

**The University of Manitoba**  
**Faculty of Agricultural and Food Sciences**



**Course Title: World of Bugs**  
**Department of Entomology**  
**Course Number: ENTM 1000**

**Academic Session:** Winter 2019

**Credit Hours:** 3

**Location, Meeting Days and Class Hours:**

Room 219, Animal Science/Entomology Building

Monday/Wednesday/Friday 9:30 – 10:20 AM

**Calendar Description**

A survey of insect biology and life styles with emphasis on insect diversity and human-insect interactions.

**Instructor Information**

**\*Dr. Rob Currie**, 214a Animal Science/Entomology Building (Phone 474-60200)

**Office hours:** Any time except: T 10:00-13:00/TH 10:00-13:00

**\*Contact for general inquiries about the course. Please include "ENTM 1000" in email subject.**

**Mr. Jordan Bannerman**, 206 Animal Science/Entomology Building (Phone 480-1021)

E-mail: Jordan.Bannerman@umanitoba.ca

**Office hours:** Any time except: T/TH 10:00-11:30

**Dr. Kyle Bobiwash**, 212A Animal Science/Entomology Building (Phone 474-6423)

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**Office hours:** Any time except: T 10:00-13:00/TH 10:00-13:00

**Dr. Kateryn Rochon**, 215A Animal Science/Entomology Building (Phone 474-8640)

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**Office hours:** Any time except: M/W/F 8:30-9:30 and T 10:00-13:00 or T/Th 10:00-13:00

**Dr. Alejandro Costamagna**, 217A Animal Science/Entomology Building (Phone 474-9007)

E-mail: Ale.Costamagna@umanitoba.ca

**Office hours:** Any time except: T/TH 10:00-12:45

**Dr. Jason Gibbs**, 213A Animal Science/Entomology Building (Phone 474-7485)

E-mail: Jason.Gibbs@umanitoba.ca

**Office hours:** T/TH 1:30-2:30 pm, or by appointment

**Dr. Terry Galloway**, 209 Animal Science/Entomology Building

E-mail: Terry.Galloway@umanitoba.ca.

**Office hours:** Any time in the morning

**Dr. Neil Holiday**, 216A Animal Science/Entomology Building (Phone 474-8365)

Email: Neil.Holiday@umanitoba.ca

**Office hours:** Email for appointment

**Dr. Pat MacKay**, 209 Animal Science/Entomology Building

E-mail: Pat\_Mackay@umanitoba.ca

**Office hours:** Tuesday and Thursday morning except T/TH 10:00 - 11:30

## Suggested Resource Material

[available at U of M Science and Technology Library, 5<sup>th</sup> Floor]

- Gullen, P.J. and Cranston, P.S. 2014. The Insects: an Outline in Entomology. 5<sup>th</sup> ed. Blackwell Science. Oxford. 595 pp.
- Whitfield, J.B. and Purcell, A.H. 2013. Daly and Doyen's Introduction to Insect Biology and Biodiversity 3<sup>rd</sup> ed. Oxford University Press. New York. 734 pp.
- Marshall, S.A. 2006. Insects: Their Natural History and Diversity. Firefly Books. Richmond Hill, ON. 718 pp.
- Berenbaum, M.R. 1995. Bugs in the System: Insects and their Impact on Human Affairs. Addison Wesley. Reading (MA).
- Borror, D.J. and White, R.E. 1970. A Field Guide to Insects America North of Mexico. Peterson Field Guide Series. Houghton Mifflin, NY.

## Examinations and Grades

Your grade in this course is determined by the following three tests

Examination	Date	Percentage
Midterm Exam 1	Monday, 4 Feb, 2019	25%
Midterm Exam 2	Monday, 11 March, 2019	25%
Final Exam	Scheduled by University (11-26 April, 2019)	50%

Students are required to write all exams on dates as scheduled. If a mid-term exam is missed for a verifiable and accepted reason (eg. Medical emergency), with prior written approval from the course coordinator the marks allocated for the mid-term exam will be added to the total for the final examination (which is cumulative).

