Principles of Biomedical Sciences

MEDC 115.18

YEAR 1 TERM 1

COURSE SYLLABUS

2019/2020

UNIVERSITY OF SASKATCHEWAN
College of Medicine
MEDICINE.USASK.CA

Principles in Biomedical Sciences – Course Overview

COURSE DESCRIPTION

The practice of medicine requires grounding in scientific principles, as well as understanding how current medical knowledge is scientifically justified, and how that knowledge evolves. The principles that underlie biological complexity, genetic diversity, human development, micro and gross anatomy, and the influence of nutrition and environment guide our understanding of human health and disease. Curiosity, skepticism, objectivity, and the use of scientific reasoning are fundamental to the practice of medicine. This course will introduce students to the principles of physiology, histology, embryology, anatomy, genetics, oncology, nutrition, pharmacology, microbiology, immunology, and pathology that form the scientific basis of clinical medicine.

Completion of this course will contribute to attaining elements of the overall undergraduate program objectives (Program Learning Objectives).

OVERALL COURSE OBJECTIVES

By the completion of the Principles in Biomedical Sciences course, students will be expected to:

1. Explain the normal form and function of the human body with introductory application to human health and disease.
2. Explain the basics of human nutrition and its role in supporting optimum health and to be able to advise patients on appropriate up-to-date dietary strategies.
3. Apply, at an introductory level, principles of genetics to the diagnosis and management of common genetic disorders and have an approach to basic genetic counseling.
4. Describe the basic principles of pharmacology, how various agents alter homeostasis and the pharmacological basis of therapeutics.
5. Explain the basic principles of general pathology, immunology and microbiology with introductory application to human health and disease.

In addition, each discipline-specific module in the course will also have its own specific objectives.

All learning objectives (course, module, and session) can be accessed on the College of Medicine/Curriculum website under the appropriate year and course. A print version is also available. Please access the link below for the most current objectives.

https://share.usask.ca/medicine/one45/kbase/Curriculum%20Objectives.aspx

COURSE CONTACTS

Course Chair: Dr. Susan Gilmer susan.gilmer@usask.ca (306) 966-4091

Administrative Coordinator: Cheryl Pfeifer cheryl.pfeifer@usask.ca (306) 966-6138

Administrative Assistant: Ariel Laroque ariel.laroque@usask.ca (306) 966-6585

COURSE SCHEDULE

The Principles of Biomedical Sciences Course is organized in 5 modules running concurrently. Session schedules for each of the modules will be posted on one45.

All information relating to this course is available in **one45**. Please check one45 **DAILY** to ensure that you have the most current schedule information**.**

COURSE MODULES

Physiology, Histology, Embryology, and Anatomy (PHE&A)

Genetics

Nutrition

Pharmacology

Microbiology/Immunology/Pathology (M/I/P)

COURSE DELIVERY

Students will learn through a variety of methods, including:

- Large group sessions including lectures, interactive discussions, online materials, and case-based problem solving.
- Facilitated small group learning sessions.
- Independent self-directed reading and exercises.

COURSE MATERIAL ACCESS

Course materials are available in one45. This syllabus, forms, and other useful documents will be posted there.

- If you have not been assigned a user name (NSID – U of S Network Service ID) and password for PAWS, contact Student Central 306-966-1212 or contact IT Services Help Desk 306-966-4817.

Course materials and electronic assignment submission will be done through Course Tools (BBLearn).

RESOURCES

Please see each individual module and/or section on the following pages for required and recommended resources.

COURSE ASSESSMENT OVERVIEW

Course Component	Module Component	Module Weight	Component Requirement	Weighting in Final Principles Module Mark
PHEA Module	Assignments 8 Histology/12 Anatomy Midterm I Midterm II Anatomy/Histology Practical Midterm Final Written Exam Final Practical Lab Exam (+ Necropsy Report)	20% 10% 10% 15% 20% 25%	70% on module	20%
Genetics Module	Take-Home Assignments x 2 (5% each) Teratology Paper Midterm I Midterm II Genetics Section Final Exam	10% 20% 20% 20% 30%	70% on module	20%
Nutrition Module	Written Assignment In-Class Quiz Midterm Nutrition Section Final Exam	10% 5% 35% 50%	70% on module	20%
Pharmacology Module	Midterm I Midterm II Pharmacology Section Final Exam	25% 30% 45%	70% on module	20%
MIP Module	Assessments: Immunology Quizzes x 5 Immunology Histology Pathology In-Class Quizzes Pathology Take-Home Midterm I Midterm II MIP Section of Final Exam	 15% 5% 5% 5% 15% 15% 40%	70% on module	20%
Course Total Mark				100%

POLICY FOR SUCCESSFUL COMPLETION & REMEDIATION

For successful completion of the Principles of Biomedical Sciences Course (hereafter called "Principles") for the purposes of promotion, students must achieve a minimum grade of 70% in each of the five modules within the Principles course [(1) PHEA (Physiology, Histology, Embryology, Anatomy), (2) Genetics and Oncology, (3) Nutrition, (4) Pharmacology and (5) MIP (Microbiology, Immunology and Pathology) Modules]. Students not promoted on the basis of failure of this course will receive a grade of "F" on their transcripts.

A student's grade for each module will be determined at the end of term based on a combination of the weighted graded assessments within each individual module as described in each module section of the syllabus.

The requirements for successful completion of the Principles Course are listed below. Please note that students must meet the overall Term I promotion standards in order to be promoted to Foundations I (see Student Information Guide):

A) Students will be considered to have successfully completed the Principles Course if they have achieved a minimum 70% average grade in each of the five modules.

B) Students who have not received the required 70% average grade in any of the five modules will be deemed to be experiencing academic difficulty. At the end of the term, the severity of academic difficulty will be determined based on a weighted grade deficit assessment (see Table 1 for grade deficit point allocation rubric). In order to intervene with students in danger of experiencing academic difficulty we will meet with students having a midterm mark of less than 70% in any module in any of the midterm exams. These meetings will be between the student and the course chair and Year One Chair or designates to discuss ways to improve academic performance. If the student has a mark of less than 70% in two or more modules in any midterm exam, they will be required to meet with a larger course sub-committee of at least 3 people (made up of the Course Chairs; relevant Module Director(s); Year Chair or designates) to discuss ways to improve academic performance. The goal of such meetings is not meant to be punitive, but will be student-centered, and focused on developing a learning plan to overcome the learning deficits indicated by the mark of less than 70% in the module.

