

COURSE SYLLABUS

| COURSE TITLE: | PBIO 230 On the Origin and Life of Animals | | | |
|---|--|---------------|-----------------------|--|
| COURSE CODE: | 27320 | TERM: | Winter term 2019-2020 | |
| COURSE CREDITS: | 3.0 | DELIVERY: | 3L/4P | |
| CLASS SECTION: | 01 | START DATE: | Jan 6 2020 (lectures) | |
| LECTURE LOCATION: LECTURE TIME: WEBSITE: | | | Jan 13 2020 (labs) | |
| | Room 123 Biology | LAB LOCATION: | Room 212 Biology | |
| | T/Th 10:00 – 11:20 | LAB TIME: | Mondays | |
| | via PAWS/Blackboard | | 1:30 to 5:20 pm | |

Course Description

This course will examine the evolutionary origin, structure-function and ecological relationships of animals, with an emphasis on the major invertebrate groups. Prerequisite(s): BIOL 120 and one of BIOL 121 or GEOL 122

Course Themes

This course will be taught using the following themes:

- 1. the biodiversity of modern invertebrate groups in relation to their evolution;
- 2. morphology to illuminate the diversity of invertebrate animals;
- 3. the role of invertebrates in ecosystems;
- 4. application of knowledge about invertebrates, including in human and animal health

Learning Outcomes

On successful completion of this course, students will have demonstrated their ability to

- 1. explain the origins of animals and invertebrate groups using an evolutionary framework
- 2. recall the morphological characteristics of the major groups of invertebrates
- 3. relate specific examples of invertebrate impacts on human and animal health and the environment;
- 4. explain important adaptations of invertebrates to their environment;
- 5. examine a variety of animal specimens and examples to acquire knowledge;
- 6. interpret contemporary research articles from journals about invertebrate zoology;
- 7. illustrate their acquired knowledge in photographic and written form.

<u>Note:</u> The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at: http://www.usask.ca/learning_charter/

Detailed Course Schedule

| Week Dates Instructor | Major Lecture Topics | Laboratory Activity |
|-----------------------------------|--|--|
| Week 1 Jan 7 & 9 Marchant | Introduction to the course. Review the tree of life Review important characteristics of animals: multicellularity, locomotion (specifically nervous system and muscles), reproductive strategies and embryological considerations (diploblastic vs triploblastic animals, protostomes vs deuterostomes, types of embryonic cleavage) Introduction to the methods used to understand the phylogeny of animals (morphology, molecules and fossils) The Pre-Cambrian origin of Animals <u>Readings:</u> Textbook Chapters 1, 2 4, 5, 28; Blackboard material | No Lab |
| Week 2 Jan 14 & 16 Marchant | The Pre-Cambrian origin of Animals <u>Readings:</u> Textbook Chapter 1; Blackboard material | Lab #1 Jan 7 Introduction to Invertebrate Journal requirement The Animal Tree of Life & PreCambrian & Cambrian Animals Learning Assessment: Submission for Invertebrate Journal (formative assessment only) |
| Week 3 Jan 21 & 23 Marchant | The Cambrian explosion and the early evidence of modern phyla <u>Readings:</u> Textbook Chapter 1; Blackboard material | Lab #2 Jan 14 Choanoflagellates Poriferans <u>Readings:</u> Lab manual and supporting information in textbook Chapters 3 & 6. <u>Learning Assessment (2%):</u> Submission for Invertebrate Journal |
| Week 4 Jan 28 & 30 Marchant | The Life of Choanoflagellates The Life of Poriferans <u>Readings:</u> Textbook Chapters 3 and 6; Blackboard material | Lab #3 Jan 21 Cnidarians <u>Readings:</u> Lab manual and supporting information in textbook Chapter 7. <u>Learning Assessment (2%):</u> Submission for Invertebrate |

