

BIOL 1201:

Molecular and Cell Biology

Tim Frasier

Saint Mary's University

Welcome!

To SMU



To Biology



Introductions

Dr. Tim Frasier



Research

Conservation genetics of endangered whale species



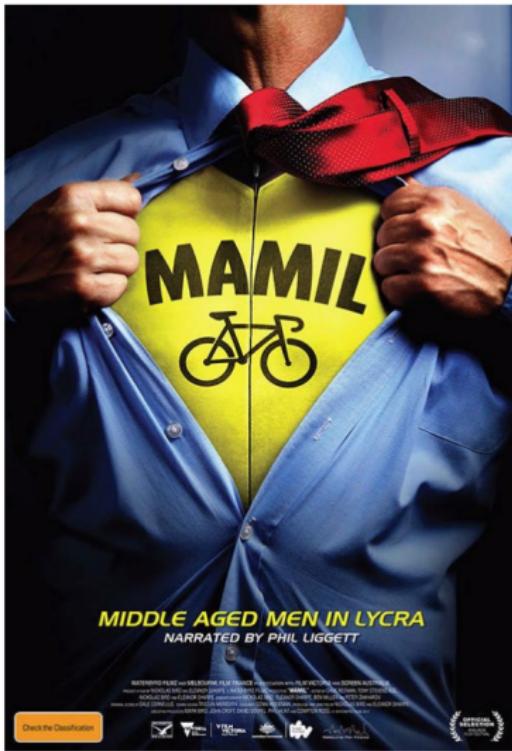
Forensics



The screenshot shows the homepage of the Natural Resources DNA Profiling & Forensic Centre. At the top left is a green moose logo. To its right, the text "NATURAL RESOURCES DNA PROFILING & FORENSIC CENTRE" is displayed. Below the header is a navigation bar with links: HOME, WILDLIFE FORENSICS, GOAT GENETICS, RESEARCH, NEWS RELEASES, CONTACT, and ABOUT. A large banner image at the bottom features two men in uniform standing next to a moose on a road, with the text "WILDLIFE FORENSIC DNA LABORATORY" overlaid.



The screenshot shows the Royal Canadian Mounted Police website. The header features a red background with a maple leaf and the text "Royal Canadian Mounted Police" and "www.rcmp.gc.ca". Below the header is a black navigation bar with links: "Français", "Home", "Contact Us", "Help", "Search", and "Canada.ca". A breadcrumb trail "Home > Forensic Science and Identification Services > Biology Services" is visible. On the left, a sidebar for "Forensic Science and Identification Services" lists "Biology Services". The main content area displays the heading "Biology Services".



MIDDLE AGED MEN IN LYCRA
NARRATED BY PHIL LIGGETT

Over the Classification



PG-13



Contact Information

Office: Science Building, room S 327

Tel: 902-491-6382

E-mail: timothy.frasier@smu.ca

Please put BIOL 1201 in subject line

Office Hours: TR 1:00–4:00 *or via E-mail!*

Course Content

All course content will be posted (and available) on the course Brightspace page

- Syllabus (with assigned readings)
- Lecture presentations
- Other relevant information and postings

Brief walkthrough

Lectures

Times: TR 11:30–12:45 MM Theatre

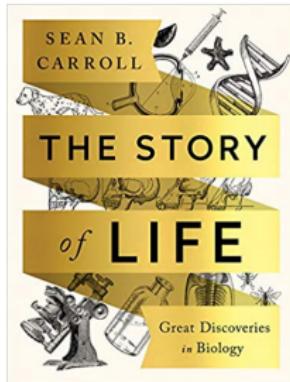
Will explain/discuss the relevant topics throughout the term

Content is *supplemental to*, **not** a *replacement for*, information from the textbooks

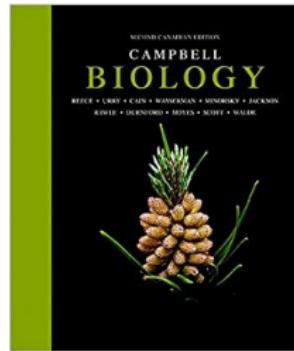
- Tests will focus primarily (but not exclusively!) on lecture content, **but** textbook information will help with understanding

Textbooks

Will have two perspectives of most topics: macro and micro, for a richer understanding

