

Biol 203
Introductory Biology III (Botany)

Spring 2001

Instructor: Anu Singh-Cundy

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Class meets: MWRF at 11:00 am for lectures, and M/W from 1:00 to 4:00 pm for lab

Office hours: M, noon-1pm; TR, 1-2pm; F: noon-2pm

Textbook: Biology of Plants, by Raven, Evert, and Eichhorn, Worth Publishers, 6th edition (1999); additional reading will be assigned, and made available at the reserve desk in Wilson Library.

Ancillary material: These will be sold at cost through the biology department; the instructor will give you the sale schedule.

--Plant Biology, Biol 203 Laboratory Manual (Morgan, 2000); required for lab portion of this course

--Lecture Supplement for Biol 203 (Singh-Cundy and others); purchase optional; contains summary sketches of most lectures.

Course Objectives: An introduction to plant biology, including a survey of plant diversity and the evolutionary history of plants, plant physiology, plant growth and development, and the place of plants in our lives. Plant anatomy and morphology will be learned mostly through lab exercises.

I. Tentative Schedule:

| Date | Topics | Assigned reading |
|------------------------|---|---|
| April 4 | About this course; introduction to the biology of plants | Ch. 1 |
| April 5, 6 | The origin of major life forms Plant Diversity and Classification Evolutionary innovations among protists: sexual reproduction and diploidy The photosynthetic protists: general characteristics | Ch.12: pg. 236-238, 242-243; Ch. 13: pg. 261-266, 276-279; Ch. 9: pg. 171-172, 180-181 |
| April 9, 11, 12, 13 | Algae: red, brown, and green Fungi: general characteristics, major groups, ecological and economic importance; lichens, mycorrhizae | Ch. 16: pg. 347-350, 357-360, 364; Ch. 17: pg.370-371; 379-399; Ch. 15: pg. 306-312, 334-346, read rest selectively for lab |

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| April 16, 18, 19 | Emergence of land plants; adaptations to terrestrial life Bryophytes and Seedless Vascular Plants: general features, distinctive features of life cycles, main groups | Ch. 18: pg. 400-407, 418-419, rest for lab Ch. 19: pg. 424-431, 440-441, rest for lab |
| April 20 (F) | Exam #1 ('Evolution of major life forms' to 'Seedless vascular plants') | |
| April 23, 25, 26, 27 | Gymnosperms: general characteristics, life cycle Angiosperms: evolutionary innovations displayed by flowering plants | Ch. 20 Ch. 21 |
| April 30 May 2 | Angiosperm life cycle: pollination, fertilization, structure and development of seed and fruit | Ch. 21 Ch. 23: 554-557, 562-569 |
| May 3, 4 | Anatomy and morphology of flowering plants | Ch. 24; Ch. 27 for reference (mostly for lab) |
| May 7, 9, 10 | Photosynthesis: non-cyclic photophosphorylation; photorespiration; C4 and CAM metabolism | Ch. 7 |
| May 11 | Factors affecting photosynthesis | |
| May 14 (M) | Exam #2 ('Gymnosperms' to 'Photosynthesis') | |
| May 16 17, 18 | Water relations and fluid transport | Ch. 31 |
| May 21, 23, 24, 25 | Plant development; regulation of plant growth and development by plant hormones | Ch. 28 |
| May 28 (M) | <i>Memorial Day (no class)</i> | |
| May 30, 31 | Plant response to the environment: photoperiodism | Ch. 29 |
| June 1, 4, 6 | Tropisms and other plant movements | |
| June 7, 8 | Plants and people: the place of plants in agriculture, industry, and human culture | Ch. 34 |
| June 11 8:00-10:00 am | Final Exam ('Plant development' to Plants and people') | |

II. Exams and other assignments:

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| exam #1 | 100 points |
| exam #2 | 100 points |
| final exam | 120 points |
| lab exams I and II (30 + 70) | 100 points |
| lab reports I and II (30 + 50) | 80 points |
| total: | <hr/> 500 points |

III. Grading scale:

| <u>% score</u> | <u>letter grade</u> |
|------------------------------|---------------------|
| greater than 93 | A |
| greater than 89 and up to 93 | A- |
| greater than 85 and up to 89 | B+ |
| greater than 81 and up to 85 | B |
| greater than 77 and up to 81 | B- |
| greater than 74 and up to 77 | C+ |
| greater than 71 and up to 74 | C |
| greater than 68 and up to 71 | C- |
| greater than 65 and up to 68 | D+ |
| greater than 62 and up to 65 | D |
| 60 and up to 62 | D- |
| below 60 | F |