| Week 5 Feb 4 & 6 | The Life of Cnidarians | Lab #4 Jan 28 The Spiralia - Part A |
|-----------------------------------|--|--|
| Marchant | The Life of Ctenophores | Platyhelminthes Readings: Lab manual and |
| | <u>Readings:</u> Textbook Chapters 7 and 8; Blackboard material | supporting information in textbook Chapter 10. Learning Assessment (2%): Submission for Invertebrate Journal |
| Week 6 Feb 11 & 13 Marchant | Introduction to Bilateria, Protostomes & Deuterstomes The Spiralia: The Life of Platyhelminthes <u>Readings:</u> Textbook Chapters 9 and 10; Blackboard material | Lab #5 The Spiralia - Part B Annelida <u>Readings:</u> Lab manual and supporting information in textbook Chapter 14. <u>Learning Assessment (2%):</u> Submission for Invertebrate Journal |
| Feb 18 & 20 | Midterm Break – no Lectures | Midterm Break – no Lab |
| Week 7 Feb 25 & 27 Angrini | The Spiralia: The Life of Annelida The Spiralia: The Life of Mollusca | Lab #6 The Spiralia - Part C Mollusca (Bivalvia) <u>Readings:</u> Lab manual and supporting information in textbook Chapter 13. |
| | <u>Readings:</u> Textbook Chapters 13 and 14; Blackboard material | Learning Assessment (2%): Submission for Invertebrate Journal |
| Week 8 March 3 & 5 Angrini | The Spiralia: The Life of Mollusca <u>Readings:</u> Textbook Chapter 13; Blackboard material | Lab #7 The Spiralia - Part D Mollusca (Cephlapoda) <u>Readings:</u> Lab manual and supporting information in textbook Chapter 13. <u>Learning Assessment (2%):</u> Submission for Invertebrate Journal |
| Week 8 Mar 3 | Learning Assessment (20%) Mid-Term Examination up to and including Annelida. 90 minute exam 6:00 pm to 7:30 pm Room TBA | |

| Week 9 Mar 10 & 12 Angrini | The Ecdysozoa: The Life of Nematoda The Arthropoda: The Life of Myriapoda <u>Readings:</u> Textbook Chapters 18, 20 and 23; Blackboard material | Lab #8 The Ecdysozoa – Part A Chelicerata & Myriapoda <u>Readings:</u> Lab manual and supporting information in textbook Chapters 23 & 24. <u>Learning Assessment (2%):</u> Submission for Invertebrate |
|---|---|--|
| Week 10 Mar 17 & 19 Angrini | The Arthropoda: The Life of Chelicerata The Arthropoda: The Life of Crustacea <u>Readings:</u> Textbook Chapters 21 and 24; Blackboard material | Lab #9 The Ecdysozoa - Part B Crustacea <u>Readings:</u> Lab manual and supporting information in textbook Chapter 21. <u>Learning Assessment (2%):</u> Submission for Invertebrate Journal |
| Week 11 Mar 24 & 26 Angrini | The Arthropoda: The Life of Hexapoda <u>Readings:</u> Textbook Chapter 22; Blackboard material | Lab #10 The Ecdysozoa – Part C Hexapoda <u>Readings:</u> Lab manual and supporting information in textbook Chapter 22. <u>Learning Assessment (2%):</u> Submission for Invertebrate Journal |
| Week 12 Mar 31 & Apr 2 Angrini | The Deuterostomia The Life of Ambulacraria <u>Readings:</u> Textbook Chapters 25, 26 and 27; Blackboard material | Lab #11 The Deuterostomia Echinoderms Hemichordates <u>Readings:</u> Lab manual and supporting information in textbook Chapters 25, 26 & 27. <u>Learning Assessment (2%):</u> Submission for Invertebrate Journal |
| Week 13 Apr 7 Marchant | A macroevolutionary perspective: follow-up of the Cambrian explosion and construction of the modern marine ecosystem. <u>Readings:</u> Textbook Chapter 28; Blackboard material | <u>Learning Assessment:</u> Lab Exam (20%) on April 6 during the lab period |
| | Learning Assessment (40%) Final Examination during regular exam period. Note that the last day of the exam period this year is April 29. | |

Course Overview & Structure:

This course consists of 3 hours of face-to-face lecture per week, and a 4-hour lab in each of 11 weeks. Generally speaking, the laboratory exercises are designed to illustrate specific aspects relating to the morphology, evolutionary and/or ecology of an invertebrate group. The lectures will tend emphasize broader evolutionary and ecological relationships or concepts relating to the various life styles of each invertebrate group. The course is specifically designed so that the laboratory exercise for an invertebrate group occurs before the lectures about that group have commenced (or at least concluded). The intent of this flipped lecture and lab is to have students learn substantial details about an invertebrate group on their own before they arrive in the laboratory. This prior learning will be reinforced during the laboratory. The lecture can then focus on more general and integrative aspects, allowing for more interaction between the instructor and students. The teaching methods have been designed to facilitate the development of a strong knowledge base in animal origins and invertebrate biology. Course content will be explored in a way that explains difficult concepts and encourages students' participation in the learning process.

