

## ***Patterns in the Diversity of Life: An Introduction to Biodiversity***

### **Biology 3484B Course Outline/Syllabus Winter 2022**

#### **1. Course Information**

**Course Information:** This course is scheduled for three days/week, Monday, Wednesday, and Friday, 11:30-12:20 pm (in NCB-113, once we return to in-person learning). **This course will be delivered online until 31 January and classes will be asynchronous until then.** Lectures will be pre-recorded and posted on OWL following the schedule, for students to view at their convenience, *however it is recommended that students use the scheduled class time to view all lectures. Please consult the course calendar for the detailed schedule (section 3, below).* If the class is not scheduled to meet, you are expected to use the time to work on course assignments and/or study for the upcoming test/exam.

**Prerequisites:** Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees if you are dropped from a course for failing to have the necessary prerequisites: At least 1.0 course from: Biology 2290F/G (Scientific Method in Biology), 2382B (Cell Biology), 2483A (Ecology), 2581B (Genetics), 2601A/B (Organismal Physiology), and registration in third or fourth year.

#### **2. Professor and graduate student teaching assistants (TA)**

<b>Instructors</b>	<b>Email</b>	<b>Office</b>	<b>Phone</b>	<b>Office Hours</b>
Dr. Nina Zitani	nzitani@uwo.ca	0124 BGSB	X85356	By Appointment
Guest lectures by Dr. Greg Thorn	rgthorn@uwo.ca	3047 BGSB	X88647	By Appointment
TA's:		N/A	N/A	By Appointment
Katarina Kukulj	kkukulj@uwo.ca	N/A	N/A	By Appointment
Brendon Samuels	Bsamuel2@uwo.ca	N/A	N/A	By Appointment
Ben Souriol	bsouriol@uwo.ca	N/A	N/A	By Appointment

#### **3. Course Syllabus, Schedule, Delivery Mode**

**Course Description:** This course provides an overview of the topic of global biodiversity and the ongoing global Biodiversity Crisis. Lectures emphasize the science of systematics, taxonomy, classification, nomenclature, phylogenetics, evolution, ecology, the conservation of biodiversity, and the

role of biodiversity in sustainability. Lectures 1-3 are introductory and cover fundamental scientific concepts that will be used throughout the course. Lectures 4-24 include a survey of the world's biodiversity with emphasis on the most diverse eukaryotic taxa and their ecological function, biomes, a brief look at the evolution of biodiversity over geologic time, and global conservation issues. The last 2 lectures cover the current, ongoing global Biodiversity Crisis, causes of biodiversity loss worldwide, and solutions to the crisis.

**Learning Outcomes and Objectives:** 1) Scientifically define biodiversity; 2) understand: the fundamentals of the science of systematics including phylogenetics; what is an evolutionary lineage/taxon; how we determine an evolutionary lineage/taxon; 3) Describe and define the major taxa with an emphasis on the Eukaryota, their phylogenetic relationships and ecological roles; 4) Define the major events in the evolution of biodiversity going back through geologic time; 5) Describe the major biomes worldwide; 6) Describe the ways in which humans are dependent on biodiversity; 7) Gain a basic awareness and understanding of the global biodiversity crisis and the primary causes; 8) Define practical solutions to the biodiversity crisis.

***Course outline continues on page 3***

**TENTATIVE COURSE CALENDAR 2022:** This calendar may change; students will be informed in advance of any upcoming changes.