C) At the end of term, any student who has a final mark of less than 70% in any module may be offered remediation for the module(s) for which they did not achieve the standard. This remediation will be followed by a supplemental comprehensive examination for that module. The determination of eligibility for remediation will be based on a grade deficit assessment (see Table 1 for grade deficit point allocation rubric). Students will be offered remediation up to and including the point where they have accrued a maximum of four grade deficit points for Principles.

   Comprehensive supplemental examinations following remediation procedures will be written in the first week of term II.

D) A student will be considered unsuccessful in the Principles course if they accumulate **five grade deficit points** or have failed **one (1) supplemental exam in a module**, whichever comes first. The Year I Term I Promotions Committee and the Student Academic Management Committee will adjudicate further decisions regarding academic outcomes.

E) Students who have not achieved the required 70% average grade in each of the five modules and who have written a supplemental examination, but who still have not achieved the required standard, will be required to meet with the Course Sub-Committee to determine a course of action, which may include additional opportunity to remediate if they have fewer than five deficit points as defined in Section (C); or may include a decision that the student has been unsuccessful in the course and will NOT be offered further supplemental examinations.

F) Success in supplemental assessment will be accorded a maximum grade equivalent to the minimum requirement for that component of the course (70% for a Module).

G) A mark of 0% will be given for any missed quiz or examination, unless otherwise arranged as per the College of Medicine Attendance Policy and Deferral Policy.

Students who are eligible for supplemental examination will be contacted by the Course or Module Director and should arrange to meet with the Module Director or designate to discuss educational issues and develop a learning plan.

Table I: Grade Deficit Point Allocation

	Overall Grade Achieved in Module before Remediation		
	Average < 70% and ≥ 60%	Average < 60% and ≥ 50%	Average < 50%
PHEA	I	II	III
Genetics	I	II	III
Nutrition	I	II	III
Pharmacology	I	II	III
MIP	I	II	III
	Mark of < 70% and ≥ 60%	Mark of < 60% and ≥ 50%	Mark of < 50%
Supplemental Exam	I	II	III

I: one grade deficit point; II: two grade deficit points; III: three grade deficit points

MIDTERM AND FINAL ASSESSMENT DATES

Midterm I
Genetics and Pharmacology – September 13, 2019
PHE& A – September 17, 2019
MIP – September 23, 2019
Anatomy Practical midterm exam - September 28, 2019

Midterm II
PHE& A – October 17, 2019
MIP and Genetics – October 22, 2019
Pharmacology and Nutrition – October 31, 2019

Practical and Written final exams for the Principles Course will take place on November 29, December 2, 5 and 9. (see module sections of this syllabus)

Principles of Biomedical Sciences – Module Syllabus

This section of the course syllabus will describe the specific objectives, requirements, expectations and assessment procedures for each module within the Principles of Biomedical Sciences Course.

- **MODULE 1**

Physiology, Histology, Embryology, and Anatomy (PHE&A)

MODULE COORDINATOR

Dr. Adel Mohamed

Email Address: adel.mohamed@usask.ca

Phone Number: (306) 966-4085

Office Location: HSB 2D01.8

Office Hours: By appointment

MODULE DESCRIPTION

This module covers basic principles of physiology, histology, embryology, and anatomy relevant to biomedical sciences. Each of these disciplines is presented as a section in this module. It is expected that the material covered in this module will be expanded upon, applied, and distributed into the courses presented throughout the rest of the undergraduate medical education program.

GENERAL MODULE OBJECTIVES

See each individual section on the following pages. (Physiology, Histology, Embryology and Anatomy). Detailed learning objectives for each individual session can be found on one45.

COURSE SCHEDULE

All information relating to this course is available in **one45**. Please check One45 **DAILY** to ensure that you have the most current schedule information.

REQUIRED RESOURCES

See each individual section on the following pages. (Physiology, Histology, Embryology and Anatomy)

COURSE DELIVERY

The course is delivered using didactic sessions, anatomy labs, virtual microscopy, integrative cases, online content, in-class audience response quizzes, and other assignments.

STUDENT ASSESSMENT

Assignments	**20%**
Histology and Anatomy Assignments	20%
Exams	**80%**
Midterm I	10%
Midterm II	10%
Anatomy Lab Practical Midterm	15%
Final Exam	20%
Final Practical Lab Exam (including Necropsy Report)	25%

Assignment(s): 8 Histology and 12 Anatomy Assignments

Value: 20% of the PHEA Final Grade

Date: Histology and Anatomy assignments dates are posted in One45

Description: For their Histology assignments, students will label cells and histological structures using virtual slides.

For their Anatomy Imaging assignments, students will identify anatomical structures using online medical images.

For their written Anatomy assignment, students will complete a series of short answer questions based on Anatomy concepts.

Midterm Exam I

Value: 10% of the PHEA Final Grade

Date: September 17, 2019

Type: Comprehensive In-Class; all sections (Physiology, Histology, Embryology and Anatomy) will be covered.

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all content up to and including September 10, 2019.

Anatomy Lab Practical Midterm

Value: 15% of the PHEA Final Grade

Date: September 28, 2019

Type: Lab stations. All Anatomy content up to and including Lower Limb III. Histology content will be up to and including September 27, 2019.

Description: Anatomy and Histology stations. Thorax, Upper Limb and Lower Limb.

Midterm Exam II

Value: 10% of the PHEA Final Grade

Date: October 17, 2019

Type: Comprehensive In-Class; all sections (Physiology, Histology, Embryology and Anatomy) will be covered.

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all content from September 11 up to and including October 10, 2019.

Practical Final Exam

Value: 25% of the PHEA Final Grade

Date: December 5, 2019

Type: Lab Stations

Description: Anatomy and Histology sections. Head and Neck and Abdomen and Pelvis. This mark will also include the necropsy report.

Final Exam

Value: 20% of the PHEA Final Grade

Date: December 9, 2019

Type: Comprehensive In-Class; all sections (Physiology, Histology, Embryology and Anatomy) will be covered.

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all material with an emphasis on material after October 11, 2019.

