Week: Lecture topic (movie suggestions)

March 31 – April 2
A brief history of monsters: Personal to apocalyptic
Vampires, werewolves; The immune system; disease as a monster.
(The Wolfman, 1941 ★★★★)

April 7 - 9
Real Big Monsters: The evolution of gigantism; Dinosaurs (Jurassic Park, 1993 ★★★)
Cursorial vertebrates: Scaling, Biomechanics of musculoskeletal systems
(Godzilla, 1954 ★★★★; Godzilla, 1998 ★; see also Night of the Lepus ★★★)

April 14 - 16
The physiology of vertebrate gigantism: scaling of the cardiovascular, respiratory, and nervous systems (King Kong, 1932 ★★★★; The Deadly Mantis, 1957 ★★)
Quiz #1 (50 points);

April 21 - 23
Cursorial invertebrates: walking, running, and adhesion (Them! 1954 ★★★; see also Tarantula, 1955 ★★★)
The physiology of invertebrate gigantism: scaling of the cardiovascular, respiratory, and nervous systems. (Mothra, 1962 ★★★)

April 28 – 30
Aquatic invertebrates: Diving Physiology, Reynolds number, flow, and locomotion. (It Came From Beneath the Sea, 1955 ★)

Aquatic vertebrates: Diving Physiology, Reynolds number, flow, and locomotion. (Jaws 1975 ★★★★; Jurassic World 2015 ★★★; see also Creature From the Black Lagoon 1954 ★★★; The Shape of Water 2017 ★★★★★)

May 5 – 7
Volant vertebrates and invertebrates: Biomechanics and aerodynamics (Rodan, 1953 ★★; Jurassic Park III; Jonny Quest: Turu the Terrible, 1964; The Deadly Mantis, 1957; ★★; see also Mothra, 1962 ★★★)
Quiz #2 (50 points)
May 12 – 14  The development of monsters: Eggs, babies, and my how you’ve grown! (Alien, 1982; see also Twenty Million Miles to Earth, 1957)

May 19 – 21  Commie monsters: Parasitoids and other body snatching life cycles. (Invasion of Body Snatchers 1956; see also Invasion of Body Snatchers, 1978; The Thing, 1951 & 1985; Invasion of Body Snatchers, 1978; see also Invasion of Body Snatchers, 1978; The Thing, 1951 & 1985)
Exobiology: Critters from other planets.

May 26 – 28  Monster trophic relationships, relic populations, and MVP (The X-Files, “Big Blue”; Megalodon: The Monster Shark Lives, 2014; see also The Secret Of The Loch, 1934; Kong, Skull Island 2014)

June 2 - 4  ☁ Quiz #3 (50 points) ☁
☁ Papers due 11 June☁

Grading:

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<td>Quizzes</td>
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<td>Paper</td>
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<td><strong>Total</strong></td>
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Quizzes will be short answer/essay.

The grading scale for the course will be no stricter than 90-100% A- or better, 80-90% B- or better, 70-80% C- or better, 60-70% D- or better, 0 - 60% F. This grading scale may be relaxed, based on my perception of the relative difficulty of the exams.

Student Learning Outcomes
Exams will be short answer/essay/fill-in blank, and will test your knowledge and comprehension of biomechanical and physiological systems and the inherent limits of those systems. All students will write a short paper describing the biological plausibility (or lack thereof) of a fictional, mythological, or speculative monster/cryptic species (e.g., mermaids), and demonstrate the ability to

- conduct an independent review of the primary scientific literature;
- summarize the current state of what the scientific community knows, and how that compares to what the fiction proposes or what the public believes.

At the end of this course, you should be able to, among other things:

- explain the biomechanical impossibilities of various monsters;
- explain, in ecological terms, the impossibilities of various monsters;
- explain the ecological/evolutionary reasons a variety of “cryptic species” are highly improbable;
- explain the biological and psychological origins of monsters;
- in general, using your biological knowledge, explain to an increasingly; wishful, misinformed and generally confused public why things aren’t.
Statement Regarding Students with Disabilities:
Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Link to Statement of Expectations for Student Conduct:
http://studentlife.oregonstate.edu/sites/studentlife.oregonstate.edu/files/final_code_of_student_conduct_updated_1_8_18.pdf