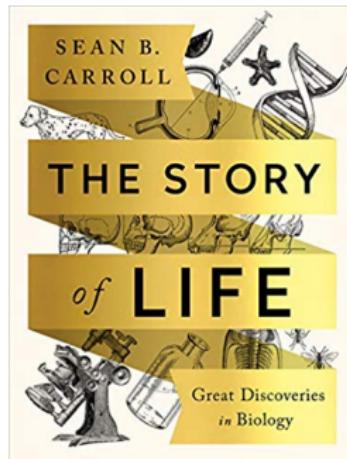


Stories associated with major topics



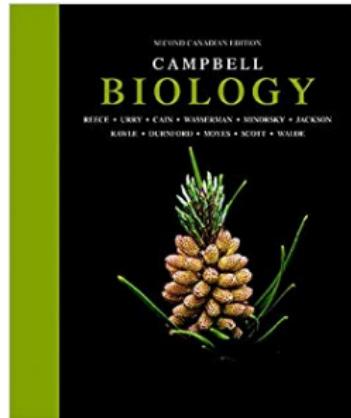
Detailed descriptions of major topics

Textbooks



- Just hard copy at bookstore (eBook from Amazon, etc.)
- Read as outlined in the syllabus (or more!)

Textbooks



- Hard copy and/or eBook at bookstore
- Read as outlined in the syllabus (or more!)
- Online content, including Mastering exercises
- **Learning Catalytics**

Learning Catalytics



Will have a tutorial **next class!**

Grades

Component	Subcomponent	Weight	Total
Labs	Pre-lab quizzes	4%	
	Lab worksheets	16%	
	Lab exams (2 @ 10% each)	20%	40%
Lecture	Clickers	6%	
	Mid-term Exam #1	18%	
	Mid-term Exam #2	18%	
	Final Exam	18%	60%
			100%

Grades

Component	Subcomponent	Weight	Total
Labs	Pre-lab quizzes	4%	
	Lab worksheets	16%	
		20%	40%
Lecture	Non-majors must obtain >50% in both the lecture and lab to get credit! Majors need >63% (C).	6%	
		18%	
		18%	
	Final Exam	18%	60%
			100%

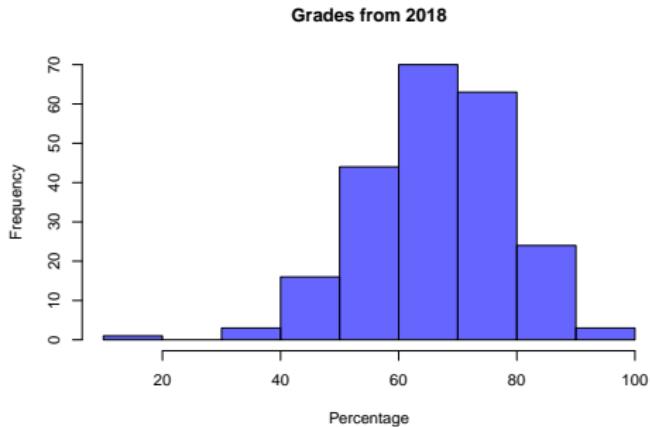
Labs

Times:	2:30–5:29	M (“A”), T (“B”), W (“C”), R (“E”)	S 139
	9:30–12:29	F (“F”)	S 139

No labs this week!

- WHMIS Training (by **Sep. 25**) - see Brightspace
- Lab coat & goggles
- Coordinator - Dr. Jessica Boyd (jessica.boyd@smu.ca)
- **These are independent from the lecture**

Housekeeping



“Thanks for not doing your job. You tested us on completely different information than provided in lectures.”

“Thanks for making this course so easy. You gave us all the information we needed to ace the exams.”

Housekeeping

Exam questions will rarely be based solely on memorization

Instead, they will focus on testing your *understanding* of a topic

In this way, it is true that many exam questions will not be *exactly* on things that you have seen before, but if you *understand* the content you should be able to answer them.

Example

Material: Mitochondria are organelles inside of cells that produce energy; where sugars are broken down into ATP, which can then be used as energy for the cell.

Potential test question: Suppose a person has a genetic disease where their body produces only half of the “normal” amount of mitochondria in each cell. The functioning of which tissue/organ will be the most affected by this disease?

- a. Hair
- b. Heart
- c. Skin
- d. Toenails

Housekeeping

Should keep this in mind when you are studying

- Don't just memorize things
- Make sure that you *understand* them as well

Housekeeping

I won't know the answers to every question that you ask!