COURSE EVALUATIONS QUALITY IMPROVEMENT

The following changes reflect course quality review recommendations and student feedback:

1. For Anatomy, this year we will be staggering the lecture and labs to give students time to review lecture material before going to the lab that addresses the lecture content. This is in response to student concern that turnaround time between lecture and lab was too soon to allow for integration and full application in the lab.
2. All objectives for anatomy have be reviewed and revised.
3. For Histology, a new self-test component for each online learning module, consisting of one question for each learning objective, will be implemented to address student concerns about types of histology questions and how they relate to learning objectives.

Physiology Section

SECTION LEAD

Dr. Wolfgang Walz

Email Address: wolfgang.walz@usask.ca

Phone Number: (306) 966-7618

Office Location: HSB GD30.8

Office Hours: Please use email to request an appointment

SECTION DESCRIPTION

The section gives an overview about the functions of the normal body and how it handles extreme, but not yet pathological conditions. Thus, the students gain an understanding on the workings of the normal human body and the limits of its functioning. As much as possible the connections to pathological conditions is made, so the students can judge the grey zone between extreme, but still functioning, situations and appearance and genesis of pathological conditions.

SECTION OBJECTIVES

By the completion of this module, students will be expected to:

1. Define basic terms used in Physiology.
2. Explain and apply the concept of homeostasis.
    - Recall numerically important physiological variables and perform simple calculations.
    - Relate the consequences of changes in normal physiology to selected disease states.
3. Describe in general terms the functions of the major body systems.
    - Explain how various cellular mechanisms determine the functions of the major organs.
    - Explain how cells interact with each other and how their activities are coordinated to produce organ functions.
4. Describe how organ systems interact and how their activities are coordinated.
    - Explain the mechanisms underlying neural and endocrine communication.

SECTION SCHEDULE

All information relating to this section is available in **one45**. Please check one45 **DAILY** to ensure that you have the most current schedule information**.**

REQUIRED RESOURCES

There are no required resources. A recommended textbook throughout the first two years physiology is:

WF Boron & EL Boulpaep (2012). Medical Physiology. Updated Second Edition. Saunders Elsevier.

To address deficiencies in the basic science background which some students might experience, online material Physicochemical Basis of Physiological Mechanisms will be posted after the first lecture. This online material can be used by these students whenever they feel a need throughout the upcoming Physiology lectures. The material will be not part of the regular lectures as it will be assumed that all students will have acquired this basis in one way or another. The material will not be part of the exam.

SECTION DELIVERY

Didactic sessions with detailed clinical examples capping all lectures. These clinical cases deal with the physiological or pathophysiological basis of disease as it applies to the lecture's content in more detail. The cases are accompanied by a catalogue of questions, which will be discussed in class. The cases will be used to apply the physiological principles of the lecture in a clinical setting.

STUDENT ASSESSMENT

See Student Assessment section on Physiology, Histology, Embryology and Anatomy page.

Histology Section

SECTION LEAD

Dr. Helen Nichol

Email Address: h.nichol@usask.ca

Phone Number: (306) 966-4094

Office Location: HSB 3B40

Office Hours: By appointment only

SECTION DESCRIPTION

To provide an introduction to normal cell and tissue structure in humans, this section of this module is presented in the following formats: Online lectures, online laboratory exercises and assignments using Virtual Microscopy, microscope room for active examination of slides and demonstration material. Release time is granted for Online Training sessions.

SECTION OBJECTIVES

By the completion of this module, students will be expected to:

1. Define the vocabulary used to describe the structure of human cells, tissues, and organs.
2. Describe the appearance and function(s) of common cellular organelles, cytoplasmic components and extracellular matrices and appreciate that differences in organelles in each cell type has a functional meaning.
3. Describe cellular processes fundamental to life such as: cell division, protein synthesis, processing and secretion of proteins, assembly of plasma membrane components, energy production, endocytosis, apoptosis, necrosis.
4. Distinguish between light, fluorescence and electron micrographs and understand in a general way how these are used in the scientific literature.
5. Apply the information gathered in lectures, labs and assignments to integrate and synthesize how the 5 basic tissues contribute to the overall function, organization and complexity of organs and organ systems.
6. Apply knowledge of how cells differentiate to explain how tissues develop, grow and mature over the human lifespan.
7. Demonstrate knowledge of a few selected clinical problems that are manifested in visible changes to cells and tissues.

Lab Objectives

1. Identify cells and tissues using Virtual Microscopy during participation in online laboratories and assignments.
2. Identify normal cells and tissues in histological preparations as a prelude for future clinical experiences in pathology and related areas.
3. Demonstrate mastery of identification at a basic level in laboratory practical.

SECTION SCHEDULE

All information relating to this section is available in **one45**. Please check one45 **DAILY** to ensure that you have the most current schedule information.

REQUIRED RESOURCES

Textbooks: Both are available as Kindle editions.

Wheater's Functional Histology by Barbara Young, Phillip Woodford and Geraldine O'Dowd (2013) [ISBN 978-0-7020-4747-3]

OR

Histology: A Text and Atlas (2016) by M.H. Ross and W. Paulina [ISBN 978-1-4511-8742-7]

SECTION DELIVERY

Lectures will be delivered online and will include histology labs using virtual microscopy and the histology study room.

STUDENT ASSESSMENT

See Student Assessment section on Physiology, Histology, Embryology and Anatomy page.

Embryology Section

SECTION LEAD

Dr. Greg Malin

Email Address: greg.malin@usask.ca

Phone Number: (306) 966-6216

Office Location: HSB B526.5

Office Hours: By appointment

SECTION DESCRIPTION

This section provides a brief introduction into the earliest stages of human development. The focus will be on developmental processes starting from fertilization through the first 4 weeks of development and cellular differentiation. This will provide the necessary embryologic background in order to learn specific organ system and tissue development and differentiation in the Foundations of Clinical Medicine courses.

SESSION OBJECTIVES

Detailed learning objectives can be found on one45 for the individual session.

SECTION SCHEDULE

All information relating to this section is available in **one45**. Please check one45 **DAILY** to ensure that you have the most current schedule information**.**

REQUIRED RESOURCES

Larsen's Human Embryology by Shoenwolf, Brauer [978-0443-06811-9]

SECTION DELIVERY

Didactic sessions

STUDENT ASSESSMENT

See Student Assessment section on Physiology, Histology, Embryology and Anatomy page.

