for Conservation Studies at least two weeks prior to the start of the semester. Offered by Provost’s Office. May be repeated within the degree for a maximum 9 credits.

Schedule Type: Internship

Grading:

This course is graded on the Undergraduate Regular scale.

CONS 499: Independent Study/Research. 1-3 credits.

An independent project or directed exploration into an area of conservation not covered by other courses. Offered by Provost’s Office. May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: Permission of instructor.

Schedule Type: Independent Study

Grading:

This course is graded on the Undergraduate Regular scale.

500 Level Courses

CONS 540: Ecology Field Skills. 4 credits.

Graduate level directed field studies emphasizing ecology and behavior. Topics vary but include design of field manipulations, data collection and analysis, and introduction to organisms of study site. May include field trips. Offered by Provost’s Office. May not be repeated for credit.

Recommended Prerequisite: BIOL 308 or BIOL 310, or EVPP 305 and EVPP 306, or INTS 401 or equivalent course

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale.

CONS 560: *Statistics and Study Design in Ecology and Conservation*. 3 credits.

An understanding of statistics and study design is essential to success in the fields of ecology and conservation. However, many of the analyses of greatest utility for ecological data are frequently unable to be addressed in introductory courses, while advanced courses often delve deeply into a limited set of techniques. This course bridges this gap: building on knowledge obtained in introductory courses, additional techniques appropriate to many forms of ecological data and more advanced approaches will be introduced. This course will address the fundamentals of study design, linking choices made when establishing a research project to the types of analyses appropriate to the chosen design. Emphasis will be placed on understanding the output of analyses, and separating statistical significance from biological or ecological significance. Additionally, skills in data manipulation, analyses, and graphics using the R statistical computing environment will be developed. Offered by Provost's Office. Limited to three attempts.

Registration Restrictions:

Required Prerequisites: BIOL 214^C, SOCI 313^C, STAT 250^C or CONS 404^C.
^C Requires minimum grade of C.

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale.

CONS 580: *Primate Behavior, Ecology and Conservation*. 3 credits.

Using primates as a focal taxon, this two-week course examines the theoretical background on how ecology, behavior, and life history influence primate abundance, distribution, and population dynamics. Teaches data collection methods for primate behavior studies, survey methods and habitat assessment techniques. Topics include several conservation-related case studies. Includes the development of a research proposal concerning primate socio-ecological strategies to address larger conservation issues. Notes: Students have the option to register for an "add-on" field experience course, CONS 497 "Primate Behavior and Conservation in Peru", through the Mason Study Abroad Global Education Office (GEO). In this course, students conduct independent research on primate species in the wild. The course takes place at the Los Amigos Biological Research Station in Peru. Offered by Provost's Office. May not be repeated for credit.

Recommended Prerequisite: This course is open to graduate students who have obtained a minimum GPA of 3.0. The course is also open to non-Mason students.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale.

CONS 597: *Special Topics in Conservation*. 1-4 credits.

Topics of current relevance to the field of conservation. Offered by Provost's Office. May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale.

600 Level Courses

CONS 625: *Statistics for Ecology and Conservation Biology*. 3 credits.

Provides an overview of experimental design and analysis techniques used in cutting-edge ecological research and conservation. Focuses on increasing knowledge of statistical tests, interpretation of results, and ability to disseminate and clearly explain these results. Students gain an overview of applied monitoring and analysis techniques such as distance sampling, genetic analysis, niche and species distribution modeling, and spatial analysis. Notes: Offered through the Smithsonian-Mason School of Conservation in cooperation with the Smithsonian Conservation Biology Institute on site in Front Royal, VA. Course Format: This course is taught as an intensive, mixed format (lectures and computer work) offering, in a residential full-day (8:30am-6pm), 1 week, 10 day or 2 week session. Students complete pre-course assignments, and are graded in participation, computer exercises and a final exam. Some night sessions may occur. Offered by Provost's Office. May not be repeated for credit.

Recommended Prerequisite: Basic statistics course

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale.

CONS 630: *Species Monitoring & Conservation*. 3 credits.

Explores monitoring and conservation research methods and approaches for specific taxa through lectures, case studies, lab exercises, and field work. Focuses on conservation science and conservation outreach techniques. Notes: Offered through the Smithsonian - Mason School of Conservation Studies in cooperation with the Smithsonian Conservation Biology Institute on site in Front Royal, VA. Course Format: This course

is taught as an intensive, mixed format (lectures and computer work) offering, in a residential full-day (8:30am-6pm), 1 week, 10 day or 2 week session. Students complete pre-course assignments, and are graded in participation, computer exercises and a final exam. Some night sessions may occur. Offered by Provost's Office. May be repeated within the degree for a maximum 9 credits.

Recommended Prerequisite: A general biology (or relevant species-related) course and a statistics course, or permission of instructor. Prior coursework in environmental science, zoology and ecology recommended.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale.

CONS 645: *Estimating Animal Abundance and Occupancy*. 3 credits.

Provides a strong theoretical and analytical background to the current and accepted methods of estimating population parameters including abundance, survival, and population change. The course teaches study design, implementation and analysis of data from distance sampling, mark-recapture, and occupancy modeling techniques, with a strong focus on the practical use of field data in the programs DISTANCE MARK and PRESENCE. Notes: Offered through the Smithsonian-Mason School of Conservation in cooperation with the Smithsonian Conservation Biology Institute on site in Front Royal, VA. Course Format: This course is taught as an intensive, mixed format (lectures and computer work) offering, in a residential full-day (8:30am-6pm), 1 week, 10 day or 2-week session. Students complete pre-course assignments, and are graded in participation, computer exercises and a final exam. Some night sessions may occur. Offered by Provost's Office. May not be repeated for credit.

Recommended Prerequisite: College-level introductory statistics course.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale.

CONS 697: *Special Topics in Conservation*. 1-3 credits.

Topics of current relevance to the field of conservation. Notes: May be repeated for credit with approval of the Smithsonian Mason School of Conservation. Notes: May be repeated for credit with approval of the Smithsonian-Mason School of Conservation. Offered through the Smithsonian-Mason School of Conservation in cooperation with the Smithsonian Conservation Biology Institute on site in Front Royal, VA. Course Format: This course is taught as an intensive, mixed

format (lectures and computer work) offering, in a residential full-day (8:30am-6pm), 1 week, 10 day or 2 week session. Students complete pre-course assignments, and are graded in participation, computer exercises and a final exam. Some night sessions may occur. Offered by Provost's Office. May be repeated within the degree for a maximum 9 credits.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale.