

Comparative Morphology of Plants—BSC 429

Textbook: Morphology and Evolution of Vascular Plants, 3rd ed., by Gifford and Foster

Chapter	Pages	# Quest.	Topic
1	1-10	2	The Science of Plant Morphology
2	12-20	1	Origin of Land Plants . . .
3	23-46	4	The Vegetative Sporophyte
4	49-55	1	Sporangia
5	57-65	1	Gametangia
6	67-74	1	Embryology
7	75-86	2	Early Vascular Plants
8	89-102	3	Psilophyta
-	(93)	(15)	Examination I (30 points)
9a	105-125	3	Lycophyta
9b	125-143	3	Lycophyta
9c	143-167	4	Lycophyta
10a	175-191	3	Sphenophyta
10b	191-204	2	Sphenophyta
-	(95)	(15)	Examination II (30 points)
11	209-219	1	Filicophyta: Ferns
12	221-241	4	Filicophyta: Eusporangiate Ferns
13a	245-272	4	Filicophyta: Leptosporangiate Ferns
13b	272-284	2	Filicophyta: Leptosporang. Ferns (excl. 284-297)
13c	297-319	4	Filicophyta: Leptosporangiate Ferns
-	(96)	(15)	Examination III (30 points)
14	327-343	4	General Morphology of Gymnosperms . . .
15a	345-366	4	Pteridospermophyta (Seed Ferns) . . .
15b	366-381	3	Pteridospermophyta (Seed Ferns) . . .
16	385-399	4	Ginkgophyta
-	(70)	(15)	Examination IV (30 points)
17a	401-426	5	Coniferophyta
17b	426-450	5	Coniferophyta
18	455-481	5	Gnetophyta
-	(78)	(15)	Examination V (30 points)
19a	485-505	2	Magnoliophyta (Angiosperms)
19b	505-522	2	Magnoliophyta (Angiosperms)
19c	522-541	2	Magnoliophyta (Angiosperms)
19d	542-554	3	Magnoliophyta (Angiosperms)
20a	563-588	3	The Reproductive Cycle in Angiosperms
20b	588-612	3	The Reproductive Cycle in Angiosperms
-	(123)	(15)	Examination VI (30 points); Final examination (20 points)

Six examinations will be given. The examinations will comprise three essay questions

each with each question graded for up to 10 points (180 points total). A question bank from which a subset of questions for each examination will be chosen is posted on this website. You should consider these questions carefully while reading the assignments. A final examination question graded for up to 20 points is also posted in the question bank. You should consider this question throughout the course so that you can render a robust answer at the end.

These examinations may be the point of greatest interaction between us in the course. You should answer the questions thoroughly. A minimal answer may be “correct,” but that in itself does not constitute “A” work. Strive to express yourself clearly in formal English. What you write will be the only demonstration of your mastery of the material on which I can render a judgement (i.e., a grade).

Examinations must be your own work. Although you may use your text in answering these questions, the final answers must be in your own words. You may not copy or paraphrase from any source. Be particularly careful not to lift the organization from the text and simply rewrite the sentences. That does not adequately demonstrate your understanding of the material, and it falls in the category of academic dishonesty.

You may elect, at the end of the course, to replace any three graded answers on your examinations with responses to different questions of your choice from the test bank corresponding to the respective examination area for which the replacement is being made. Just send your responses to me via email within WebCT. The final examination will not be replaced.

The following grading scale is applied:

- A: 90% (180–200)
- B: 80% (160–179)
- C: 70% (140–159)
- D: 60% (120–139)

Comparative Morphology of Plants Laboratory—BSC 429L

Textbook: *Morphology and Evolution of Vascular Plants*, 3rd ed., by Gifford and Foster
One credit hour. Corequisite for BSC 429.

The laboratory comprises six exercises corresponding to the six parts of the lecture course. You are asked to download the set of photographs for each exercise and apply labels as directed in the detailed instructions. Each exercise is graded for up to 20 points distributed as stipulated in the detailed instructions accompanying the exercises (total 120 points). Support for these exercises comes from photographs and line drawings in the lecture text. The graphics programs that come with operating systems are adequate for labeling the photographs, although you may want to use more sophisticated software. When you have finished labeling the photographs, you must upload them back into WebCT as .jpg files (the format in which they were supplied to you). Note that you must upload the photographs individually into an area of WebCT that will allow you to assemble them for final submission. Then you must submit all the photographs for each assignment as a unit.

The following grading scale is applied:

- A: 90% (108–120)
- B: 80% (96–107)
- C: 70% (84–95)
- D: 60% (72–83)

1. Exercise set I
 - a. Plant anatomy (6 points)
 - b. Sporangia & gametangia (4 points)
 - c. Psilophyta (10 points)
2. Exercise set II
 - a. Lycophyta (15 points)
 - b. Sphenophyta (5 points)
3. Exercise set III
 - a. Eusporangiate ferns (7 points)
 - b. Leptosporangiate ferns (13 points)
4. Exercise set IV
 - a. Introduction to gymnosperms (3 points)
 - b. Cycads (9 points)
 - c. Ginkgophyta (8 points)
5. Exercise set V
 - a. Coniferophyta (15 points)
 - b. Gnetophyta (5 points)
6. Exercise set VI
 - a. Angiosperm male reproductive system (5 points)
 - b. Angiosperms female reproductive system (10 points)
 - c. Angiosperm embryogeny (5 points)

Comparative Morphology of Plants—BSC 529

Textbook: Morphology and Evolution of Vascular Plants, 3rd ed., by Gifford and Foster

Chapter	Pages	# Quest.	Topic
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3	23-46	4	The Vegetative Sporophyte
4	49-55	1	Sporangia
5	57-65	1	Gametangia
6	67-74	1	Embryology
7	75-86	2	Early Vascular Plants
-	-	-	First Graduate Reading and Critique (10 points)
8	89-102	3	Psilophyta
-	(93)	(15)	Examination I (30 points)
9a	105-125	3	Lycophyta
9b	125-143	3	Lycophyta
9c	143-167	4	Lycophyta
10a	175-191	3	Sphenophyta
10b	191-204	2	Sphenophyta
-	-	-	Second Graduate Reading and Critique (15 points)
-	(95)	(15)	Examination II (30 points)
11	209-219	1	Filicophyta: Ferns
12	221-241	4	Filicophyta: Eusporangiate Ferns
13a	245-272	4	Filicophyta: Leptosporangiate Ferns
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An article from a 2001 issue of the American Journal of Botany that addresses the history, philosophy, and future of plant morphology along with a detailed example of a critique of lower vascular plant morphology is posted on the WebCT site for you to download and read. You are asked to write a summary and critique on each of two halves of the article, each to be no less than 1500 words. These reports will be graded for up to 10 and 15 points respectively.

Course objectives. You should gain from this course a thorough understanding of the life cycles and vegetative morphology of extant vascular plants and their important fossil ancestors. You should have a good overview sense of the evolution and evolutionary trends of vascular plants.

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