Anatomy Section

SECTION LEAD

Dr. Adel Mohamed

Email Address: adel.mohamed@usask.ca

Phone Number: (306) 966-4085

Office Location: HSB 2D01.8

Office Hours: By appointment

SECTION DESCRIPTION

To provide an introduction to gross human anatomy, this section of this module is presented in the following formats: lectures, interactive large group sessions, active cadaveric dissection, surface anatomy, and medical imaging. The majority of the section time will be spent in active cadaveric dissection.

SECTION OBJECTIVES

By the end of this module, students will be able to:

1. Define vocabulary that describes the gross structure of the human body.
2. Participate in and complete a cadaveric dissection of a human body.
3. Use the information gathered in the cadaver lab, in class, and in the assigned assignments to describe human anatomy.
4. Apply anatomical concepts to various clinical situations.
5. Identify normal anatomy through imaging techniques such as planar radiograms, CT and MR.

SECTION SCHEDULE

All information relating to this section is available in one45. Please check one45 **DAILY** to ensure that you have the most current schedule information**.**

REQUIRED RESOURCES

Students will conduct dissections on preserved embalmed human bodies, specimens. In laboratory, students will need to bring the following materials (available from university book store).

One or two dissector kits per dissection group (available at various bookstore locations), which contain:

- Scalpel handle
- Forceps, blunt point
- Forceps, fine tip
- Dissecting needles or probes
- Scalpel blades (matching the scalpel handle in the dissector kit
- Examination Gloves
- Eye protection if needed (e.g. glasses or goggles)
- Protective clothing (e.g. lab coat)
- Anatomy Atlas (one per cadaver, Grant's or Netter's)

Go into anatomy lab early and often. Make sure you keep up with the learning objectives throughout and ask questions if something is unclear.

Textbooks:

Essential Clinical Anatomy by Moore KL, Agur MR [987 1145 1187496]

One of:

Grant's Atlas of Anatomy [978 0781796125]

Netters Atlas of Human Anatomy [9781455704187]

Recommended: Undergraduate Diagnostic Imaging Fundamentals E-Book

The Undergraduate Diagnostic Imaging Fundamentals, by Dr. Brent Burbridge (MD, FRCPC) is an e-book resource to augment the presentation for imaging of common clinical conditions. Guiding principles related to minimizing radiation exposure, requesting appropriate imaging, and static images are enhanced and discussed. Additionally, users can access other imaging from the Dicom viewer (ODIN) to further advance their experience with viewing diagnostic imaging pathologies.

https://openpress.usask.ca/undergradimaging/

SECTION DELIVERY

The anatomy dissection course is partly instructor directed but mostly self, independent and experiential learning driven. Each lab will begin promptly with a brief dissection demonstration by anatomy instructors as needed. Students need to prepare for the lab in advance by prior reading of dissection objectives.

The class will be divided into several groups of 7-8 students per cadaver. At each lab session, half of a group will be dissecting while the other half may assigned to ultrasound and surface anatomy sessions. All students are expected to attend the first 10-15 minutes of dissection demonstration. In addition the students who did not dissect will return to attend the last 20 minutes of the lab to learn what has been dissected through peer teaching.

If you must miss a laboratory session (dissection, ultrasound or surface anatomy), it is required that arrangements be made to make up the study during another time. Laboratory instructors are available for consultation during regularly scheduled office hours (8am-5pm).

STUDENT ASSESSMENT

See Student Assessment section on Physiology, Histology, Embryology and Anatomy page.

Surface Anatomy

LEAD

Dr. Tom Langer

Email Address: tlanger@saskel.net

Phone Number: (306) 966-4091

Office Location: B512 HSB

Office Hours: By appointment only

OBJECTIVES

During the sessions, students will be expected to:

1. Demonstrate knowledge of topographical anatomy of the entire human body.

SECTION DELIVERY

While half of each group is dissecting, the other half will be assigned to Surface Anatomy or Ultrasound sessions. All groups are expected to attend the first 10-15 minutes of dissection demonstration of each lab. The surface anatomy groups will also be expected to return to lab for the last 20 minutes to learn what has been dissected.

If you must miss a session, it is required that arrangements be made to make up the study during another time. Laboratory instructors are available for consultation during regularly scheduled office hours (8am-5pm).

Ultrasound Guided Medical Education: Anatomy

LEAD

Dr. Desiree Rouleau

Email Address: desiree.rouleau@usask.ca

Office Hours: By appointment only

DESCRIPTION

The growing worldwide use of clinician-performed ultrasound (CPU) heralds a dramatic change in medical education, bedside medicine, and patient care. With steadily improving portability, accessibility and technology, ultrasound continues to be a rapidly growing part of healthcare worldwide. Likewise, the application of CPU in medical education is also increasing, with medical schools throughout Europe and North America integrating ultrasound-based learning throughout their undergraduate curriculum. As a learning tool, ultrasound through real and dynamic imaging, allows students to assess and explore key anatomic and physiologic concepts.

OBJECTIVES

During the sessions, students will be expected to:

1. Demonstrate basic image generation skills.
2. Explain and describe human anatomical structure as seen in 2D ultrasound images.

SECTION DELIVERY

The ultrasound-guided anatomy section is instructor directed (instructors will be supervising and assisting with image generation at each session) but also requires a significant amount of self, independent and experiential learning. Students need to prepare for the lab in advance by watching short tutorial videos (~15 minutes/session) that will introduce learners to the image generation techniques required for the given session.

The class will be divided into several groups of 4-5 students per volunteer patient/ultrasound machine. While half of the groups will be undertaking their ultrasound guided anatomy session, the other half will be assigned to other activities (independent study). After an hour, the groups will swap activities. All groups are expected to return to the dissection lab and attend the last 20 minutes to learn what has been dissected.

MODULE 2

Genetics Module

MODULE DIRECTOR

Dr. Patricia Blakley

Email Address: patricia.blakley@usask.ca

Phone Number: (306) 966-8556

Office Location: HSB B526

Office Hours: By appointment only

MODULE DESCRIPTION

Genetics is playing an increasingly significant role in the diagnosis and management of patients. As such, it is important that students acquire knowledge of the basic principles and concepts in medical genetics. Students will also gain knowledge of the potential effects of prenatal exposure to teratogens. Through a series of case presentations, the students will begin to develop a gestalt for common genetic syndromes. Through a combination of didactic sessions, clinical case presentations, patient interviews and assignments, it is hoped that the medical students, as future physicians, will be able to apply this knowledge in a clinical setting. This course consists of a total of 15 hours of class time.

