

LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date:	Senate Action Date:
		09-60	AP-4/6/10	App-4/20/10

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

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Proposing Department/Unit Biology	Phone 724-357-2484

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

<b>1. Course Proposals (check all that apply)</b> <input checked="" type="checkbox"/> New Course <input type="checkbox"/> Course Prefix Change <input type="checkbox"/> Course Deletion <input type="checkbox"/> Course Revision <input type="checkbox"/> Course Number and/or Title Change <input type="checkbox"/> Catalog Description Change		
		BIOL 474/574 Spring Flora of the Northeastern U.S.
<u>Current</u> Course prefix, number and full title		<u>Proposed</u> course prefix, number and full title, if changing
<b>2. Additional Course Designations: check if appropriate</b> <input type="checkbox"/> This course is also proposed as a Liberal Studies Course. <input type="checkbox"/> Other: (e.g., Women's Studies, Pan-African) <input type="checkbox"/> This course is also proposed as an Honors College Course.		
<b>3. Program Proposals</b> <input type="checkbox"/> New Degree Program <input type="checkbox"/> Program Title Change <input type="checkbox"/> Program Revision <input type="checkbox"/> New Minor Program <input type="checkbox"/> New Track <input type="checkbox"/> Other		
<u>Current</u> program name		<u>Proposed</u> program name, if changing
<b>4. Approvals</b>		
Department Curriculum Committee Chair(s)	<i>Sandra Dewell</i>	9/16/09
Department Chair(s)	<i>[Signature]</i>	10/5/09
College Curriculum Committee Chair	<i>Anne Kondo</i>	2/15/10
College Dean	<i>Mary Lou Young</i>	2/15/10
Director of Liberal Studies *		
Director of Honors College *		
Provost *		
Additional signatures as appropriate: (include title)		
UWUCC Co-Chairs	<i>Gail S Sechrest</i>	4/9/10

\* where applicable

APR 09 2010

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Liberal Studies

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**Course Syllabus: BIOL 474 Spring Flora of the Northeastern U.S.**

**Course Credit: 2c-3l-3cr**

**Prerequisite: BIOL 210 or permission of instructor**

**Date: Summer Intersession**

**I. Catalogue Description**

A comprehensive survey of the emerging spring flora in the northeastern portion of North America (with emphasis on the herbaceous plants of Pennsylvania).

**II. Course Objectives**

As a result of this course students will be able to:

1. discuss the role spring flora play in the ecosystems of Pennsylvania.
2. explain the various reproductive strategies utilized by emerging spring plants
3. report on the various herbal, medicinal and nutritional qualities of the reported flora
4. examine, collect and preserve representative spring flora in Pennsylvania.
5. utilize the Flora Formula on the indigenous spring flora in Pennsylvania.
6. present a presentation to the class on one-four Families of indigenous plants (eg: Rosaceae).
7. produce a descriptive listing of the common name of all spring flora presented in the class.
8. identify the Families of the major spring flora represented in the class
9. identify the indigenous spring flora of western Pennsylvania in the field.

**III. Detailed Course Outline**

Note: The topics are listed in the intended order of presentation but may be rearranged if necessary. There are one 100 pt. written exams and two 100 pt. field practical exam in this course.

- A. Introduction to the terms and requirements of the course (2 academic hrs.)
1. Introduction (Terminology, Variation, & Features of Spring Flora)
  2. Morphological characteristics and lifecycles of Seedless Vascular Plants
- B. Instructor and student presenter will lead discussion on the morphological characteristics and habitats of various plant families (7 academic hrs.)
1. Violaceae, Fumariaceae
  2. Liliaceae, Aristolochiaceae
  3. Caprifoliaceae, Lamiaceae. & Plantaginaceae
  4. Asteraceae, Droseraceae & Sparganiaceae
  5. Orchidaceae, Campanularaceae, & Pyrolaceae
  6. Caryophyllaceae, Clusiaceae, Araliaceae, Dipsacaceae
  7. Cruciferaeae, Onagraceae & Menispermaceae
- C. Practical Fields Midterm on local spring flora (2 academic hrs)
- D. Saturday Field Work in Allegheny National Forest (7 academic hrs)
- E. Instructor and student presenter will lead discussion on the morphological characteristics and habitats of various plant families (7 academic hrs.)
1. Scrophulariaceae, Solanaceae, Araceae & Oleaceae
  2. Leguminaceae, Oxalidaceae, Rhamnaceae & Myricaceae

3. Ericaceae, Polemoniaceae & Asclepiadaceae
4. Rosaceae, Grossulariaceae & Saxifragaceae
5. Ranunculaceae, Geraniaceae, Polygalaceae
6. Primulaceae, Boraginaceae, Polygonaceae, Urticaceae
7. Umbrelliferaceae, Berberidaceae, Rubiaceae, Orobanchaceae

F. Laboratory sessions: Students will observe and report on habitat restrictions and morphology of representatives of the spring flora in the area.

