

BIOL 410.3

CURRENT PERSPECTIVES IN ENVIRONMENTAL BIOLOGY

2020-21 Term 2

Time: Tues/Thurs 4:30- 5:50pm

Course dates: January 12, 2021 – April 13, 2021

Location: Virtual – Combined Synchronous (Webex Meeting) and Non-Synchronous (Canvas)

Instructors

Module 1 (Jan 12 to Feb 8)

Dr. Christy Morrissey

Department of Biology &
School of Environment and
Sustainability

Email:

Christy.Morrissey@usask.ca

Module 2 (Feb 9 to Mar 15)

Dr. Charlie Trick

Department of Biology
Office hours: By appointment

Email:

Charles.Trick@usask.ca

Module 3 (Mar 16 to Apr 13)

Dr. Jeff Hudson (Course
coordinator)

Department of Biology
Tel: 306-966-4412

Email:

Jeff.Hudson@usask.ca

Land Acknowledgement

As we engage in Remote Teaching and Learning, we acknowledge that the Saskatoon campus of the University of Saskatchewan is on **Treaty Six Territory** and the **Homeland of the Métis**. We pay our respect to the First Nation and Métis ancestors of this place and reaffirm our relationship with one another. I would also like to recognize that some may be attending this course from other traditional Indigenous lands. I ask that you take a moment to make your own Land Acknowledgement to the peoples of those lands. In doing so, we are actively participating in reconciliation as we navigate our time in this course, learning and supporting each other.

Course Prerequisites

- BIOL 228 (Introduction to Ecology and Ecosystems)
- BIOL 301 (Critical Issues in Biology)
- *and* Permission of the Department as the course is limited to students enrolled in Environmental Biology program

Course Description

This course consists of modules taught by faculty in the environmental sciences. Students will participate in weekly seminars, assigned readings, essays, and oral presentations to learn about current issues in the environment and cutting-edge research with an environmental focus. BIOL 410.3 is designed to be a

capstone course at the fourth year for students in the BSc ENVB program (4th year and Honors) and will be relevant for future career paths in environmental sciences. It will allow students to interact with faculty and learn about current research in the environment being conducted at the University of Saskatchewan. Students will have a chance to apply their diverse interdisciplinary knowledge to current environmental issues in biology, extend their knowledge to the community, refine communication and analytical skills and develop a sense of community with their peers.

Course Rationale

The Earth is currently experiencing unprecedented rates of environmental change brought on by the activities of an expanding human population. This change is creating conflicts and challenges in the management of environmental resources to sustainably support human societies and other biotic communities. Methods in environmental biology and applied ecology form a central tool in effectively dealing with these issues. The aim of this course is to expose students to the theoretical frameworks and practical skills needed to address current challenges in environmental biology using a scientific approach.

This course complements other courses in biology that focus on applied ecology and environmental issues. It is intended to serve as a capstone course for an undergraduate major in Environmental Biology. Within each module of the course, students will be exposed in depth to a different problem or issue in environmental biology and will conduct research or data analysis exercises to explore issues and possible solutions. Students will gain valuable experience in assessing the current scientific literature on an issue, identifying knowledge gaps, and proposing means to address gaps or apply knowledge to existing problems. Group research activities and discussion will also facilitate the expression and integration of different viewpoints and management priorities as related to environmental issues. In addition, students will be exposed to different ways and career paths for applying skills in environmental biology to managing and predicting change in Earth's ecological systems.

Course aims and objectives

The aim of this course is to expose students to the theoretical frameworks and practical skills needed to address issues in environmental biology using a scientific approach. As biologically literate and informed citizens or employees, little of your time will be spent watching lectures, rather you are more likely to be involved in *application* of information using the following skills:

- decision-making
- problem-solving
- investigation
- policy analysis
- debate
- critical and creative thinking
- information-retrieval
- communication

This course is structured to address many of these skills and to integrate knowledge from your Environmental Biology degree major. Instruction by faculty will expose students to a range of different issues and areas of expertise. An emphasis will be placed on examining current issues in applied ecology that have the potential to inform and influence how we manage our impacts on diverse ecosystems.

Learning Outcomes

By the end of this course, students will:

- ❖ Develop familiarity and expertise in current issues related to different topics of environmental biology. This expertise will be built by integrating information derived from a variety of sources, such as introductory lectures, assigned readings of primary research or synthesis articles, and independent research to survey the scientific literature or directly analyze ecological datasets.
- ❖ Be able to compile, summarize, and interpret scientific knowledge obtained from a literature review or primary data analysis.
- ❖ Gain experience in presenting research results through oral and written formats.
- ❖ Develop skills in the management and implementation of individual or small group exercises and research projects, such as setting and meeting project timelines, formulating research objectives, and integration of components into a final presentation.
- ❖ Apply your skills and extend them to the wider community
- ❖ Appreciate the complexity of addressing management issues in socio-ecological systems.
- ❖ Identify tools, processes, and roles for biologists to make positive contributions to addressing issues in environmental biology.