MODULE OBJECTIVES

By the completion of this module, students will be expected to:

1. Apply the basic principles of genetics to the understanding, diagnosis and management of genetic diseases.
2. Analyze genetic pedigrees.
3. Recognize the various patterns of inheritance.
4. Apply the Principles of Teratogenesis so as to better understand the risks from teratogen exposure.
5. Develop an approach to the dysmorphic patient.
6. Recognize the genetic causation for common cancers.
7. Describe the role of palliative care in the management of patients with chronic genetic disorders or cancer.

Detailed learning objectives for each individual session can be found on One45.

MODULE SCHEDULE

All information relating to this course is available in **one45**. Please check one45 **DAILY** to ensure that you have the most current schedule information**.**

REQUIRED RESOURCES

Schaefer, GB and Thompson, JN (2014) Medical Genetics an Integrated Approach. McGraw Hill Education: New York. Details of the pre-readings from this text for the lectures will be provided on One45.

MODULE DELIVERY

Through a combination of didactic lectures, clinical case presentations and assignments, this exposure to medical genetics should provide the foundation for medical students as future physicians to integrate and apply this knowledge in a clinical setting.

STUDENT ASSESSMENT

Assignments	**30%**
Two (2) Take Home Genetics Assignment (worth 5% each)	10%
Teratology Paper	20%
Exams	**70%**
Genetics Section of Midterm I	20%
Genetics Section of Midterm II	20%
Genetics Section of the Final Exam	30%

Assignment 1: Pedigree Assignment

Value: 5% of Final Grade

Date: August 23, 2019

Description: Take home assignment to complete two genetic pedigrees from completed family history forms.

Assignment 2: Patterns of Inheritance Assignment

Value: 5% of Final Grade

Date: September 6, 2019

Description: Take home assignment to identify various patterns of inheritance based on pedigree or case description.

Assignment 3: Teratology Paper

Value: 20% of Final Grade

Date: September 27, 2019

Description: Paper on a teratogen of student's choice. Assignment expectations and scoring rubric to be posted on BBLearn.

Midterm Exam I

Value: 20% of the Genetics Final Grade

Date: September 13, 2019

Type: Comprehensive In-Class

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all content up to and including September 6, 2019.

Midterm Exam II

Value: 20% of the Genetics Final Grade

Date: October 22, 2019

Type: Comprehensive In-Class

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all content in lectures from September 7, 2019 up to and including October 15, 2019.

Final Exam

Value: 30% of the Genetics Final Grade

Date: November 29, 2019

Type: Comprehensive In-Class

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all module content with an emphasis on material after October 15, 2019.

COURSE EVALUATIONS QUALITY IMPROVEMENTS

Based on suggestions made by the students more case presentations will be added to the module. An additional hour of lecture time has been made available and will be used for the integration of the information presented in the class as it relates to the diagnosis of specific common genetic syndromes and evaluation of familial risk for such conditions. There will be additional incorporation of case discussions earlier in the term to highlight key genetic principles. There will be greater emphasis on information that the students need to know to be successful in the module and as well as information that is important for future clinical experiences. The genetic testing lectures will be reworked so that the information provided in the lectures meets the session objectives in a manner which is more conducive to student learning.

General Comments: (e.g. monitoring process, results, reflections)

This is the fourth year of the revised genetics module and the first year where only genetic content will be presented. Student comments and concerns will continue to be addressed and incorporated into the module.

MODULE 3

Nutrition Module

MODULE DIRECTOR

Dr. Louise Gagne

Email Address: lgagne@sasktel.net

Phone Number: (306) 477-5683

Office Hours: By appointment only

MODULE DESCRIPTION

The module covers a broad overview of basic nutrition relevant to medical practice. Topics include: nutrition and chronic disease, macronutrients (protein, carbohydrates and fats), minerals, vitamins, phytochemicals, fiber, whole foods, healthy meal planning, vegan and vegetarian diets, liquids, Mediterranean diet, nutrient-drug and nutrient-nutrient interactions, nutritional supplements, nutrition through the life cycle and nutritional resources.

MODULE OBJECTIVES

By completion of this module, students will be expected to:

1. Describe the key components of a healthy diet.
2. Describe the risks and benefits of some common nutritional supplements.
3. Identify potential food/drug/nutrient interactions.

Detailed learning objectives for each individual session can be found on One45.

MODULE SCHEDULE

All information relating to this course is available in **One45**. Please check One45 **DAILY** to ensure that you have the most current schedule information**.**

MODULE DELIVERY

The module will be taught through didactic lectures, case discussions and assigned reading material for self-study.

STUDENT ASSESSMENT

Assessments	**15%**
Written Assignment	10%
In-Class Quiz	5%
Exams	**85%**
Midterm	35%
Nutrition Section of the Final Exam	50%

In-Class Quiz

Value:	5% of the Nutrition Final Grade
Date:	October 16, 2019
Type:	In-Class Quiz
Description:	In-Class Quiz worth 5% of final mark

Assignment

Value:	10% of the Nutrition Final Grade
Date:	November 13, 2019
Description:	This assignment will involve a critique and analysis of a specific diet(s).

Midterm Exam

Value:	35% of the Nutrition Final Grade
Date:	October 31, 2019
Type:	Comprehensive In-Class
Description:	Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all content up to and including October 23, 2019.

Final Exam

Value: 50% of the Nutrition Final Grade

Date: December 2, 2019

Type: Comprehensive In-Class

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all module content with an emphasis on content after October 23, 2019.

COURSE EVALUATIONS QUALITY IMPROVEMENT

The following changes reflect course quality review recommendations and student feedback:

1. Work to improve communication with the students regarding course expectations.
2. Include more references to support the nutritional content in the course.
3. Discontinue the use of the current textbook.