## Letter Grade Equivalency

A+ = >90%; A=80-89%; B+ =75-79%; B=70-74%; C+=65-69%; C=60-64%; D=50-59%; F=<50%.

## Important Dates

First day of course..... January 7, 2019  
Voluntary withdrawal date..... March 20, 2019  
Final day of course..... April 8, 2019  
Exam period..... April 11- 26, 2019

## Academic Integrity

Academic dishonesty is a serious offense. Students should consult of the University Calendar (sections 7.1 & 7.2) or Website (<http://webapps.cc.umanitoba.ca/calendar06/regulations/plagiarism.asp>) for policies and penalties for plagiarism, cheating and impersonation at examinations. Students can visit the course website on UM Learn for additional information on available student supports and relevant policies related to undergraduate courses.

**Schedule: Lecture topics may be subject to change.**

# LECTURE OUTLINE

Week	Date	Day	Lecturer	Topic
<b>INSECTS THE HOW, WHY, WHAT and WHO</b>				
1	07-Jan	Mon	RWC / All	Outline, introductions, overview
1	09-Jan	Wed	RWC	What makes an insect an insect (external anatomy)
1	11-Jan	Fri	RWC	What's in a bug? (internal anatomy)
2	14-Jan	Mon	KB	Why insects drive the world - part I
2	16-Jan	Wed	KB	Why insects drive the world - part II
2	18-Jan	Fri	JG	New species – origins and discovery
3	21-Jan	Mon	NJH	A year in the life of a ground beetle?
3	23-Jan	Wed	NJH	Chemical warfare in beetles
3	25-Jan	Fri	RWC	How insects survive adverse conditions
4	28-Jan	Mon	KR	Six-legged sex
4	30-Jan	Wed	AC	They really get around
4	01-Feb	Fri	JG	Impacts of molecular data/ Back to the future 2018
5	04-Feb	Mon		<b>Midterm Exam 1</b>
<b>MEDICAL AND VETERINARY</b>				
5	06-Feb	Wed	TDG	For the love of lice
5	08-Feb	Fri	KR	The Middlemen: vector ecology
6	11-Feb	Mon	TDG	The blue tailed fly
6	13-Feb	Wed	KR	Tick... tick... ticks!
<b>Social Insects and Pollinators</b>				
6	15-Feb	Fri	RWC	Bees gone bad: Killer bees in the Americas
	18-Feb	Mon	No Lecture	Mid Term Break- Louis Riel Day
	20-Feb	Wed	No Lecture	Mid Term Break
	22-Feb	Fri	No Lecture	Mid Term Break
7	25-Feb	Mon	RWC	Dark side of Slavery and social parasitism in insects
7	27-Feb	Wed	RWC	Fact and fiction of social wasps
7	01-Mar	Fri	AC	Ant farming
8	04-Mar	Mon	JG	“World of pollination”
<b>INSECT ECOLOGY and BEHAVIOUR: SURVIVAL OF THE FITTEST</b>				
8	06-Mar	Wed	KB	Insect Plant interactions/Insect herbivore co-evolution (2018)
8	08-Mar	Fri	PAM	Aphid life histories: complicated, short, brutal
9	11-Mar	Mon		<b>Midterm Exam 2</b>
9	13-Mar	Wed	AC	The name's Beetle. Lady Beetle.
9	15-Mar	Fri	AC	Insect Invaders
10	18-Mar	Mon	NJH	Insect threats to our shady city
10	20-Mar	Wed	AC	Where are they coming from? (landscape ecology)
10	22-Mar	Fri	AC	Insects that threaten our food supply
11	25-Mar	Mon	JB	Alien on Earth (Parasitoid strategies and behaviour)
11	27-Mar	Wed	JB	What's in the water
11	29-Mar	Fri	JB	Is it getting hot in here (Insects and Climate Change)
<b>Insects and Society</b>				
12	01-Apr	Mon	TDG	Insects in the courtroom
12	03-Apr	Wed	KR	Insects sharing your home if you are not careful
12	05-Apr	Fri	KR	Insects in art and culture
13	08-Apr	Mon	RWC	Insects for fun and profit; overview of program