Format and Procedures

The course is structured around two 1.5 hour sessions per week. The format of those activities will vary and may include introductory topic lectures by a faculty member or guest practitioner, small group discussions, and tutorials for research activities. There is no required text, but there will be recommended and required readings for each topic. A list of the readings will be available through Canvas and students will be required to access the digital readings through the Campus library.

Modules taught by the various faculty will each address a different topic or issue in environmental biology. The topics of the modules change from year-to-year, depending on the instructors and the issues of the day. Students will frequently be engaged in conducting some sort of research or analysis exercise for individual modules. In class exercises may be based on independent or group work, or a combination of the two. To facilitate collaborative work, students are asked to come prepared to class and be considerate and respectful of their classmates in all discussions. Students who are experiencing difficulties with group work are encouraged to bring any issues to the attention of the instructor, who will work with the students to develop a solution to the problem.

Course Schedule

Detailed weekly schedule of activities and readings will be provided at the start of each module by individual instructors. * Note there are no classes Feb. 15-19 for the midterm break

Course Schedule

Module	Topic	Instructor	Assignment/Activity	Dates
Module 1: Jan 12 to Feb 8	Wildlife trade and trafficking	Christy Morrissey	1. Infographic summary 2. Written Essay 3. Weekly Discussion boards (4) on assigned readings or investigative research	1. Feb. 1 2. Feb. 8 3. Jan.14-15, 21-22, 28- 29, Feb. 4-5
Module 2: *Feb 9 to Mar 11	Community ecology of epidemics	Charles Trick	1. Reflection – the interview 2. Reflection – 25 years from now. 3. Leadership and participation 4. Class presentation 5. Final Report	1. Feb 11 @ noon 2. Feb 25 @ noon 3. Each and every class 4. Mar 11 + Mar 16 5. Mar 18 @ noon
Module 3: March 16 to April 13	Human Impacts on Marine Ecosystems	Jeff Hudson	1. Introduction to marine systems and human impacts 2. Presentation of assigned readings 3. Information for presentations and essays 4. Student presentations 5. Essays completed	1. March 16 to 23 2. March 23 to 30 3. April 1 4. April 6 and 8 5. April 13

Evaluation Components

Students will receive a final mark for the course that is weighted equally across all 3 modules (33% each). A final grade will be calculated based on the activities described below. A more detailed set of instructions and grading rubric of the assignments in each module will be provided by individual instructors. Each instructor will be responsible for these individual assignments including clarification on requirements, due dates, and submission instructions. For any questions, please direct them to the correct module instructor ahead of the due date. Marks are assigned to each student after each module is completed based on the student's performance in each of the graded activities.

Module 1 (33.3% of final grade)

Assignment 1: Infographic summary

Value: 30% of module grade

Due Date: Feb.1 midnight

Description: An infographic is a graphic, visual representation of information (data, patterns and trends). As part of an individual formative project, students will select a wildlife species that is under threat of poaching or overharvesting (legally or illegally) not covered in the course case studies. You will design a creative infographic that synthesizes the information about the problem in a visual poster-style format. Grading will be on content, visual appeal, argument, organization, citations, and mechanics (detailed rubric will be provided). The infographic must have the following elements:

- name
- a main title for the infographic
- eye catching section headings
- a minimum of 3 colors
- a minimum of 1 graph/chart
- a minimum of 4 other graphics
- 10 facts total on the infographic
- non-fiction text analyzing and summarizing the information
- sources correctly cited as a footnote

Submission: Hand in through Concur before the deadline as a pdf file. Late assignments will be penalized 5% per day for each day late. Late submissions will not be accepted after 3 days.

Assignment 2: Written Essay

Value: 40% of module grade

Due Date: Feb. 8 midnight

Description: Building on the same formative individual project in Assignment 1, students will write a 2000 word essay (plus references) that describes the biology of the species and its decline, the major threat problem, and also include your proposed creative solutions. References and citations are needed (min of 10). Grading will be on the content, argument, citations, and mechanics using a detailed rubric (provided).

Submission: Hand in through Concur before the deadline as a word or pdf file. Late assignments will be penalized 5% per day for each day late. Late submissions will not be accepted after 3 days.