MODULE 4

Pharmacology Module

MODULE DIRECTOR

Dr. Stan Bardal

Email Address: stan.bardal@usask.ca

Phone Number: (306) 966-6294

Office Location: GB33 Health Sciences Building

Office Hours: 9:00 am to 5:00 pm

MODULE DESCRIPTION

The module of pharmacology will briefly deal with the historical development of pharmacology and major drug discoveries. The module will provide knowledge about general principles of pharmacology including pharmacodynamics and pharmacokinetics, drug interactions, principles of therapeutics in specific age groups of patients, fundamental principles of toxicology, concepts of drugs modulating the autonomic nervous system and basic principles of chemotherapy.

MODULE OBJECTIVES

By the completion of this module, students will be expected to:

1. Describe the principal mechanisms by which drugs act in the body and differentiate between therapeutic effects and unwanted effects of drugs.
2. Describe the pharmacokinetic factors which affect the amount of drug and its duration of action in the body.
3. Apply the knowledge gained in this course to drugs taught under different systems.

Detailed learning objectives for each individual session can be found on One45.

MODULE SCHEDULE

All information relating to this course is available in **one45**. Please check one45 **DAILY** to ensure that you have the most current schedule information**.**

REQUIRED RESOURCES

Recommended textbooks:

Goodman & Gilman's Manual of Pharmacology and Therapeutics (2nd Edition). Eds. By Hilal-Dandan & Brunton.

Principles of Pharmacology: The pathophysiologic Basis of Drug Therapy. By David E Golan (3rd Edition).

Applied Pharmacology. By Stan Bardal, Jason Waechter, Doug Martin. ISBN [978-1-4377-0310-8]

MODULE DELIVERY

The module will be taught through didactic lectures and by case presentations.

STUDENT ASSESSMENT

Exams	**100%**
Midterm I	25%
Midterm II	30%
Pharmacology Section of the Final Exam	45%

Midterm Exam I

Value: 25% of the Pharmacology Final Grade

Date: September 13, 2019

Type: Comprehensive In-Class

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all content up to and including September 4, 2019 EXCEPT the Chemotherapy I lecture.

Midterm Exam II

Value: 30% of the Pharmacology Final Grade

Date: October 31, 2019

Type: Comprehensive In-Class

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all content in lectures from Chemotherapy I (September 4) up to and including October 22, 2019.

Final Exam

Value: 45% of the Pharmacology Final Grade

Date: December 2, 2019

Type: Comprehensive In-Class

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all module content with a focus on material after October 22, 2019.

COURSE EVALUATIONS QUALITY IMPROVEMENT

The following changes reflect course quality review recommendations and student feedback:

No major changes were made for this upcoming academic year. Feedback from students suggested there was no need to make any substantial changes. Students appear to appreciate the clinical cases we have incorporated into lectures so we will try to feature more of those, as time permits.

MODULE 5

Microbiology, Immunology and Pathology Module (M/I/P)

MODULE DIRECTOR - ACTING

Dr. Kathy Malejczyk

Email Address: kathy.malejczyk@saskhealthauthority.ca

Phone Number: (306) 766-4805

Office Hours: By appointment only

MODULE DESCRIPTION

To provide a deeper understanding of disease processes, this section of this module is comprised of the basic principles of microbiology, immunology and pathology.

MODULE OBJECTIVES

Detailed learning objectives for each individual session can be found on One45.

MODULE SCHEDULE

All information relating to this course is available in **One45**. Please check One45 **DAILY** to ensure that you have the most current schedule information**.**

REQUIRED RESOURCES

See each individual section on the following pages. (Microbiology, Immunology and Pathology)

MODULE DELIVERY

See each individual section on the following pages. (Microbiology, Immunology and Pathology)

STUDENT ASSESSMENT

Assessments	**30%**
Immunology Quizzes x 5	15%
Immunology Histology Assignment	5%
Pathology In-Class Quizzes	5%
Pathology Take-Home Assignment	5%
Exams	**70%**
Midterm I	15%
Midterm II	15%
MIP Section Final Exam	40%

Assessments: Immunology quizzes (5), Histology Assignment and Pathology in-class quizzes and a take-home assignment.

Value: 30% of final grade (Immunology Quizzes 15%; Histology Assignment 5%; two Pathology Quizzes – 5% and take home Pathology assignment – 5%).

Date: Quiz and assignment due dates are posted in one45

Description: For the Histology assignments, students will label cells and histological structures using virtual slides.

Pathology quizzes will be in-class closed-book multiple choice questions based on pre-reading and lecture material.

Pathology take-home assignment on Neoplasia consists of completing a worksheet.

For the Immunology quizzes, students will be asked to watch short videos related to the lecture material, either before or after the lecture. Then the students will answer a short quiz, based on the information provided in the video they watched. The quizzes consist of multiple choice, short answer and/or matching questions. Immunology quizzes are open-book and there are 5 in total worth 3% each.

Midterm Exam I

Value: 15% of the MIP final grade

Date: September 23, 2019

Type: Comprehensive In-Class; all sections (Microbiology/Immunology/Pathology) will be covered.

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all content up to and including September 16, 2019.

Midterm Exam II

Value: 15% of the MIP final grade

Date: October 22, 2019

Type: Comprehensive In-Class; all sections (Microbiology/Immunology/Pathology) will be covered.

Description: Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all content from September 17, 2019 and to and including October 15, 2019.

Final Exam

Value:	40% of the MIP final grade
Date:	November 29, 2019
Type:	Comprehensive In-Class; all sections (Microbiology/Immunology/Pathology) will be covered.
Description:	Question type may include: multiple choice, multiple choice multiple answer, fill in the blank, true-false, short answer, matching, and extended written questions based on all module content with a focus on content after October 15, 2019.

COURSE EVALUATIONS QUALITY IMPROVEMENT

The following changes reflect course quality review recommendations and student feedback:

1. We continue to have the reduced number of modules tested in the midterms.

Microbiology Section

SECTION LEAD

Dr. Kathy Malejczyk

Email Address: kathy.malejczyk@saskhealthauthority.ca

Phone Number: (306) 766-4805

Office Hours: By appointment only

SECTION DESCRIPTION

Microbiology is the study of micro-organisms (bacteria, viruses, fungi and parasites). Infectious diseases are diseases caused by living organisms, mostly microscopic but occasionally large enough to be visible to the naked eye (e.g. some parasites) that infect or infest the human body. Infectious diseases play a unique role in human health and disease:

- They may be transmitted from person to person.
- They may be acquired from the environment, food / water or animals.
- There is a complex interaction between host, microbe and environment that determines whether or not infection and disease occurs.
- Infectious diseases often affect the community as well as individual patients.

