



# NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY

## Diagnostic Medical Sonography Refresher Program General Information

### Course Descriptions and Prerequisites

The student may choose one of two possible routes (A or B) depending on qualifications.

#### A. DMS Refresher Program (All Didactic Courses plus Experiential Upgrading)

- The DMS Refresher Program has been designed as a method for graduates of accredited Canadian sonography schools to review the principles and concepts currently in practice in diagnostic medical sonography.
- The potential candidate must also be currently registered with ARDMS or CARDUP (other equivalencies may be considered on an individual basis).

##### 1. Experiential Upgrading

- You may have the option of hands on experiential upgrading in an ultrasound department of a participating hospital or clinic.
- The pertinent didactic course must be successfully completed to progress to the experiential upgrading (clinical portion).
- NAIT will work with you to find a suitable clinical placement. If your intent is to obtain clinical experience, it is **highly recommended** that you secure a clinical placement prior to taking the didactic courses. **NAIT cannot guarantee clinical placement.**
- Experiential upgrading will aid in your preparation to challenge the CARDUP CSAT to earn your CARDUP credentials.
- Students must comply with the clinical site's protocol and procedures, and those who do not comply may be terminated from the program.

#### B. DMS Refresher Courses

- Designed for individuals who would like to enroll in specific courses for professional development or Continuing Medical Education credits.
- You must be ARDMS or CARDUP certified.
- These courses are **NOT** intended as entry level courses for individuals who have not entered the profession. These courses are **NOT** designed to prepare a student to write ARDMS or CARDUP examinations.
- If you have been out of the ultrasound profession for 8 or more years, it is strongly suggested that Physics and Instrumentation (DSR 103) is taken in addition to any specialty course; however this course may be taken at anytime if you wish to refresh your knowledge.

The didactic courses will be delivered entirely online, using WebCT as the learning management system. The courses have been developed to review examinable competencies in the CARDUP national competency profile for diagnostic medical sonography. ***As this is a review course, essential competencies will be covered assuming fundamental ultrasound knowledge and principles.***

Please refer to the NAIT website for more information at [www.nait.ca/dmsrefresher](http://www.nait.ca/dmsrefresher).

### **Registration process for the DMS Refresher Program**

1. Submit documents for review (active ARDMS or CARDUP certification and transcripts from your Canadian sonography school.)
2. Complete and submit School of Professional and Continuing Education Registration Form
3. Complete and submit Exam Invigilator Consent Form (for each course). Please refer to the document "**Exam Invigilator Consent Form**" for the details of this aspect of the registration process.
4. If you wish to challenge the CARDUP CSAT, the CSAT manual must be applied for through CARDUP and submitted to NAIT **2 months prior to the completion of the experiential upgrading**. Application fees may be required.

### **Registration process for the DMS Refresher Courses**

1. Submit documents for review by program coordinator (active ARDMS or CARDUP certification.)
2. Complete and submit School of Professional and Continuing Education Registration Form
3. Complete and submit Exam Invigilator Consent Form (for each course). Please refer to the document "**Exam Invigilator Consent Form**" for the details of this aspect of the registration process.

For more information, please contact NAIT Continuing Education at:

NAIT Continuing Education  
Room W-111, 11762-106 Street  
Edmonton, AB T5G 2R1

Tel: 780-378-5034

Fax: 780-471-8993

Email: [sonography@nait.ca](mailto:sonography@nait.ca)

## Courses in the DMS Refresher

All didactic courses are delivered online and consequently offer a great deal of flexibility for course completion. The students may progress through the courses at their own pace, but must be completed within the scheduled time frame. Successful completion of the didactic course will entitle you to continuing medical education (CME) credit hours.

The courses, tuition and CME credits available in the DMS Refresher include:

<b>Name</b>	<b>Course Number</b>	<b>Hours</b>	<b>Fee</b>	<b># Weeks to complete</b>	<b>CME Credits</b>
Abdomen and Superficial Structures	DSR 101	32	\$600.00	10	32
Obstetrics and Gynecology	DSR 102	32	\$600.00	10	32
Physics and Instrumentation	DSR 103	16	\$300.00	5	16
Adult Echocardiography	DSR 104	48	\$750.00	15	48
Vascular Technology	DSR 105	32	\$600.00	10	32
Experiential Upgrading	DSR 106	Up to 3 months with potential extension if needed	To be determined		none

In preparation for enrollment in the program, some textbooks may be required. Please refer to the section entitled "Required Textbooks for DMS Refresher Courses". These books may be purchased through The NAIT Bookstore (phone: 780-471-7717). Alternatively, you may purchase the books from another source.

