

Course Syllabus

Course title: Introduction to Sonography Scanning Skills Class section: MIDS - 121 - BX01A Term: 2025S Course credits: 3 Total hours: 105 Delivery method: Blended

Territorial acknowledgment

Camosun College respectfully acknowledges that our campuses are situated on the territories of the Ləkwəŋən (Songhees and Kosapsum) and WSÁNEĆ peoples. We honour their knowledge and welcome to all students who seek education here.

Instructional hours

Lab hours: 6 per W

DE Hours: 1 per W

W = Week T = Term

Instructor details

Name: Bridget Mavety Email: MavetyB@camosun.ca

Name: Breanna Delgaty Email: delgatyb@camosun.ca

Course description

Course Description:

Students learn how to safely operate ultrasound systems and begin to develop foundational scanning skills by practicing techniques on each other. Under the direct supervision of instructors, students begin to form habits resulting in the manual dexterity and workplace behaviours required for Diagnostic Medical Sonography. Students will practice the correct operation and maintenance of equipment during this hands-on approach to learning in authentic outpatient clinic and critical care environments.

Prerequisites:

One of:

- B in English 12
- B in Camosun Alternative

And one of:

- B in Anatomy and Physiology 12
- B in Camosun Alternative

Or one of:

- B in BIOL 143
- B in BIOL 150
- B in BIOL 152 and BIOL 153
- B in PNUR 101

Pre or Co-requisites:

All of:

- C+ in AHLT 266
- C+ in MIDS 127

Learning outcomes

Upon successful completion of this course a student will be able to:

- 1. Demonstrate the ability to correctly initiate ultrasound examinations by selecting the appropriate exam types, transducers and worklist entries while scanning simulated patients or laboratory partners.
- 2. Demonstrate knowledge of correct daily use and procedures for cleaning, re-processing, transporting, and storing transducers and equipment used during laboratory practice by maintaining sanitary workspaces.
- 3. Demonstrate the ability to operate ultrasound equipment by using basic scanner controls and anatomic knowledge to select optimal acoustic windows and harmonics, ergonomically orient and manipulate transducers, and record pertinent data while scanning simulated patients or laboratory partners.
- 4. Apply and convey basic knowledge of anatomy, scientific principles, patient considerations, communication skills, and professional behaviours of a student Diagnostic Medical Sonographer under the direct supervision of instructors.
- 5. Successfully perform ultrasound examinations of required abdominal structures within the recommended Sonography Canada guidelines for scheduling and time allotments while scanning simulated patients or laboratory partners.

Competency mapping

Sonography Canada Competencies:

Note: All general competencies below are demonstrated and assessed on all Skills Assessments

1.1e Explain examination procedure to patient.

1.1f Question patient to obtain relevant information regarding history and condition.

1.1g Communicate departmental reporting procedures to patient.

1.2a Verify written, authorized directions for examination.

1.2b Record accurate and relevant medical history.

1.2c Record examination procedures and results.

1.2d Ensure that documentation is timely, accurate, concise and complete.

1.2e Write medical terminology and standard abbreviations.

2.1c Adhere to institutional policies and procedures.

2.1e Maintain patient privacy and confidentiality.

2.1f Ensure informed patient consent.

2.2a Verify patient's identification.

2.2b Verify requested procedure correlates with patient's clinical history and presentation, and address concerns as appropriate.

2.2c Evaluate patient preparation for requested examination.

2.2d Practice within limits of personal knowledge, skill and judgement.

2.2e Ask for guidance where appropriate.

2.2f Evaluate for contraindications to procedure and address as appropriate.

2.2g Identify and respond to exceptions from established protocols and procedures.

2.2h Identify and respond to urgent sonographic findings.

2.2i Accept responsibility for decisions and actions.

2.3a Maintain professional appearance and manner.

2.3f Provide and receive feedback in a professional manner.

2.3g Manage time and workload efficiently.

2.3h Demonstrate reliability.

2.3i Demonstrate adaptability.

3.1h Perform examination in a timely manner.

4.1b Determine and select correct pre-set values.