1. Spring flora on IUP's campus (14 academic hrs.)
2. Spring flora at Blue Spruce Park
3. Spring flora at Yellow Creek
4. Spring flora at Sun Cliff
5. Spring flora at Dilltown Creek
6. Spring flora at Vintondale Bog
7. Spring flora at McConnals Mills
8. Spring flora at Pine Creek Park
9. Spring flora at Jennings Park
10. Spring flora at Ohiopyle
11. Spring flora at Canoe Creek
12. Spring flora at Linn Run Park
13. Spring flora at Crooked Creek
14. Spring flora at Bedford Cliffs

G. Final Written Exam on large spring flora group (1 academic hr.)

H. Culminating Activity - Practical Field Exam on local spring flora (2 academic hrs)

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Total hours 42

#### IV. Evaluation Methods

**Field Practicals (2)** (200 pts) This field exam will be conducted in the middle and at the end of the course

**Written Final** (100 pts) This exam will be given during the final exam period at the end of course.

**Daily Quizzes** (70 pts) At the beginning of the class following each presentation, students will take a short quiz based on the material from the previous lesson. Quiz

scores will be totaled together for points. Missed quizzes can not be made up.

**Oral Presentation** (30 pts) Each class member will be assigned a specific grouping of plants to research and presentation to the class. The student presentations will be given during the lecture segment of the course.

**Collection of local Herbaceous Plants** (50 pts). Each member of the class will collect and correctly preserve a representative spring flora from the grouping he or she has selected. If 10 nonthreatened herbaceous species are not found, the participant can get permission from the instructor to add other wildflowers to the collection to bring the total to 10 (by using different plant species from a listing of representatives in the packet). The collections must be correctly displayed as regulation herbarium sheets and correctly identified with the scientifically approved label. Further, each specimen will have with it a description of where it was found and other plot information disseminated in class.

V. Grading Scale 450-410(A), 419-380(B), 379-340(C), 339-300(D), 299-0(F)

**VI. Attendance:** Because each class is equivalent to a weeks worth of work, a missed class is like missing a week of school. Your attendance is important to both class and field trips for success in the class. If you miss class without a legitimate excuse, 30 points will be removed from your overall point count (for each class missed)!

**VII. Required Text**

- Newcomb, L. (1989) Newcomb's Wildflower Guide, Little, Brown and Company
- Wildflowers of Pennsylvania (2001) Botanical Society of Western Pennsylvania, Pittsburgh, Pa.

**Strongly Recommended Text**

- Rhoads & Block (2000) The Plants of Pennsylvania, University of Pennsylvania Press, Philadelphia.
- Peterson, R. & M. McKenny (1996) Field Guide to Wildflowers: NE/NC N. Am., Houghton Mifflin

**VIII. Special Resource Requirements**

No elaborate equipment is necessary for this course. Students, however, will be given an inexpensive field lens, plant press and a field bag. Since labs or field work are planned each day, biology vans will be use frequently. Students will be expected to dress appropriately for the outdoor (raingear, long sleeves & long trousers, waterproof boots are encouraged); insect (especially tick) spray recommended.

**IX. Student's Class Presentation**

Sometime during the professor's lecture, a student will present a 15 minute talk on a specific family of seedless vascular plants. Students will be graded on content and style. Well-planned presentations could earn up to 30 points for the student.

**X. Bibliography**

Clemants & C. Gracie, 2006, Wildflowers in the Field and Forest: A Field Guide to the Northeastern United States. Oxford University Press, London GB.

Forey, P. (1990). American Nature Guides: Wildflowers. Dragon's World Ltd, London G.B.

Hogan S., 2003, Flora, A Gardener's Encyclopedia, Timberland Press Inc. Portland OR..

Leopold D.J., 2005, Native Plants of the Northeast, Timberland Press, Portland OR.

Mabey R., B. Gibbons, G. L. Jones, 1999, Flora Britannica of Spring Flora, Trafalgar Square Publishers, London, G.B.

Niering, W.A. & N. C. Olmstead (2006) National Audubon Society Field Guide to Wildflowers: Eastern Region, Random House, New York, N.Y.

Peterson T. R. (2008), Roadside Wildflowers, Houghton Mifflin Co. Boston, MA.

Peterson, R.T. & M. McKenny, 2008 A Field Guide to Wildflowers In the Northeast, Houghton Mifflin Company, New York N.Y.

Stevermark J. A. 1993, Northeastern Flora: The Illustrated Book of Wildflowers and Shrubs. Stackpole Books, Mechanicsburg, Pa.