Assignment 3: Discussion Board

Value: 30% of module grade (4 at 7.5% each)

Due Date: Jan.15, 22, 29, Feb. 5 (discussion boards close at midnight; note first post is due Thursdays).

Description: The discussion boards will be open weekly providing an opportunity to engage on a specific question or topic from the assigned readings or directing you to do investigative research. Your first post of 100-200 words in length will provide information and your assessment of the readings must be completed by Thursday at midnight each week. You must reply to at least 2 classmates posts with about 50 words each. The follow up posts/replies must be completed by Friday at midnight where you are asked to reflect on their response or ask meaningful questions, etc.). Discussion boards will close at midnight on Fridays. They will be graded using a rubric (provided) for both your initial and follow up posts for depth and quality of contribution.

Module 2 (33.3% of final grade)

Assignment 1: The Interview

Value: 10% of module grade

Due Date: Feb 11 @ noon

Description: In the reflection papers, you can synthesize the readings, state your reactions to the lessons, raise issues and questions, or be provocative. It is up to you as to what you write as long as the assignment focuses on the prescribed topic. However, you will be evaluated on clarity, the concern of thought, & the ability to create a narrative that adds to the course content.

The "interview" is designed to survey students' motivation to participate in the class (not just this module – any of them). The "interview" is also a chance for you to creatively show your ability and extract pertinent information from a community member. This is to mimic interviews that one would carry out with stakeholders impacted by an environmental event/epidemic. The interview must have the following elements:

- Your name
- The name of the interviewee. Indications of the types of questions you asked the interviewee. These will be embedded in the narrative, not a stand-alone Q&A sequence. .
- As a guide a 300-word essay is your target. References and citations are not needed or desired.

Assignment 2: What will my life be like in 25 years?

Value: 10% of module grade

Due Date: Feb 25 @ noon

Description: By this time in the module, we will have covered the earth's chemistry/physics/biology changes due to I=PAT. In this reflection paper, you will provide a narrative concerning your life in 25-years, with a balanced focus on what the environment will be like and how it affects your opportunities. Remember, this is about YOUR life. For example, "after 25-years in a futile search for a partner, I have decided to become "that cat person" no one talks about in the family. My food and the cat food are delivered daily by Amazon drones. The food is inflated with my 2_L per day water ration to the standard size for weight loss. So, I never have leftovers or need a fridge. Which is good as the electric costs are sky-high with the low water flow through the hydroelectric-generating dams." Or "In 25-years, I will be living in a cave (think ... Fred Flintstone) along with my 25 cats and six other members of the "survivor club." We hunt as well as we can, but the top predator is the Richardson ground squirrel – not much meat on those guys." You will be evaluated on clarity, the concern of thought, & the ability to create a narrative that adds to the course content.

The reflection paper must have the following elements:

- Your name
- A target of 300 words.
- References and citations are not needed or desired.

Evaluation: Leadership and Participation.

Value: 20% of module grade

Due Date: Every class.

Description: *In this type of course, you are expected to contribute to the collective learning of the class. In order to do so, you must prepare the readings carefully. During class, you must listen actively to the class conversation, ask questions of your classmates, offer insights, and **contribute meaningfully**. It also means that you are respectful of your classmates and their opinions, are punctual to class, and do not engage in negative or disruptive behavior. **It is important to discriminate between class participation and contribution.** Class participation focuses on the benefits of your comments to you,*

whereas class contributions focus on the benefits to the class. It is only by deeply engaging in the class process will you be able to contribute to the collective learning of the class. There is also leadership. Did you bring something to the class that you have prepared in advance? Are you stepping up to add meaningful discussion in class? Then that is part of the leadership score.

Final Project

Value: 10% of module grade (presentation) + 50% of module grade (Report)

Due Date: Presentation (in class Mar 9 + 11). Report (Mar 18 @ noon).

Description: Choosing a topic, you will complete an assessment of a microbially-influenced environmental problem. The final product will provide an organized and in-depth analysis of the ecological problem using class tools and concepts. There are several ways to pass on information: as a case study, as an “Executive Summary,” even as a video (with a bibliography). We’ll go over the details in class. The evaluation will be based on the accuracy of the material, clarity of the discussion, use of concepts from class material, and, I guess, pride in the successful completion of the independent presentation.

The class presentation will be short (10 minutes) and will outline how you will handle the product. You will illustrate critical factors, providing knowledge to the class members.

The final case or factbook should be illustration rich, accurate, and illustrate your knowledge level on the subject. The report must have the following elements:

- Your name
- The length should have a target of 1800 – 2200 words.
- References and citations are needed. You are free to use either APA, MLA, or Chicago citation style (but not a mix, ok?).