4.1c Input patient data.

- 4.2a Orient and manipulate transducer.
- 4.2f Record patient position and plane of section on images, as required.
- 5.1a Interpret history, signs & symptoms and other relevant information.
- 5.1b Assess medical history and health status.
- 5.1c Modify scope of examination based on clinical history.
- 5.1d Formulate sonographic scanning strategies.
- 5.1e Integrate knowledge of anatomy and disease processes.
- 5.3a Select optimal acoustic window.
- 5.3b Optimize patient position.
- 5.3c Employ breathing techniques.
- 5.3d Interrogate anatomy in required planes of section.
- 5.3e Evaluate images for orientation, identification, and labeling.
- 5.3f Evaluate images for quality.
- 5.3g Recognize sonographic appearance of normal structures.

5.3j Recognize and investigate abnormal findings.

5.3k Modify examination based on sonographic evidence, clinical information, resource implications and other contextual factors.

5.3I Ensure all applicable components of examination are complete.

- 5.3m Recognize equipment limitations.
- 5.3n Recognize technical limitations.
- 5.4a Produce diagnostic data documenting sonographic findings.
- 5.4b Formulate impression based on findings.

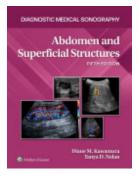
- 5.4d Use spatial reasoning to interpret images.
- 5.4e Identify and prioritize differential findings.
- 5.4f Document limitations to exam quality and completeness.
- 6.1a Maintain clean and orderly work area.
- 6.2b Practice ergonomic techniques.
- 6.2c Engage in practices to promote own physical and environmental safety.

Appendix B: Abdomen

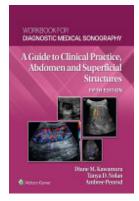
- 1 Abdominal aorta
- 3 Adrenal Glands
- 4 Celiac trunk
- 6 Common iliac arteries
- 7 Common iliac veins
- 8 Inferior vena cava
- 9 Liver
- 10 Pancreas
- 11 Peritoneal, retroperitoneal cavities / spaces
- 12 Spleen
- 13 Splenic vein
- 14 Superior mesenteric artery
- 15 Gallbladder
- 16 Common hepatic duct
- 17 Common bile duct
- 18 Cystic duct
- 19 Intrahepatic ducts

- 20 Appendix
- 21 Small bowel
- 22 Large bowel
- 23 Stomach
- 24 Kidneys
- 27 Ureters
- 28 Urinary bladder

Course reading materials



Title: Abdomen and Superficial Structures Authors: Tanya Nolan, Diane Kawamura Publisher: Lippincott Williams & Wilkins Publication Date: 2022-09-30 Edition: 5th Required/Optional: Required



Title: Workbook for Diagonstic Medical Sonography: Abdominal and Superficial Structures Authors: Diane Kawamura, Tanya Nolan Publisher: Lippincott Williams & Wilkins Publication Date: 2022-08-30 Edition: 5th Required/Optional: Required