In contrast to many other conditions you will study in systems, you will find there is an extra layer of complexity in the study of infectious diseases in that one pathogen may cause a variety of different diseases depending on the host, the site of infection etc. and a single disease entity may be caused by a variety of different pathogens, which in turn may result in different treatment requirements.

Within the MIP module, 15 hours are dedicated to a basic foundation for microbiology and infectious diseases. With this limited time, only a very rudimentary approach to this important topic can be achieved. Students are strongly urged to obtain and use the recommended text throughout their systems to supplement the sessions in MIP and assist them in developing a more robust understanding of infectious diseases.

SECTION OBJECTIVES

By the completion of this module, students will be expected to:

1. Recognize local and systemic clinical features of infection, in general
2. Recognize variation in micro-organisms in general terms, including differences between normal flora ecosystems, propensity to cause human disease and factors influencing virulence.
3. Describe methods of transmission of infectious disease being able to give common examples for each
4. Describe methods of infection control including personal protection strategies and aseptic technique
5. Describe the different classes and the spectrum of activity of commonly used antibiotics
6. Begin to recognize the role/value of antibiotic stewardship in minimizing development of antibiotic resistant organisms

SECTION SCHEDULE

All information relating to this section is available in **one45**. Please check one45 **DAILY** to ensure that you have the most current schedule information**.**

REQUIRED RESOURCES

Review of Medical Microbiology and Immunology (Lange ...Medical Books) Paperback. by Warren Levinson (Author). [978-0071845748]

Clinical Microbiology Made Ridiculously Simple: Mark Gladwin MD, William Trattler MD, C. Scott Mahan MD: [9781935660156]

SECTION DELIVERY

This material is delivered as whole class sessions. Pre-reading as well as post-lecture reading will be required (and is essential) for all sessions. Sessions will be delivered from either Saskatoon or Regina and video conferenced to the other location. Whenever permitted by the instructor, sessions will be recorded for reference and review.

STUDENT ASSESSMENT

See Student Assessment section on the Microbiology, Immunology and Pathology page.

COURSE EVALUATIONS QUALITY IMPROVEMENT

The following changes reflect course quality review recommendations and student feedback:

1. Reorder lectures so that antibiotics are taught in both pharmacology and microbiology at approximately the same time within the curriculum.
2. Continue with reorganized power point notes.
3. Continue with clinical perspective in lecture and exam questions.

Immunology Section

SECTION LEAD

Dr. Germaine Arendse

Email Address: gva775@mail.usask.ca

Phone Number: c/o Cheryl Pfeifer at (306) 966-6138

Office Hours: By appointment only

SECTION DESCRIPTION

The overall objective is to develop a minimal framework for how the immune system functions, so students will have the basis, using the information technology available, to integrate the information provided and interpret case studies that are related to the immune system.

SECTION OBJECTIVES

By the completion of this module, students will be expected to

1. Describe the components and functions of the innate immune system and how it is integrated with the adaptive immune system.
2. Describe the five characteristics of the immune system: universality, specificity, self-nonself discrimination, positive memory and immune class regulation.
3. Discuss the role of the immune system in allergy, autoimmunity, transplantation and cancer.
4. Describe how the immune system can be harnessed for vaccination and allergy/cancer immunotherapy.
5. Describe how antibodies are produced, as well as their structure and function.
6. Provide examples of genetic diseases affecting the immune system.

SECTION SCHEDULE

All information relating to this section is available in **one45**. Please check one45 **DAILY** to ensure that you have the most current schedule information**.**

RECOMMENDED RESOURCES

Review of Medical Microbiology and Immunology (Lange Medical Books) Paperback. by Warren Levinson (Author). 978-0071818117

Immunology Made Ridiculously Simple: Massoud Mahmoudi: 978-0-940780-89-7

Immunology Note Package (Chris Rudulier)

SECTION DELIVERY

This module will be team taught and will utilize a variety of teaching strategies to include lecture, small group work and virtual microscopy. Student pre-reading is required in this module. Students are strongly encouraged to come to class prepared to participate in the learning activities.

STUDENT ASSESSMENT

See Student Assessment section on the Microbiology, Immunology and Pathology page.

COURSE EVALUATIONS QUALITY IMPROVEMENT

The following changes reflect course quality review recommendations and student feedback:

1. Continue the use of small quizzes to assess lecture material.
2. Continue the video format of pre-reading material.

Pathology Section

SECTION LEAD

Dr. Jay Kalra

Email Address: jay.kalra@usask.ca

Phone Number: (306) 655-2152 (Admin Assistant: Debbie Chamberlain – (306) 655-0238)

Office Location: 3756A RUH

Office Hours: By appointment only

SECTION DESCRIPTION

This section involves the study of the pathogenetic mechanisms and pathology involved in clinical disease processes as applied to patient management. As such, it will provide an overview of the general pathological conditions and principles common to underlying systemic afflictions of the body as applicable to the real life practices of medicine. The role of the laboratory in the day-to-day clinical management of patients in relation to systemic and oral pathologies will be explored. Students will be engaged actively in a variety of instructional experiences that will help interweave the threads of understanding which link the pathology of diseases through multiple disciplines.

SECTION OBJECTIVES

By completion of this module, the students will be expected to:

1. Describe the basic principles of Pathology and laboratory medicine, including principles and effects of various physiological and analytic causes of variability in lab tests, quality care and patient safety, with special focus on medical error and disclosure policies.
2. Define autopsy, necropsy and the role of coroner.
3. Discuss the vascular, cellular events, mediators of acute and chronic inflammation, wound healing, repair, regeneration, hemorrhage, thrombosis and atherosclerosis with clinical correlates.
4. Describe types of amyloidosis with clinico-pathological correlates.
5. Discuss the basis of clinical presentation of tumors, the basic science of neoplasms including the genetic chemical basis of neoplasm
6. Differentiate between benign and malignant tumors.
7. Identify the cancer management modalities and their intent when used.