Module 3 (33.3% of final grade)

Although Earth is often referred to as the “blue planet” humans tend to know more about the moon and outer space than they know about their own oceans. Marine waters cover 71% of Earth and contain the largest ecosystems of the world (pelagic ecosystems) in area and volume. In fact, 99% of the planet’s “living space” for organisms is found in the oceans. My intent is to provide the students of Biol. 410 with an opportunity and forum to explore and expand their knowledge of the environmental issues facing marine systems.

Assignment 1: Student Presentations

Value: 30% of module grade

Due Date: Presentation slot during the April 6 to 8 classes

Type: The presentations will cover human impacts on marine ecosystems that are not directly associated with climate change (e.g., fisheries). A list of potential topics will be provided to assist you. These topics do not overlap with assigned readings that will be covered earlier in the module (March 23 to 30, see schedule). Essays will be graded on a series of criteria (e.g., content, logic, organization and clarity).

Description: Format will be either a synchronous live presentation (e.g., Webex), or a prerecorded and synchronous hybrid presentation. The exact length will be announced at the beginning of module 3, but will likely fall between 5-10 minutes per student with additional time for questions.

Late penalty: If a student is absent during their presentation time and sufficient reasons and documentation are not forthcoming within three days (i.e., of a family emergency, or medical issue)

then a deduction of 20% will be applied to the presentation grade. A second presentation time will be arranged. If the second presentation time is also missed without sufficient reasons (as noted in previous sentence) then the presentation will be assigned a grade of zero.

Assignment 2: Student Essays

Value: 55% of module grade

Due Date: April 13 by 6 pm

Type: The essays will cover human impacts on marine ecosystems that are not directly associated with climate change (e.g., coastal dead zones, and so forth). The essay topic can be similar to the presentation topic (above). These topics do not overlap with assigned readings. Essays will be graded on a series of criteria (e.g., content, logic, organization and grammar)

Description: Essay length will be 1250 to 1500 in length (not including references). Further details to follow.

Late penalty: A late penalty of 5% per day will be applied unless sufficient reasons and documentation are forthcoming within three days of the due date (i.e., of a family emergency, or medical issue).

Class Participation

Value: 15% of module grade

Evaluation period: Throughout the module

Description: The participation of students will be evaluated based on the following: attendance; completion of assigned readings; willingness to engage in class material and presentations (i.e., through questions and discussions).

Criteria That Must Be Met to Pass

A final grade of 50% or higher across the entire course is required to pass the course. Because this is a research and writing-intensive course, there is no final exam. There will be marks assigned by individual instructors as laid out in the table below with additional details provided in rubrics and during class.

Attendance and Participation Expectations (for synchronous/asynchronous components)

This class is based on active learning and in class discussions (in person and online discussion boards). Therefore, it is expected that students will attend weekly virtual Webex classes and come prepared for each class by completing the reading or reviewing other assigned material in advance. Instructors will record class Webex sessions or pre-recorded lectures and post these on Canvas but they cannot fully replace the live interaction of participation in discussions and breakout rooms (which cannot be recorded). Therefore, weekly class attendance is strongly recommended.

Student Questions and Feedback

The instructors welcome informal student feedback and questions throughout the course. Students may raise their hand or use the chat function during live sessions, or contact their instructors by email. Formal opportunities for feedback of the course, material and instructors may be provided at the end of the course.

Use of Video and Recording of the Course

Use of video and recording of the course:

Video conference sessions in this course, including your participation, will be recorded and made available only to students in the course for viewing via Canvas after each session. This is done, in part, to ensure that students unable to join the session (due to, for example, issues with their internet connection) can view the session at a later time. This will also provide you the opportunity to review any material discussed.

Please remember that course recordings belong to your instructor, the University, and/or others (like a guest lecturer) depending on the circumstance of each session and are protected by copyright. Do not download, copy, or share recordings without the explicit permission of the instructor.

For questions about recording and use of sessions in which you have participated, including any concerns related to your privacy, please contact your instructor. More information on class recordings can be found in the Academic Courses Policy <https://policies.usask.ca/policies/academic-affairs/academic-courses.php#5ClassRecordings>.

Required video use

At times in this course, you will be required to have your video on during video conferencing sessions. It will be necessary for you to use of a webcam built into or connected to your computer. This is particularly helpful when engaging in small group activities (Webex Breakout rooms). For questions or concerns about use of video in your sessions, including those related to your privacy, contact your instructor.