Course schedule

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

WEEK	DATE	LESSON	LEARNING OUTCOMES	LEARNING OBJECTIVES	SONOGRAPHY CANADA COMPETENCY
1	Tues. May 06	Lesson 1: Introduction to course Review course outline Lab orientation, policies Maintaining a clean/ orderly work area Infection prevention and control in the lab setting	2	1.0-1.2	2.1c, 2.3a, 6.1a
	Thurs. May 08	Lesson 2: • Ergonomics for Sonography • Patient Simulation Lab: communication (pre, during and post exam) and patient-based scenarios • Writing ultrasound reports		2.0-2.13	1.1e, 1.1f, 1.1g, 1.2a, 1.2b, 2.2a, 2.2b, 2.2c, 2.2d, 2.2e, 2.2f, 2.2i,6.2b, 6.2c
2	Tues. May 13 Thurs. May 15	Lesson 3: • Knobology • Abdominal Vasculature Ergonomics Virtual Simulation due Sunday May 18 th at midnight	1-5	3.0-3.4	Appendix B: 1,4, 6, 8, 14
	Tues. May 20	Abdominal Vasculature			
3	Thurs. May 22	Lesson 4: Mock Skills Assessment 1: Aorta, Inferior Vena Cava, CAX, SMA & Iliac Arteries	1-5	4.0-4.41	2.1c, 2.2d, 2.2e, 2.2f, 2.2g, 2.2h, 2.2i, 2.3g, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.2f, 5.1d, 5.1e, 5.3a, 5.3b, 5.3c, 5.3d, 5.3e, 5.3f, 5.3g, 5.3i, 5.3i, 5.3k, 5.3i, 5.3m, 5.3n, 5.4a, 5.4d, 6.1a, 6.2b, 6.2c Appendix B: 1,4, 6, 8, 14
4	Tues. May 27	Lesson 5: Skills Assessment 1: Aorta, Inferior Vena Cava, CAX, SMA & Iliac Arteries	1-5	5.0-5.60	1.1e, 1.1f, 1.1g, 1.2a, 1.2b, 1.2c, 1.2d, 1.2e, 2.1c, 2.1e, 2.1f, 2.2a, 2.2b, 2.2c, 2.2d, 2.2e, 2.2f, 2.2g, 2.2d, 2.2d, 2.3d, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.2f, 5.1a, 5.1b, 5.1c, 5.1d, 5.1e, 5.3a, 5.3b, 5.3c, 5.3d, 5.3d, 5.3f, 5.3g, 5.3j, 5.3k, 5.3l, 5.3m, 5.3n, 5.4a, 5.4b, 5.4d, 5.4e, 5.4f, 6.1a, 6.2b, 6.2c Appendix B: 1,4, 6, 8, 14
	Thurs. May 29	Lesson 6: • Liver			
5	Tues. June 03 Thurs. June 05	• Liver	1-5	6.0-6.1	Appendix B: 9, 19

6	Tues. June 10 Thurs. June 12	Lesson 7: • Biliary System	1-5	7.0-7.3	Appendix B: 15, 16, 17, 18
	Tues. June 17	Lesson 8: • Mock Skills Assessment: Liver & Biliary	1-5	8.0-8.42	2.1c, 2.2d, 2.2e, 2.2f, 2.2g, 2.2h, 2.2i, 2.3a, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.2f, 5.1d, 5.1e, 5.3a, 5.3b, 5.3c, 5.3d, 5.3e, 5.3f, 5.3g, 5.3b, 5.3i, 5.3i, 5.3i, 5.3n, 5.3n, 5.4a, 5.4d, 6.1a, 6.2b, 6.2c Appendix B: 9, 15, 16, 17, 18, 19
7	Thurs. June 19	Lesson 9: Skills Assessment 2: Liver & Biliary	1-5	9.0-9.61	1.1e, 1.1f, 1.1g, 1.2a, 1.2b, 1.2c, 1.2d, 1.2e, 2.1c, 2.1e, 2.1f, 2.2a, 2.2b, 2.2c, 2.2d, 2.2e, 2.2f, 2.2g, 2.2h, 2.2i, 2.3a, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.2f, 5.1a, 5.1b, 5.1c, 5.1d, 5.1e, 5.3a, 5.3b, 5.3c, 5.3d, 5.3e, 5.3f, 5.3g, 5.3i, 5.3j, 5.3k, 5.3l, 5.3m, 5.3n, 5.4g, 5.4b, 5.4d, 5.4e, 5.4f, 6.1a, 6.2b, 6.2c Appendix B: 9, 15, 16, 17, 18, 19
	Tues. June 24	Lesson 10: • Pancreas	1-5	10.0-10.1	Appendix B: 10, 13
8	Thurs. June 26	Lesson 11: • Spleen	1-5	11.0-11.1	Appendix B: 12, 13
	Tues. July 01		HOLID	AY	
9		Lesson 12: Mock Skills Assessment 3: Pancreas & Spleen	HOLIC 1-5	12.0-12.39	2.1c, 2.2d, 2.2e, 2.2f, 2.2g, 2.2h, 2.2i, 2.3g, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2q, 4.2f, 5.1d, 5.1s, 5.3a, 5.3b, 5.3c, 5.3d, 5.3e, 5.3f, 5.3g, 5.3f, 5.3g, 5.3i, 5.3k, 5.3l, 5.3m, 5.5h, 5.4q, 5.4d, 6.1a, 6.2b, 6.2c Appendix B: 10, 12, 13
9	01 Thurs. July	Mock Skills Assessment 3:			2.3a, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.2f, 5.1d, 5.1e, 5.3a, 5.3b, 5.3c, 5.3d, 5.3e, 5.3f, 5.3g, 5.3i, 5.3j, 5.3k, 5.3l, 5.3m, 5.3n, 5.4a, 5.4d, 6.1a, 6.2b, 6.2c
	01 Thurs. July 03 Tues. July	Mock Skills Assessment 3: Pancreas & Spleen Lesson 13: Skills Assessment 3: Pancreas	1-5	12.0-12.39	2.3a, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.2f, 5.1d, 5.1e, 5.3a, 5.3b, 5.3e, 5.3d, 5.3e, 5.3f, 5.3g, 5.3l, 5.3i, 5.3k, 5.3l, 5.3m, 5.3n, 5.4a, 5.4d, 6.1a, 6.2b, 6.2c Appendix B: 10, 12, 13 1.1e, 1.1f, 1.1g, 1.2a, 1.2b, 1.2c, 1.2d, 1.2e, 2.1c, 2.1e, 2.1f, 2.2a, 2.2b, 2.2c, 2.2d, 2.2e, 2.2f, 2.2g, 2.2d, 2.2d, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.2f, 5.1a, 5.1b, 5.1e, 5.1e, 5.1e, 5.3a, 5.3b, 5.3e, 5.3d, 5.3e, 5.3f, 5.3g, 5.3i, 5.3i, 5.3k, 5.3l, 5.3m, 5.4a, 5.4b, 5.4d, 5.4e, 5.4f, 6.1a, 6.2b, 6.2c