<b>Day</b>	<b>Date</b>	<b>Content (Online = Asynchronous; lectures posted on OWL)</b>
M	10 Jan	L 1: Introduction ( <b>Dr. Z: online</b> )
W	12 Jan	L 2: Science of Systematics 1 ( <b>Dr. Z: online</b> )
F	14 Jan	L 3: Science of Systematics 2 + how many spp? ( <b>Dr. Z: online</b> )
M	17 Jan	L 4: Prokaryotes and Early life on Earth ( <b>Dr. T: online</b> )
W	19 Jan	L 5: Eukaryote Evolution + Serial Endosymbiosis ( <b>Dr. T: online</b> )
F	21 Jan	L 6: Plants 1 ( <b>Dr. T: online</b> )
M	24 Jan	L 7: Plants 2 ( <b>Dr. T: online</b> )
W	26 Jan	L 8: Fungi 1 ( <b>Dr. T: online</b> )
F	28 Jan	L 9: Fungi 2 ( <b>Dr. T: online</b> )
M	31 Jan	L 10: Metazoa Evolution I ( <b>RETURN to IN-PERSON</b> )
W	02 Feb	<b>In Class: Details of Listed Species Report; hand-out scientific names</b>
F	04 Feb	L 11: Metazoa Evolution II
M	07 Feb	L 12: Mammals + article on new Primate species
W	09 Feb	L 13: Introduction to Arthropoda & Arachnida I
F	11 Feb	Study period on your own
<b>Sat</b>	<b>12 Feb</b>	<b>Official: MIDTERM TEST: 2:00 – 4:00 pm, WSC 240 &amp; 55 (testable materials are Lectures 1-12 and Required Readings)</b>
M	14 Feb	L 14: Arachnida II
W	16 Feb	L 15: Arthropoda: Hexapoda 1: Intro to “minor” orders
F	18 Feb	Study period on your own
<b>MWF</b>	<b>21-25</b>	<b>READING WEEK – No classes</b>
M	28 Feb	L 15b: Zoological Collections & Biodiversity Gallery
W	02 Mar	<b>Biodiversity Gallery Visit 1; Tentative: Makeup Midterm test: TBA</b>
F	04 Mar	L 16: Coleoptera
M	07 Mar	<b>Biodiversity Gallery Visit 2</b>
W	09 Mar	<b>Return midterm &amp; review correct answers</b>
F	11 Mar	L 17: Lepidoptera
M	14 Mar	L 18: Diptera
W	16 Mar	<b>Biodiversity Gallery Visit 3; Listed Species Report due</b>
F	18 Mar	L 19: Hymenoptera 1
M	21 Mar	<b>Biodiversity Gallery Visit 4</b>
W	23 Mar	L 20: Hymenoptera 2
F	25 Mar	<b>Biodiversity Gallery Visit 5</b>
M	28 Mar	L 21: Bridging the Gap: Pollination
W	30 Mar	L 22: Ecosystems 1
F	01 Apr	L 23: Ecosystems 2:
M	04 Apr	L 24: Ecosystems 3: Amazon Rainforest/Serengeti
W	06 Apr	L 25: Anthropocene and threats to species
F	08 Apr	L 26: Solutions: Conservation of Biodiversity; <b>Reflection Essay due</b>
<b>?</b>	<b>?</b>	<b>FINAL EXAM: Date/time/location TBA</b>

## 4. Course Materials

### Required Equipment:



Stable internet connection



Laptop or computer with webcam



Working microphone

**Required Reading:** assigned in lecture and on OWL, from online materials, or readings posted on OWL. There is no textbook. All required reading is testable.

All course documents and information (syllabus, lecture files, instructional documents, required readings, etc.) will be posted to OWL and students are responsible for checking the course OWL site (<http://owl.uwo.ca>) on a regular basis for updates. If students need assistance with the course OWL site, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Personal Response Systems ("Clickers") are not used in this course.

## 5. Methods of Evaluation

### The overall course grade will be calculated as:

Midterm Test	35%
Listed Species Report	15%
Reflection Essay	5%
Final Exam	45%

**Testable Material:** For both the midterm test and final exam: questions will be based on material presented in class (lectures, written, spoken, presented on the computer), information in required reading assignments, and Biodiversity Gallery visit (final exam only), i.e., all the information presented in class and assigned is testable.

**Midterm test: (35%):** 2 hours; testable materials include lectures 1-12 and required readings assigned to date. There will be ONE makeup midterm test. Students may take the makeup midterm test with a Dean's excuse for missing the regular test, and my approval. Appropriate documentation for medical and non-medical absence must be submitted to the Academic Counselling office in your Faculty of Registration. See #6 below for more information on accommodation for missing the regular test.

**Final Exam: (45%):** 3 hours; testable materials include lectures 13-26, the remaining required readings, and Biodiversity Gallery visit. See #6 below for information on accommodation for missing the final exam.

**Test/Exam Format:** Midterm and final exam formats will be mixed, with some multiple-choice questions, some fill-in-the-blank, and some short answer questions.

**Listed Species Report (15%):** A written paper (hard and electronic copy) on a randomly assigned "listed species" of plant, fungus or animal. Paper length approximately 3 pages, double-spaced, no less

than 650, no greater than 850, i.e., the paper must be between *650 and 850 words, including citations*. Outside this range you will lose marks. Students will hand in papers through TURNITIN on OWL. Late submissions will be penalized. The detailed instructions will be posted in a separate document on OWL and an assigned scientific name will be given to each student in class.

### **Listed Species Reports are due on 16 March:**

- 1) **Hard copy** of your paper is due in NCB room #301, front desk (Biology Undergraduate Office in North Campus Building), between 8:30 am and 12 noon. Late papers will be penalized.
- 2) You **must upload an electronic copy** (Word file) to OWL by 5 pm. Late papers will be penalized.
- 3) ***Hard copy must be identical to uploaded electronic copy, or paper will receive a zero mark.***

**Reflection Essay (5%):** A 1 - 2 page maximum essay answering questions that ask the student to reflect on what they've learned in the course. A separate document will be posted on OWL with specific instructions that must be followed to get full credit.