Attendance at the laboratories is required. These practical sessions provide learning activities that are essential to the achievement of the learning outcomes of the course. New content is covered in these laboratories and more skills and competencies will be acquired. Students will be responsible for some advanced reading prior to attending each laboratory session and for seeking new knowledge during the lab period. This can be from the textbook or online sources; computers will be available for this during the lab period. Students will use microscopic examination and dissection to study invertebrates, and search for supporting information online. Overall, the laboratory exercises will allow students to develop their skills at identifying and describing animals, as well as searching and interpreting the scientific literature in invertebrate biology. Students will work in groups of three and will develop teamwork and problem-solving skills by learning from each other.

All students are expected to complete all exercises within each lab topic. Do not delegate the completion of a lab exercise to specific one individual within a group. Work together to learn the material in all exercises.

Students will summarize their learning each week through written entries in an Invertebrate Journal. Specific material to be included in the Journal entry for each week is described in the lab manual. This includes student-generated figures, written answers to open-ended questions in the lab manual and a one-paragraph summary of a scientific research article pertinent to the laboratory exercise. Students will work individually on their journal entry and complete these before the start of the <u>next lecture</u>. More information about the Invertebrate Journal requirements are available in the lab manual and will be detailed in the first lab session. There will be a formative assessment of the Journal after the first lab period to provide students with feedback on their Journal. Students will be allowed to correct any deficiencies noted in their Journal before it is graded. After that, summative assessments will be made at regular intervals (see Assessment Details below).

Instructors:

Contact Information:

| Dr. Tracy Marchant | room 120.3 CSRB wing | tracy.marchant@usask.ca |
|----------------------|----------------------|-------------------------|
| (Course Coordinator) | 306-966-4420 | |
| Dr. Manar Angrini | room 220.2 CSRB wing | manar.angrini@usask.ca |
| | 306-966-4437 | |

| Dr. Doug Smith | room 118 Biology | dh.smith@usask.ca |
|----------------|------------------|-------------------|
| (Labs) | 306-966-4415 | |

Office Hours: Generally speaking, the instructors above will be available in their offices on a drop-in basis. However, please note that all instructors have other commitments that may take them away from their office. Specific appointments can be set by email or over the phone. Email responses to specific questions about course material are at the discretion of each instructor.

Instructor Profiles & Other Information:

All instructors in PBIO 230 hold at least a PhD. Dr. Marchant and Dr. Angrini are faculty members in the Department of Biology. They teach and conduct research in the area of zoology and animal physiology. Dr. Smith is an instructor and lab coordinator in the Department of Biology with a special interest in the biology of insects. Teaching Assistants will also participate in the laboratories.

Required & Supplementary Resources

Textbook: Brusca, R.; Moore, W.; and Shuster, S. 2016.Invertebrates. Sinauer Associates, Inc., Sunderland. 3rd. Available through the bookstore or online.

You must bring this text book to each lab period. An online version is acceptable.

Additional required readings will be posted on Blackboard at the discretion of the instructor.

Laboratory Manual: this will be available as a download from Blackboard.

Computer Account & the Use of Digital Cameras or Other Recording Devices: Students need to be able to access their university computer account during the laboratory period. They will also be required to use their smart phones to take images of specimens during the laboratory so that these can be incorporated into their electronic Invertebrate Journal. Images captured during the laboratories may only be shared amongst students in PBIO 230 and shall not be not posted online or otherwise distributed, except as approved by the instructors.

Recording devices are not permitted during the lectures, except when an accommodation is required as a result of registration with AES (see below).