11	Thurs July 17	Lesson 15: • Lower Urinary System (Bladder & Ureters) Lesson 16: • Adrenal Glands	1-5	15.0-15.1, 16.0	Appendix B: 3, 24, 27, 28
	Tues. July 22	Lesson 17: Mock Skills Assessment 4: Kidneys	1-5	17.0-17.37	2.1c, 2.2d, 2.2e, 2.2f, 2.2g, 2.2h, 2.2i, 2.3g, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2c, 4.2f, 5.1d, 5.1e, 5.3g, 5.3i, 5.3c, 5.3d, 5.3e, 5.3f, 5.3g, 5.3i, 5.3j, 5.3k, 5.3l, 5.3m, 5.3n, 5.4a, 5.4d, 6.1a, 6.2b, 6.2c
12	Thurs. July 24	Lesson 18: Skills Assessment 4: Kidneys	1-5	18.0-18.56	Appendix 8: 24 1.1e, 1.1f, 1.1g, 1.2a, 1.2b, 1.2c, 1.2d, 1.2e, 2.1c, 2.1e, 2.1f, 2.2a, 2.2b, 2.2c, 2.3d, 2.2e, 2.3f, 2.3g, 2.2h, 2.2l, 2.3a, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.2f, 5.1a, 5.1b, 5.1c, 5.1d, 5.1e, 5.3a, 5.3b, 5.3c, 5.3d, 5.3e, 5.3f, 5.3g, 5.3i, 5.3j, 5.3k, 5.3h, 5.3h, 5.3h, 5.4b, 5.4d, 5.4e, 5.4f, 6.1a, 6.2b, 6.2c Appendix B: 24
	Tues. July 29	Lesson 19: • GI Tract, Appendix	1-5	19.0-19.3	Appendix B: 20, 21, 22, 23
13	Thurs. July 31	Lesson 20: • Potential Spaces • Retroperitoneum & Peritoneum Lab Assignment (Due Friday August 01 8:00AM)	1-5	24.0	Appendix B: 11
	Tues. Aug. 05	Lesson 21: Mock Final Skills Assessment: Full Abdominal Assessment	1-5	21.0-21.51	2.1c, 2.2d, 2.2e, 2.2f, 2.2g, 2.2h, 2.2i, 2.3a, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.4f, 5.1d, 5.1e, 5.3a, 5.3b, 5.3c, 5.3d, 5.3e, 5.3f, 5.3g, 5.3i, 5.3j, 5.3k, 5.3i, 5.3m, 5.4n, 5.4d, 6.1a, 6.2b, 6.2c Appendix B: 1, 4, 6, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 24
14	Thurs. Aug 07	Lesson 22: Final Skills Assessment: Full Abdominal Assessment	1-5	22.0-22.70	1.1e, 1.1f, 1.1g, 1.2a, 1.2b, 1.2c, 1.2d, 1.2e, 1.1f, 1.1g, 1.2a, 1.2b, 1.2c, 1.2d, 1.2e, 2.1c, 2.1e, 2.1f, 2.2a, 2.2b, 2.2c, 2.2d, 2.2e, 2.2f, 2.2g, 2.2h, 2.2j, 2.3a, 2.3f, 2.3g, 2.3h, 2.3i, 3.1h, 4.1b, 4.1c, 4.2a, 4.2f, 5.1a, 5.1b, 5.1c, 5.1d, 5.1e, 5.3a, 5.3b, 5.3c, 5.3d, 5.3e, 5.3f, 5.3g, 5.3i, 5.3j, 5.3k, 5.3i, 5.3m, 5.3n, 5.4a, 5.4b, 5.4d, 5.4e, 5.4f, 6.1a, 6.2b, 6.2c Appendix B: 1, 4, 6, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 24
15		EXAM WEEK – N/A			