Copyright

Course materials are provided to you based on your registration in a class, and anything created by your professors and instructors is their intellectual property and cannot be shared without written permission. If materials are designated as open education resources (with a creative commons license) you can share and/or use in alignment with the [CC license](#). 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 you 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 you copy or distribute others' copyright-protected materials, please ensure that your use of the materials is covered under the University's Fair Dealing Copyright Guidelines available at <https://library.usask.ca/copyright/general-information/fair-dealing-guidelines.php>. For example, posting others' copyright-protected materials on the open web is not covered under the University's Fair Dealing Copyright Guidelines, and doing so requires permission from the copyright holder.

For more information about copyright, please visit <https://library.usask.ca/copyright/index.php> where there is information for students available at <https://library.usask.ca/copyright/students/rights.php>, or contact the University's Copyright Coordinator at <mailto:copyright.coordinator@usask.ca> or 306-966-8817.

Academic Integrity in a Remote Learning Context

Although the face of teaching and learning has changed due to covid-19, the rules and principles governing academic integrity remain the same. If you ever have questions about what may or may not be permitted, ask your instructor. Students have found it especially important to clarify rules related to exams administered remotely and to follow these carefully and completely.

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 Website 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.

All students should read and be familiar with the Regulations on Academic Student Misconduct (<https://secretariat.usask.ca/student-conduct-appeals/academic-misconduct.php>) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (<https://secretariat.usask.ca/student-conduct-appeals/academic-misconduct.php#IXXIIAPPEALS>)

For more information on what academic integrity means for students see the Academic Integrity section of the University Library Website at: <https://library.usask.ca/academic-integrity#AboutAcademicIntegrity>

You are encouraged to complete the Academic Integrity Tutorial to understand the fundamental values of academic integrity and how to be a responsible scholar and member of the USask community - <https://library.usask.ca/academic-integrity.php#AcademicIntegrityTutorial>

Access and Equity Services (AES)

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals at any time. Those students who are registered with AES with mental health disabilities and who anticipate that they may have responses to certain course materials or topics, should discuss course content with their instructors prior to course add / drop dates. In order to access AES programs and supports, students must follow AES policy and procedures. For more information or advice, visit <https://students.usask.ca/health/centres/access-equity-services.php>, or contact AES at 306-966-7273 or aes@usask.ca.

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.

For information on AES services and remote learning please visit <https://updates.usask.ca/info/current/accessibility.php#AccessandEquityServices>

Student Supports

Academic Help for Students

The University Library offers a range of learning and academic support to assist USask undergrad and graduate students. For information on specific services, please see the Learning page on the Library web site <https://library.usask.ca/support/learning.php>.

Remote learning support information <https://students.usask.ca/remote-learning/index.php>
[Class and study tips https://students.usask.ca/remote-learning/class-and-study-tips.php](https://students.usask.ca/remote-learning/class-and-study-tips.php)

Remote learning tutorial https://libguides.usask.ca/remote_learning

Study skills materials for online learning <https://libguides.usask.ca/studyskills>

A guide on netiquette, principles to guide respectful online learning interactions
<https://teaching.usask.ca/remote-teaching/netiquette.php>

Writing support

The Writing Centre offers up to 10 hours of free writing support for students as well as workshops and other materials. This is not an editorial service. For more information see

<https://library.usask.ca/studentlearning/writing-help/>

Student and Enrolment Services Division

The Student and Enrolment Services Division (SESD) focuses on providing developmental and support services and programs to students and the university community. For more information, see the students' web site <http://students.usask.ca>.

Teaching, Learning and Student Experience

Teaching, Learning and Student Experience (TLSE) provides developmental and support services and programs to students and the university community. For more information, see the students' web site <http://students.usask.ca>.

Financial Support

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (<https://students.usask.ca/student-central.php>).

Aboriginal Students' Centre

The Aboriginal Students' Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, bringing Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (<https://www.facebook.com/aboriginalstudentscentre/>) to learn more.

International Student and Study Abroad Centre

The International Student and Study Abroad Centre (ISSAC) supports student success and facilitates international education experiences at USask and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students in their transition to the University of Saskatchewan and to life in Canada. ISSAC offers advising and support on matters that affect international students and their families and on matters related to studying abroad as University of Saskatchewan students. Please visit students.usask.ca or updates.usask.ca for more information.

Recommended Technology for Remote Learning

Students are reminded of the importance of having the appropriate technology for remote learning. The list of recommendations can be found at <https://students.usask.ca/remote-learning/tech-requirements.php>.

Other Supports

Remember, there are many supports available to help you thrive in the remote learning context.

University of Saskatchewan Grading System (for undergraduate courses)

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