Grading Scheme

Overall, assessment is designed to ensure students have attained the learning outcomes for the course.

| Assessment Item | Weighting | Relevant Learning Outcomes | Due Date and Time |
|-------------------------------------|---|-------------------------------|------------------------------|
| Mid-Term Exam | 20% of the final course grade | 1, 2, 3, 4, 7 | Refer to Course Timetable |
| Final Exam | 40% of the final course grade | 1, 2, 3, 4, 7 | Refer to Course Timetable |
| Invertebrate Journal Submissions | 20% of the final course grade (2% each for Labs 2 through 11) | 1, 2, 3, 4, 5, 6, 7 | Refer to Course Timetable |
| Lab Exam | 20% of the final course grade | 1,2,5 | Refer to Course Timetable |

Learning Assessment Details

Mid-Term Examination: This individual closed book examination is designed to assess a student's knowledge and understanding of the core concepts covered in the first half of the course. The exam will cover both the lab and lecture material up to the end of Phylum Annelida The exam will consist of multiple-choice and/or written-answer questions to be completed in a 90 minute time period. Please refer to your course timetable for the examination date and time.

Note that the 90-minute exam is scheduled for a special time outside of the regular lecture and laboratory periods.

Final Examination: This individual 3-hour closed-book cumulative examination is designed to assess a student's knowledge and understanding of material from the entire course. The exam will consist of multiple-choice and/or written-answer questions. Material from the laboratory will also be tested on the final exam. Consult the Final Exam Schedule when it is released for the examination date and time. Note that the exam period ends on April 30. Students who miss the final exam for a valid reason must contact the College of Arts & Science and apply for a deferred final exam. Deferred exams may utilize a different format than the regular exam. Students are encouraged to review all University examination policies and procedures: http://policies.usask.ca/policies/academic-affairs/academic-courses.php

Invertebrate Journal Submissions: These submissions are to be completed individually, although students will work in groups on certain aspects of the lab exercises; group vs individual work is clearly indicated in the lab manual. Students are required to communicate their observations of live, preserved, or sectioned animals by developing scientific descriptions, classifications, and labeled sketches or figures for animals studied in each lab. In addition, students are required to answer questions or complete other small writing assignments from the lab manual.

The Invertebrate Journal submission must be completed and submitted via Blackboard <u>before the</u> <u>start of the next lecture</u>. Each student will make a submission to the Invertebrate Journal for each of the lab periods. Formative feedback on the journal submission will be provided to each student after the first lab period. Subsequent assessments will be substantive in nature and count towards the final course grade (see the Detailed Course Schedule above). When at all possible, the Invertebrate Journal submissions will be graded and returned at the next lab period.

Prior to each lab, each student will search the scientific literature and locate a recently published article to be used in the writing of a one-paragraph summary and a statement about the relevance of the article to the lab topic. Additional details on how to do this will be provided in the first lab period. The one paragraph summary is to be included in the Invertebrate Journal submission due before the start of the next lecture.

Students will also be asked to define a set of terms associated with each lab. This list of definitions is to be completed <u>before</u> each lab and must be submitted at the <u>beginning of the lab</u> <u>period</u>. This prelab work will be graded as a component of the Invertebrate Journal submission for that lab.

Work for the Invertebrate Journal must be submitted by the deadline established for that work. Late work will not be accepted and will be assigned a grade of zero.

Course Invertebrate Journal: For each lab period, the best submission for a lab exercise will be determined by the teaching assistants. That submission will be added then be added to the Course Invertebrate Journal on Blackboard. In this way, a complete set of results for all of the lab exercises will be built over the course of the term. The student who has a submission chosen for

inclusion in the Course Invertebrate Journal will receive a 0.2% bonus on the learning assessment for that lab period. Bonus marks for journal submissions may be accumulated over the term to a maximum of 20% for the Invertebrate Journal submissions. Students are responsible for knowing all of the information contained in the Course Invertebrate Journal. This material will be tested on the Midterm, Final and Lab exams.

Laboratory Exam: This exam will use a "spot test" format with questions about laboratory specimens/material. One minute will be allotted to answer each question. The exam is comprehensive and will have questions on material from all of the lab periods.