## VIII. Special Resource Requirements

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## IX. Bibliography

- Clemants, R., Gracie, C. (2006) *Wildflowers in the Field and Forest: A Field Guide to the Northeastern United States*. London G.B.: Oxford University Press.
- Forey, P. (1990) *American Nature Guides: Wildflowers*. Dragon's World Ltd, London G.B.
- Hogan, S. (2003) *Flora, A Gardener's Encyclopedia*, Timberland Press Inc. Portland OR..
- Leopold, D.J. (2005) *Native Plants of the Northeast*, Timberland Press, Portland OR.
- Mabey, R., Gibbons, B., Jones, G. L. (1999) *Flora Britannica of Spring Flora*, London, G.B.: Trafalgar Square Publishers.
- Niering, W.A., Olmstead, N. C. (2006) *National Audubon Society Field Guide to Wildflowers: Eastern Region*, New York, N.Y.: Random House.
- Peterson, T. R. (2008) *Roadside Wildflowers*, Boston, MA: Houghton Mifflin.
- Peterson, R.T., McKenny, M. (2008) *A Field Guide to Wildflowers In the Northeast*, New York N.Y.: Houghton Mifflin
- Stevermark J. A. (1993) *Northeastern Flora: The Illustrated Book of Wildflowers and Shrubs*. Mechanicsburg, Pa.: Stackpole Books.

## 2. Course Analysis Questionnaire

### Section A: Details of the Course:

A1. Spring Flora of the Northeastern U.S. is an elective for the B.S. in Biology, B.A. in Biology, B.S. in Natural Science, and B.S. in Education – Secondary Biology. The course will also be available for students outside Biology and through Continuing Education provided the prerequisite is met. Currently, no course addresses the specific content developed in this course. This course is a new course that strengthens the field science offering of the Biology Department. It is offered only during the summer intersession period when the blossoming of spring wild flowers is most abundant. The timing allows for in-depth identification and habitat research that is not possible at other times of the year.

A2. No, this course does not require changes in the content of existing courses or requirements for a program.

A3. This course has been offered as BIOL 481-581 for three semesters (summer intersession 2005, summer intersession 2007, and summer intersession 2008) with student enrollments running 12('05), 14 ('07) and 17 ('08).

A4. Yes, Spring Flora of the Northeastern U.S. will be offered as an upper- level undergraduate and a graduate course.

A5. This course may not be taken for variable credit.

A6. This course is offered at a number of Colleges and Universities-examples of the institutions include:

- Texas A & M University-Bio 301-Taxonomy of Flowering Plants (botany.csdl.tamu.edu/flora/TFP/TFPHOME)
- University of South Carolina - BIOL 527 Spring Flora (cricket.biol.sc.edu/acmoore/527/syllabus\_spr\_2009)
- Saint Louis University BIOL433-1N: Spring Flora of the Ozarks (slu.edu/x14904.xml)
- Cleveland State University BIO 173 Spring Flora (csuohio.edu/undergradcatalog/courses/courindex/bio)
- Indiana University BIO 560 Spring Flora (indiana.edu/deanfac/blsp)
- Southwestern Michigan BIO 120 Spring Flora (botany.csdl.tamu.edu/FLORA/TFP/TFPHOME)

A7. No accrediting authority or external agency requires this course. Spring Flora of the Northeastern U.S. is an important course for biology majors who are specializing in nature studies (Forestry, Park Ranger, Naturalist, Ecologist) or acquiring certification to teach introductory, environmental and field courses in high school or college.

### **Section B: Interdisciplinary Implications**

B1. The course will be taught by one professor.

B2. Spring Flora of the Northeastern U.S. is a unique course with content not met by existing courses at IUP.

B3. This course will not be cross listed. It will be made available to students outside of Biology (geology, elementary education, natural science, geography) and as an option for the College of Continuing Education, provided the students meet the prerequisite of Botany (BIOL 210).

B4. The course will also be available for students in Continuing Education provided the prerequisite is met.

**Section C: Implementation:**

C1. Faculty resources are adequate to teach this course. This course will be taught only during the summer pre-session.

C2. Resources in the department are currently adequate to teach this course. The class will utilize the department's computers for lesson (Power Point) preparation and vans for transportation to field sites.

C3. Resources for this course are not funded by a grant.

C4. This course will be offered in the summer pre-session semester as determined by the department chairperson. It is taught during pre-session when the region's floral populations are most abundant. Identification of plants is generally based on flower structure and these plants only flower in spring.

C5. One section of Spring Flora of the Northeastern U.S. can be offered every year in the summer pre-session semester.

C6. Student enrollment in this course will be limited by van space (2 12 passenger vans) and, therefore, a limit of 22 students (and one additional van driver) will be established.

C7. No professional society recommends enrollment parameters for this course.

**Section D: Miscellaneous**

D1: This course will be popular with students attracted to the field studies aspect of biology and with those interested in teaching students about natural environments.

D2: Letters of Support or Acknowledgement. No other department or programs are affected by this course

**Part III. Letters of Support or Acknowledgment**

No other departments or programs are affected by this course.