Assessment and evaluation

Туре	Description	Weight
Assignment	Ergonomics Virtual Simulation	5
Practical Assessment	Skills Assessments (4 at 12% each)	48
Assignment	Lab Assignment	12

Туре	Description	Weight
Practical Assessment	Final Skills Assessment	35

Course guidelines and expectations

Program Handbook

Refer to the <u>Diagnostic Medical Sonography (SONO) Program Handbook</u> for classroom and lab etiquette as well as professional behaviour expectations (create a link whenever possible)

Skills Assessments

Students must pass all Critical Criteria in the Professional Performance section, and achieve at least 65% on the Interrogation and Image Quality section and sub-sections of each Skills Assessment

Final Skills Assessments are not eligible for repeat assessment.

Late Policy

All assignments are to be completed and submitted by the due date. Assignments that are not submitted by the due date will receive a grade of zero (0) and the assignment will not be marked. Note: this also includes the submission of any documents requiring submission relating to skills assessments.

Use of Artificial Intelligence (AI)

To achieve the program learning outcomes and course learning objectives, the use of generated artificial intelligence (AI) tools is prohibited unless explicitly stated on the course syllabus. If AI tools are used when not permitted, this would be a violation of Camosun College's Academic Integrity Policy and students may be subject to sanctions as per the policy.

Final Examination & Final Grade

Do not book travel or flights until the final examination schedule has been published by the registrar.

Students must achieve a minimum of 65% for their final grade to pass the course and to use this course as a pre or co-requisite.

College policies and student responsibilities

The college expects students to be responsible, respectful members of the college community. Responsible students meet expectations about attendance, assignments, deadlines, and appointments. They become familiar with academic policies and regulations, and their rights and responsibilities.

College polices are available online at the <u>Policies and Directives</u> page. Academic regulations are detailed on the <u>Academic Policies and Procedures for Students</u> page.

Policies all students should be familiar with include the <u>Academic Integrity Policy</u>. This policy expects students to be honest and ethical in all aspects of their studies. It defines plagiarism, cheating, and other forms of academic dishonesty. Infractions of this policy can result in loss of marks or a failing grade. To learn more about plagiarism and cheating, including the use of artificial intelligence, review the <u>Academic Integrity Guide</u>.