Lab Attendance Expectations

Students are expected to attend, and be on time, for all scheduled labs. A student who arrives late may be penalized by a 10% deduction on the learning assessment for that lab period, and in serious cases, may even be excluded from the laboratory session by the instructor. In that case, the student will receive a grade of zero for that lab activity.

It is impossible to schedule make-up labs for this course. Students who miss a lab period are assigned a mark of zero for the work that was to be completed during the missed lab period. Students are required to contact the course coordinator prior to the end of the lab period if they are too ill to attend the lab or are facing extenuating personal circumstances that requires them to be away from the University. When a lab is missed due to illness or personal circumstances, the marks associated with the missed lab exercise with be distributed to remaining course components as determined by the instructor. Note that each situation will be judged and determined separately. Similar procedures will be followed if a student is going to miss giving their scheduled lab presentation.

Midterm and Final Examination Scheduling

The midterm must be written on the day scheduled. Students are required to contact Professor Marchant or Niyogi prior to the start of the midterm exam if they are too ill to attend the lab or are facing extenuating personal circumstances that requires them to be away from the University. Arrangements will be made to write the midterm exam at another time. The University Administration schedules final course examinations between April 9 to 29. Students should therefore avoid making prior travel, employment, or other commitments for this period. Alternate times to write the final course examination cannot be accommodated by the instructors. **Students who miss the final exam must contact the College and apply for a deferred final exam.** Deferred exams may utilize a different format than the regular exam, at the sole discretion of the instructors.

Students are encouraged to review all examination policies and procedures: http://students.usask.ca/academics/exams.php

Students planning on registering with the office for Access and Equity Services for Students (AES) must do so in accordance with AES procedures and deadlines (see information regarding Student Supports below).

Recording of the Course

Students are not allowed to record any aspect of this course, except with the permission of the instructor or as provided for by arrangements with AES. Any recording made under AES provisions is to only be used for the personal learning of the student who made the recording.

Copyright

Course materials are provided to students based on their registration in a class. Any material created by course instructors is the intellectual property of the instructors. This includes exams, PowerPoint/PDF slides and other course notes. Additionally, other copyright-protected materials created by textbook publishers and authors may be provided to students based on license terms and educational exceptions in the Canadian Copyright Act (see http://laws-lois.justice.gc.ca/eng/acts/C-42/index.html).

Before copying or distributing others' copyright-protected materials, students need to ensure that their use of the materials is covered under the University's Fair Dealing Copyright Guidelines available at http://www.usask.ca/copyright/basics/copyright-policy/fair-dealing-guidelines/index.php. For example, posting others' copyright-protected materials on the internet is not covered under the University's Fair Dealing Copyright Guidelines; doing so requires permission from the copyright holder. For more information about copyright, please visit http://www.usask.ca/copyright/students/rights/index.php or contact the University's Copyright Coordinator at copyright.coordinator@usask.ca.

Students should be aware that a violation of the university's copyright policies could be an instance of non-academic misconduct. For example, the practice of uploading or posting copyright-protected materials to course-sharing websites, depositories, or "drop boxes", without the permission of the copyright holder, could result in a charge of non-academic misconduct under the university's "Standard of Student Conduct in Non-Academic Matters" (see Student Conduct section below).

Student Feedback

The Department of Biology or the course instructors may survey students regarding the course. This is generally done through an in-class assessment near the end of the course.

University of Saskatchewan Grading System

The University has established a grading system to be used in all of its courses. Information on literal descriptors for grading at the University of Saskatchewan (reproduced below) can be found at: http://students.usask.ca/academics/grading/grading-system.php

Exceptional (90-100) A superior performance with consistent evidence of

- a comprehensive, incisive grasp of the subject matter;
- an ability to make insightful critical evaluation of the material given;
- an exceptional capacity for original, creative and/or logical thinking;
- an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently.

Excellent (80-90) An excellent performance with strong evidence of

- a comprehensive grasp of the subject matter;
- an ability to make sound critical evaluation of the material given;
- a very good capacity for original, creative and/or logical thinking;
- an excellent ability to organize, to analyze, to synthesize, to integrate ideas, and to express thoughts fluently.