REQUIRED RESOURCES

Robbins Basic Pathology, 9e (Robbins Pathology) [Hardcover] Vinay Kumar MBBS MD FRCPath (Author), Abul K. Abbas MBBS (Author), Jon C. Aster MD PhD (Author) [ISBN 978-1-4377-1781-5] Edition: 9

Recommended: Undergraduate Diagnostic Imaging Fundamentals E-Book

The Undergraduate Diagnostic Imaging Fundamentals, by Dr. Brent Burbridge (MD, FRCPC) is an e-book resource to augment the presentation for imaging of common clinical conditions. Guiding principles related to minimizing radiation exposure, requesting appropriate imaging, and static images are enhanced and discussed. Additionally, users can access other imaging from the Dicom viewer (ODIN) to further advance their experience with viewing diagnostic imaging pathologies.

https://openpress.usask.ca/undergradimaging/

SECTION DELIVERY

See section delivery on the Microbiology, Immunology and Pathology page.

STUDENT ASSESSMENT

See Student Assessment section on the Microbiology, Immunology and Pathology page.

COURSE EVALUATIONS QUALITY IMPROVEMENT

The following changes reflect course quality review recommendations and student feedback:

1. We have integrated the oncology section (formerly part of the genetics module) with the neoplasia lectures in pathology.
2. Add more case-based material.

IMPORTANT AND RELEVANT STUDENT INFORMATION

The following information is extremely important for your success in medical school. Please refer to the UGME Policies page and the Student Information Guide for the following policies:

UGME CONTACT INFORMATION

EMAIL COMMUNICATIONS

ETHICS AND PROFESSIONALISM

PROGRAM EVALUATION

GUIDELINES FOR PROVIDING FEEDBACK

EMERGENCY PROCEDURES

MD PROGRAM ATTENDANCE POLICY

ASSESSMENT POLICY

PROMOTION STANDARDS

CONFLICT OF INTEREST

NON-INVOLVEMENT OF HEALTH CARE PROVIDERS IN STUDENT ASSESSMENT

APPEALS PROCEDURES

STUDENT DISCRIMINATION, HARASSMENT, AND MISTREATMENT PROCEDURE

ACCOMMODATION OF STUDENTS WITH DISABILITIES

OFFICE OF STUDENT AFFAIRS

Where a specific College of Medicine policy or procedure does not exist, the College refers to the U of S Academic Courses Policy at http://policies.usask.ca/policies/academic-affairs/academic-courses.php

UNDERGRADUATE MEDICAL EDUCATION ASSIGNMENT SUBMISSION POLICY

Any assignment submitted after 23:59 SK time on the specified date is deemed late (unless otherwise specified).

All due dates or timelines for assignment submission are published in the student course syllabus[1].

A late assignment may still be submitted up to three consecutive calendar days (72 hours) from the original deadline for that assessment. The assignment must be submitted to the appropriate year Administrative Coordinator in Saskatoon, or the Educational Consultant in Regina for years 1-2. Years 3-4 must submit to the Rotation Coordinator. The student, if submitting a late assignment that is deemed to be at or above the pass mark for that assignment will receive the pass mark for the assignment. If it is assessed as below the pass mark, the student will receive the actual grade assigned for the assignment.

[1] Blackboard routinely updates their systems on certain Wednesday evenings. In the event that Blackboard is down for scheduled maintenance or due to technical difficulties, assignments are to be submitted by 0900 the following morning.

Any late assignments not submitted by 23:59 on the third day will receive a mark of 0%. After this period, all mandatory assignments must still be submitted, or the student will be deemed to be missing a course component, which will result in an incomplete course. Subsequent academic consequences will be determined at the promotions committee meetings.

In addition to the consequences specified herein, students submitting mandatory assignments late should anticipate a meeting to discuss professionalism, which may result in associated documentation.

All requests for a deferral of an assignment due date must be received a minimum of 72 hours prior to the deadline. All such requests must be sent to the Course Director or Rotation Coordinator and copied to the relevant Administrative Coordinator. The course director, in consultation with the year chair and appropriate course/module/rotation director will make a final decision and notify the student of the outcome. Exceptional, unforeseen circumstances will be considered on an individual basis as above.

EXAM REVIEW PROCESS

The College understands the pedagogical value of a post exam review and feels that these are best handled by the Course Director(s)/Instructor(s) who can clarify concepts rather than students just viewing the "right" answer. Time has been built into the curriculum for the post exam reviews. **Please Note:** Students will not be allowed to see their individual exam during these sessions nor are they eligible to view their exam unless they were unsuccessful in achieving the minimum mark of 70%. In the event of a specific module or exam failure, a student may request to review their assessment by contacting the appropriate Module Director, Course Director or Course Chair.

CITATION FORMAT

Unless otherwise specified by the course or module director, the expected citation format is that of the International Committee of Medical Journal Editors (ICMJE). Examples of this citation format are available at www.nlm.nih.gov/bsd/uniform_requirements.html

RECORDING OF THE LECTURES

Most lectures will be recorded and posted to the course Blackboard site under Course Materials. However, each lecturer reserves the right to choose whether or not their lectures will be recorded. Lecture recordings are not intended to be a replacement for attending the session but to enhance understanding of the concepts.

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, unless materials are designated as open education resources. 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.

INTEGRITY DEFINED (FROM THE OFFICE OF THE UNIVERSITY SECRETARY)

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 (www.usask.ca/secretariat/student-conduct-appeals/StudentAcademicMisconduct.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (www.usask.ca/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at:

www.usask.ca/secretariat/student-conduct-appeals/forms/IntegrityDefined.pdf

EXAMINATIONS WITH 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 the Student Affairs Coordinator at the Office of Student Affairs (OSA) 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.

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

Students must arrange such accommodations through the Office of Student Affairs (OSA) by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

STUDENT SUPPORTS

College of Medicine, Office of Student Affairs

Student Affairs offers confidential support and advocacy at arm's length from the academic offices. For more information please contact:

CoM Student Affairs Coordinator (Saskatoon): Edith Conacher edith.conacher@usask.ca (306) 966-4751

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 http://library.usask.ca/studentlearning/.

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.

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.

As we gather here today, we acknowledge we are 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. We recognize that in the course of your studies you will spend time learning in other traditional territories and Métis homelands. We wish you safe, productive and respectful encounters in these places.