The student must recognize that the curriculum has been developed on the basic premise that for every 1 hour of course time a student will spend 2 – 3 hours of additional time completing activities, researching, reading resources, studying for the exam, etc. Depending on the individual's retention of knowledge from previous education and experience, some concepts will require very little review and others may be far less familiar. In this latter case, the learner will require more time to achieve the objectives of the course.

## Format for DMS Refresher Courses

Each review course consists of:

1. **Course Outline:** The course outline provides an overview of the course, including the learning outcome(s) and objectives, the student evaluation, required resources and student responsibilities.
2. **Required Supporting Materials:** This includes the required textbooks and any websites containing required information.
3. **Rationale:** This describes the reason the course is important to the study of sonography.
4. **Learning Outcome Statement and Summary of Objectives:** This provides the learner with the expected outcome and the objectives to direct the learner to achieve the outcome.
5. **Connection Activity:** The connection activity helps the learner to connect and relate the curricula to previous experiences, situations or questions.
6. **Objectives:** For each objective, to assist the student with achieving the required learning, the student is presented with learning activities.
  - a. **Exploration Activity** – Information to read and study to learn the concepts.
  - b. **Experiential Activity** – Through questions, activities and/or interactive websites to help the student determine if they have achieved the objective. These activities should be completed without referring to the information in the Exploration Activity. This is a self-directed assessment and once the student has completed the activity, the student can assess their learning through the responses provided. The student should review all concepts that were not understood before progressing to the next objective. The student should review all of the information for the objective if less than 80% of the concepts were understood.
7. **Practical Application Activity:** The practical application activity includes some examples of how the student will apply their knowledge. For the experiential upgrading, a clinical manual will be completed as part of the assessment of the student's clinical skill.
8. **Examination:** Each didactic course has a final examination of the course content and will provide the mark for the course. The pass mark for the examination is 60%. Please note that the final examination is completed online, adhering to the information presented in the "Exam Invigilator Consent Form". This form must be returned one month prior to exam.
9. **Summary:** This provides the learner with a brief summary of the learning that has occurred upon successful completion of the course.
10. **Appendix of the Supporting Materials:** The list of references or websites provided enables the student to obtain further information or illustration or clarification for enhanced understanding.
11. **Appendix:** Any information the instructor of the course deems important for the student.

As all didactic courses are online, the student will have access to the instructor through the online environment. Tutorial support will be offered electronically through WebCT delivery. Virtual office hours will be indicated in the course. The instructor's contact information will be provided to the student once enrolled in the course.

## **Required Textbooks for DMS Refresher Courses**

The following list of books is the required and optional texts for the DMS Refresher Courses. Each course will specify the required text(s) for the course.

### **Abdomen and Superficial Structures – DSR 101**

Middleton, W.D., Kurtz, A.B. & Hertzberg, B.S.

**Ultrasound: The Requisites**, 2nd edition

Mosby, 2004, ISBN 978-0-323-01702-2

*(required)*

This text may also be a useful resource for DSR 102

### **Obstetrics and Gynecology – DSR 102**

1. Peter W. Callen

**Ultrasonography in Obstetrics and Gynecology**, 5<sup>th</sup> edition

Saunders, Elsevier, ISBN 97814160-3246-9

*(required)*

2. Suchet and Tam

**The Ultrasound of Life DVD**, 5<sup>th</sup> edition, 2006

*(required)*

### **Physics and Instrumentation – DSR 103**

No textbook required

### **Adult Echocardiography – DSR 104**

1. Catherine Otto

**Textbook of Clinical Echocardiography**, 3<sup>rd</sup> edition

Saunders, Elsevier, 2004, ISBN 0721607896

*(required)*

2. Terry Reynolds

**The Echocardiographer's Pocket Reference**, Latest edition

Arizona Heart Institute, ISBN 0963576798

*(optional)*

### **Vascular Sonography – DSR 105**

No textbook required

## **Receipts**

Income tax receipts are available online through the NAIT Student Portal website in February for the tax year in which the student has participated in the course/program.

## **Course Assessment**

An important facet of each course is the student's anonymous feedback of the course. This information will be used to make necessary corrections and continual improvement to each course. This will be completed electronically and all feedback is confidential and anonymous.

## **Acknowledgements**

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## **Disclaimer**

The material presented in these courses is based on textbooks, manuals, published articles and websites. Care was taken to acknowledge the source of the material. Any errors or omissions are not intended. The DMS refresher courses cannot guarantee all requirements necessary for ARDMS eligibility will be covered.