Good (70-79) A good performance with evidence of

- a substantial knowledge of the subject matter;
- a good understanding of the relevant issues and a good familiarity with the relevant literature and techniques;
- some capacity for original, creative and/or logical thinking;
- a good ability to organize, to analyze and to examine the subject material in a critical and constructive manner.

Satisfactory (60-69) A generally satisfactory and intellectually adequate performance with evidence of

• an acceptable basic grasp of the subject material;

- a fair understanding of the relevant issues;
- a general familiarity with the relevant literature and techniques;
- an ability to develop solutions to moderately difficult problems related to the subject material;
- a moderate ability to examine the material in a critical and analytical manner.

Minimal Pass (50-59) A barely acceptable performance with evidence of

- a familiarity with the subject material;
- some evidence that analytical skills have been developed;
- some understanding of relevant issues;
- some familiarity with the relevant literature and techniques;
- attempts to solve moderately difficult problems related to the subject material and to examine the material in a critical and analytical manner which are only partially successful.

Failure <50 An unacceptable performance

For information regarding appeals of final grades or other academic matters, please visit the Student Conduct and Appeals section of the University Secretary's webpages: https://secretariat.usask.ca/student-conduct-appeals/appeals-in-academic-matters.php

Student Conduct

Integrity Defined

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary webpages (see below) and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

More information on what academic integrity means for students is found in the Academic Integrity webpages hosted by the University of Saskatchewan Library: https://library.usask.ca/academic-integrity.php

Policies on Academic Dishonesty, Academic Appeals and Course Delivery

Students are expected to undertake all aspects of their academic work in an ethical manner. Students are expected to submit their own individual work for academic credit, properly cite the work of others, and to follow all rules for examinations. Academic misconduct, plagiarism, and cheating will not be tolerated. Students are responsible for understanding the university's policies on academic integrity and academic misconduct. If any form of academic misconduct is discovered, appropriate disciplinary action will be taken.

Information about expectations and policies about student conduct at the University of Saskatchewan can be found at The Office of the University Secretary webpage. This webpage contains links to several important documents including the Student Discipline Policy, Student Academic Misconduct Regulations, Standard of Student Conduct in Non-Academic Matters, and Procedures for Student Appeals in Academic Matters (see weblinks below).

About Student Conduct:

https://secretariat.usask.ca/student-conduct-appeals/index.php

Appeals in Academic Matters:

https://secretariat.usask.ca/student-conduct-appeals/appeals-in-academic-matters.php Academic Misconduct:

https://secretariat.usask.ca/student-conduct-appeals/academic-misconduct.php

Non-Academic Misconduct:

https://secretariat.usask.ca/student-conduct-appeals/non-academic-misconduct.php

A summary of University of Saskatchewan polices relating to academic courses is provided in the document: Academic Courses Policy on Class Delivery, Examinations, and Assessment of Student Learning https://policies.usask.ca/policies/academic-affairs/academic-courses.php

Safety:

Students are expected to work in a safe and responsible manner, to follow all safety instructions, and use any specified personal protective equipment as instructed. Students failing to behave in a safe manner will be asked to leave the laboratory.

Student Supports

Support Services for Arts & Science Students

- Arts & Science Undergraduate Student Office (Arts 265)
- The Trish Monture Centre for Student Success (Arts 250)
 https://artsandscience.usask.ca/undergraduate/advising/
- Student Wellness Centre (3rd & 4th Floors, Place Riel): https://students.usask.ca/health/
- Financial Services: https://students.usask.ca/money/

Student Learning Services

Student Learning Services (SLS) offers assistance to U of S undergrad and graduate students. For information on specific services, please see the SLS web site:

https://library.usask.ca/studentlearning/

Teaching, Learning and Student Experience

The Teaching, Learning and Student Experience Unit (TLSE) focuses on providing developmental and support services and programs to students and the university community. For more information, see https://teaching.usask.ca/about/people/vice-provost-teaching-learning-and-student-experience.php

Examinations through Access and Equity Services (AES)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with AES if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals. In order to access AES programs and supports, students must follow AES policy and procedures. For more information, check www.students.usask.ca/aes, or contact AES at 306-966-7273 or aes@usask.ca. They are located in Rm. E1, Administrative Building.

Students registered with AES may request alternative arrangements for mid-term and final examinations.

Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.