## **6. Student Absences**

### **Academic Consideration for Student Absences**

Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes:

- (i) Submitting a Self-Reported Absence (SRA) form provided that the conditions for submission are met. To be eligible for a Self-Reported Absence:
  - an absence must be no more than 48 hours
  - the assessments must be worth no more than 30% of the student's final grade
  - no more than two SRAs may be submitted during the Fall/Winter term
- (ii) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.
- (iii) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered, unless otherwise instructed in the course outline.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For the policy on Academic Consideration for Student Absences – Undergraduate Students in First Entry Programs, see:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_illness.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf)

and for the Student Medical Certificate (SMC), see:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf).

## **Religious Accommodation**

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

## **Absences from Final Examinations**

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under [Special Examinations](#)).

## **7. Accommodation and Accessibility**

### **Accommodation Policies:**

Students with disabilities work with Accessible Education (formerly SSD), which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic Accommodation\\_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf),

## **8. Academic Policies**

### **Professionalism & Privacy:**

Western students are expected to follow the Student Code of Conduct. Additionally, the following expectations and professional conduct apply to this course:

- Students are expected to follow online etiquette expectations provided on OWL
- All course materials created by the instructor(s) are copyrighted and cannot be sold/shared
- Recordings are not permitted (audio or video) without explicit permission
- Permitted recordings are not to be distributed
- Students will be expected to take an academic integrity pledge before some assessments
- All recorded sessions will remain within the course site or unlisted if streamed

**Terms of Use of all PowerPoint Slides/Lecture Content:** All the content presented and made available to students on OWL is copyrighted material (e.g., PowerPoint lecture content including images and

video). Dr. Zitani either holds the copyright, or permission has been granted to Dr. Zitani to use the material for educational purposes only. Materials are passed on to students in electronic formats for the sole purpose of studying for tests. No other permission is granted. Content may not be uploaded to the internet outside of OWL, under any circumstances.

**Scholastic offences:** are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

**Plagiarism:** Plagiarism will not be tolerated. Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author they must acknowledge their debt both by using quotation marks where appropriate, and by proper and accurate referencing in the form of scientific citations. All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

**Use of Electronic Devices During Tests/Exams:** No electronic devices (phone, calculator, etc.) may be in your possession; no pictures may be taken of tests/exams.

**Use of Electronic Devices While Viewing Graded Tests/Exams in Class:** No electronic devices (phone, calculator, etc.) may be in your possession; no pictures may be taken of tests/exams.

**Computer-marked multiple-choice tests and exams:** may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

**Tests and examinations in this course may be conducted using a remote proctoring service:** By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide **personal information** (including some biometric data) and the session will be **recorded**. More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at:

<https://remoteproctoring.uwo.ca>.

**The website for Registrarial Services:** <http://www.registrar.uwo.ca>

In accordance with policy, [https://www.uwo.ca/univsec/pdf/policies\\_procedures/section1/mapp113.pdf](https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf) the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

**Respectful use of Email:** It is the responsibility of each student to read the course outline/syllabus and to refer to it when necessary. Emails about information contained on this course outline/syllabus will not be answered, unless there is a mistake or question about clarity of content. Students must use their Western (@uwo.ca) email addresses when contacting their instructors. Email coming from an account

that is not a UWO account will not be answered. Email that does not include a salutation will not be answered. All emails must include your full name and student number.

**Multitasking in the classroom is not allowed:** Multitasking disrupts the learning process for those participating in it, and for those students sitting near someone engaged in multitasking. All technology not being used for class purposes must be turned off (cell phone ringers, texting/messaging, websites, email, etc.). Texting, messaging, using social media, surfing the web, emailing, etc. is not allowed in the classroom. See research article on this topic: [http://www.huffingtonpost.ca/2013/08/14/laptops-in-classrooms\\_n\\_3756831.html](http://www.huffingtonpost.ca/2013/08/14/laptops-in-classrooms_n_3756831.html)

## **9. Support Services**

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at (519) 661-2147 if you have any questions regarding accommodations.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Students who are in emotional/mental distress should refer to Mental Health@Western. (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.

## **10. Equity, Diversity, Inclusion and Decolonization (EDID):**

### **Land Acknowledgment:**

I/We acknowledge that Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak, and Chonnonton Nations, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society. Throughout Canada, North America, and the world, Indigenous Peoples are vital contributors to their communities and I value their presence, knowledge and wisdom.

The pronouns used by:

Dr. Nina Zitani: she/her; Dr. Greg Thorn: he/him

Katarina Kukolj: she/her; Brendon Samuels: he/him; Benjamin Souriol: he/him.

/End Final Version