How To Succeed

1. Read texts *before* class
 - Take notes
 - What do you understand? What don't you understand?
2. Come to class looking to fill these gaps
 - Take notes accordingly (focused and thinking, rather than just writing down everything)
3. If still uncertain
 - Ask friends or other people who have taken the course
 - E-mail me and we can meet
4. Study briefly, but continuously, throughout the term, rather than cramming the night before

How To Study

There is a lot of research on what study methods work, and which do not. **Take advantage of this!!**

learningscientists.org



Content by Yossi Meirov (University of Massachusetts Lowell) & Megan Smith (Rhode Island College). Illustrations by Trevor Egan (teachingnewbie.com).

How To Succeed

Success is your responsibility!

There are many resources available to you to help you succeed:

- Textbooks
- Lectures
- Friends
- Tutors
- Professors
- ...

It is up to you to utilize them in a manner that works for you, and allows you to succeed.

Other Resources To Help You Succeed

- Your professors!
- Science Advising Centre
- Writing Centre
- Library Services
- The Counselling Centre
- Others



Other Resources To Help You Succeed

- Your professors!
- Science Advising Centre
- Writing Centre
- Library Services
- The Counselling Centre
- Others

Atrium 301

- Organizing courses
- Ensuring prerequisites are met
- Developing a plan for graduating on time
- Peer mentoring program
- ...

Other Resources To Help You Succeed

- Your professors!
- Science Advising Centre
- Writing Centre
- Library Services
- The Counselling Centre
- Others

Burke 115

- Determine and develop a direction for a paper or assignment
- Strengthen papers or assignments
- Identify recurring grammatical errors or structural problems
- ...

Other Resources To Help You Succeed

- Your professors!
- Science Advising Centre
- Writing Centre
- Library Services
- The Counselling Centre
- Others

Help you:

- Find things in the library
- Conduct effective and specific library and online searches
- Research planning
- Evaluating resources
- Reference properly
- ...

Other Resources To Help You Succeed

- Your professors!
- Science Advising Centre
- Writing Centre
- Library Services
- The Counselling Centre
- Others

4th Floor of Student Centre

- Personal counselling
- Academic and life skills coaching
- ...

Other Resources To Help You Succeed

- Your professors!
- Science Advising Centre
- Writing Centre
- Library Services
- The Counselling Centre
- Others

There are more:

The screenshot shows the homepage of the Saint Mary's University Campus Life website. At the top, there is a navigation bar with links for "Campus Life", "Share", and various student services like Residences & Housing, Meal Plans & Food Options, Athletics & Recreation (SMURO), Student Association (SMUSA), Student Leadership, Career Services, Student Societies, Health & Wellness, Getting Around, Welcome Week, Campus Services, Service Learning, Pride in Your Shared Neighbourhood, Services for Students with Disabilities, Art Gallery, and Chaplaincy. Below the navigation, there is a large photo of a person jogging along a path near a body of water. A caption below the photo reads: "At Saint Mary's you are just minutes away from the ocean and your favorite trails." Underneath this section, there are three main call-to-action boxes: "Your SMU tour starts here.", "Virtual Tour" (with a link to "A typical day in the life of a student"), "Get Involved" (with a link to "Join one of our Clubs and Societies"), "New to SMU" (with a link to "Everything you need in one place"), "Health & Wellness" (with a link to "SMUHR Resources"), and "Counselling Services" (with a link to "Homeless, need advice, stressed? Try our counseling services").

Biology: The scientific study of life

Often organized into many different levels:

- 1. Molecules
 - 2. Organelles
 - 3. Cells
 - 4. Tissues
 - 5. Organs & organ systems
 - 6. Organisms
 - 7. Populations & other taxonomic levels
 - 8. Communities
 - 9. Ecosystems
 - 10. The Biosphere
-
- The diagram illustrates the organization of biological levels into two main categories. A vertical dashed line on the left separates the first six levels (Molecules to Organisms) from the last four (Populations to Biosphere). From the second level onwards, each level is connected by a dashed arrow pointing right to its corresponding course code: BIOL 1201 for the first six levels, and BIOL 1202 for the last four levels.
- BIOL 1201
- BIOL 1202

Rojo Award

Student with the highest grade across BIOL 1201 & 1202



Dr. Alfonso Rojo
1921–2017
Founding member of SMU Biology

Questions?