The <u>Academic Accommodations for Students with Disabilities Policy</u> defines how Camosun provides appropriate and reasonable academic accommodations. The Centre for Accessible Learning (CAL) coordinates academic accommodations. Students requiring academic accommodations should request and arrange accommodations through CAL. Contact CAL at least one month before classes start to ensure accommodations can be put in place in time. Accommodations for quizzes, tests, and exams must follow CAL's booking procedures and deadlines. More information is available on the <u>CAL website</u>.

Students must meet the grading and promotion standards to progress academically. More information is available in the <u>Grading Policy</u>.

The college uses two grading systems. A course will either use the standard letter grade system (A+ to F) or a competency-based approach with grades of complete, completed with distinction or not completed. Visit the <u>Grades/GPA page</u> for more information.

Students must meet the college's academic progress standards to continue their studies. A student is not meeting the standards of progress when a GPA falls below 2.0. The college offers academic supports for students at risk of not progressing. The <u>Academic Progress Policy</u> provides more details.

If you have a concern about a grade, contact your instructor as soon as possible. The process to request a review of grades is outlined in the <u>Grade Review and Appeals Policy</u>.

The <u>Course Withdrawals Policy</u> outlines the college's requirements for withdrawing from a course. Consult the <u>current schedule</u> of deadlines for fees, course drop dates, and tuition refunds.

If students experience a serious health or personal issue, they may be eligible for a <u>medical or</u> <u>compassionate withdrawal</u>. The <u>Medical/Compassionate Withdrawal Request Form</u> outlines what is required.

The <u>Acceptable Technology Use</u> policy ensures the use of the college network and computers contribute to a safe learning environment. This policy also applies to the use of personal devices with the college network.

Students experiencing sexual violence can get support from the Office of Student Support. This Office of Student support is a safe and private place to discuss supports and options. More information is available on the <u>sexual violence support and education site</u>. Students can email oss@camosun.ca or phone 250-370-3046 or 250-370-3841.

The <u>Student Misconduct Policy</u> outlines the college's expectations of conduct. Students should behave to contribute to a positive, supportive, and safe learning environment.

The <u>Ombudsperson</u> provides an impartial, independent service to help students understand college policies.

Services for students

Successful students seek help and access college services. These services are recommended to make the most of your time at college.

Services for Academic Success

- <u>Career Lab</u>: Connects students with work-integrated learning experiences, including co-op placements and career fairs.
- English, Math, and Science Help Centres: Get one-on-one help with homework.
- <u>Library</u>: Get help with research, borrow materials, and access e-journals and e-books. Libraries at both campuses provide computers, individual and group study spaces.
- <u>Makerspace</u>: A place to innovate, collaborate, and learn new skills and technology in a fun, dynamic, inclusive environment.
- <u>Writing Centre & Learning Skills</u>: Get assistance with academic writing or meet with a learning skills specialist for help with time management, preparing for exams, and study skills.

Enrolment, Registration, and Records

- Academic Advising: Talk to an academic advisor for help with program planning.
- <u>Financial Aid and Awards</u>: Learn about student loans, bursaries, awards, and scholarships.
- <u>Registration</u>: Get information about Camosun systems, including myCamosun, and college policies and procedures.
- <u>Student Records</u>: Get verification of enrolment to access funding, request a transcript, or credential.

Wellness and Cultural Supports

- <u>Counselling</u>: It's normal to feel overwhelmed or unsure of how to deal with life's challenges. The college's team of professional counsellors are available to support you to stay healthy.
 Counselling is free and available on both campuses. If you need urgent support after-hours, contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.
- <u>Centre for Indigenous Education and Community Connections</u>: Provides cultural and academic supports for Indigenous students.
- <u>Camosun International</u>: Provides cultural and academic supports for international students.
- <u>Fitness and Recreation</u>: Free fitness centres are located at both campuses.

For a complete list of college services, see the <u>Student Services</u> page.

Changes to this syllabus

Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change the course content or schedule. When changes are necessary the instructor will give clear and timely notice.