



MASTER COURSE OUTLINE

A. DMSG 1412 Clinical Ultrasound Lab II

B. COURSE DESCRIPTION:

Practical training in a simulated clinical laboratory will focus on completing and becoming proficient in scanning of the human body. Emphasis will be placed on instrumentation, protocol, record findings along with associated calculations, and anatomy identification of the abdomen, thyroid, pelvis, obstetrics, breast, and vascular systems.

Prerequisite(s): DMSG1401, DMSG1402, DMSG1404, DMSG1405, DMSG1406.

(4 Cr – 0 lect, 4 lab)

C. *Core Theme: Critical Thinking

D. RIVERLAND INSTITUTIONAL LEARNING OUTCOMES:

This course addresses the following Riverland Institutional Learning Outcome(s):

- ☒ ILO 1: critical thinking (*Core Theme Goal 2*)
- ☐ ILO 2: awareness of the larger global community (*Core Theme Goal 7 or 8*)
- ☐ ILO 3: ethical, engaged citizenship (*Core Theme Goal 9 or Goal 10*)
- ☐ ILO 4: communication and collaboration (*Discipline Goal 1 and by any learning outcome(s) involving communication or collaboration*)

E. MAJOR CONTENT AREAS:

- Abdominal scanning
- Thyroid scanning
- Abdominal Doppler
- Female pelvis
- Female breast
- Obstetrics 1st trimester scanning
- Obstetrics 2nd & 3rd trimester scanning
- Simulation
- Carotid scanning
- Venous scanning
- Pleural spaces

F. GOAL TYPE, OBJECTIVES, AND OUTCOMES:

<u>GOAL TYPE</u>	<u>OBJECTIVES</u>	<u>OUTCOMES</u>
<u>*Critical Thinking</u>	Students will be able to analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.	The student will successfully differentiate between normal and abnormal ultrasound anatomy through simulation scanning exercises.
<u>CS</u>	- demonstrate correct patient preparation, transducer selection, and scanning techniques for abdominal, thyroid, pelvic, OB/GYN, breast, and vascular exams. - apply standardized protocols to obtain required image sets for each organ system. - optimize imaging parameters (depth, gain, TGC, Doppler settings) to produce diagnostic-quality images. - document anatomical structures and scanning planes according to established protocol requirements. - assess images for completeness, clarity, and adherence to clinical guidelines.	perform abdominal, thyroid, pelvic, obstetrics, gynecology, breast, and vascular ultrasound scans following set protocols.
<u>CS</u>	- gather relevant patient history through interview, chart review, and clinical observation. - record accurate sonographic measurements using proper anatomical landmarks. - compose concise and professional sonographer comments describing technical findings. - summarize pertinent clinical and sonographic information in a structured report format. - verify that all report entries meet clinical documentation standards and institutional policies.	generate patient history, measurements, and comments on a sonographer report.
<u>CS</u>	- select appropriate Doppler settings (angle correction, PRF, wall filter, sample volume) for vascular imaging. - acquire spectral waveforms from major peripheral and cerebrovascular vessels. - differentiate normal versus abnormal Doppler flow patterns during acquisition. - optimize waveform quality by adjusting technical parameters in real time. - document waveforms according to vascular laboratory protocols.	produce Doppler spectral waveform images of the vascular systems.

<u>CS</u>	• locate pleural spaces using correct scanning windows and patient positioning. • describe the normal sonographic appearance of pleural structures. • differentiate pleural spaces from adjacent thoracic and upper abdominal structures. • recognize normal versus abnormal fluid or artifacts within the pleural space. • label pleural anatomy accurately on sonographic images.	1. identify the pleural spaces sonographically.
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G. SPECIAL INFORMATION:

This course may require use of the Internet, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact Accessibility Services at the beginning of the semester. This information will be made available in alternative format, such as Braille, large print, or current media, upon request.

H. COURSE CODING INFORMATION:

Course Code X/Class Maximum 20; Letter Grade

Revision date:

AASC Approval date: 05/12/26

*These five MnTC Goals have been identified as Riverland Community College Core Themes. Every course in the Riverland Community College curriculum shall meet outcomes from one of these themes.

**These five MnTC Goals have been identified as Riverland Community College Disciplines. Riverland's MnTC courses also shall meet outcomes from a Discipline Area.

NOTE: The Minnesota Transfer Curriculum "10 Goal Areas of Emphasis" are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.

*Riverland Community College Core Themes	MnTC Goal Number
Critical Thinking (CT)	2
Human Diversity (HD)	7A, 7B, 7A/B
Global Perspective (GP)	8
Ethical and Civic Responsibility (EC)	9
People and the Environment (PE)	10

**Riverland Community College Discipline Areas	MnTC Goal Number
Communication (CM)	1
Natural Sciences (NS)	3
Mathematics/Logical Reasoning (MA)	4
History and the Social & Behavioral Sciences (SS)	5
Humanities and Fine Arts (HU)	6

Riverland