Sononerds
in the classroom

Unit 0: Welcome & How to Use this Workbook

Sononerds Ultrasound Physics Workbook & Lectures

Welcome!

Hi! My name is M. I am a registered sonographer (RDMS and RVT) and I have created Sononerds as landing spot for all the educational material I have and will be making! I teach at multiple colleges and have created many videos and workbooks for ultrasound. Due to its popularity, I have I have adapted this textbook and highly suggest it as the main supplement for my physics videos.

Understanding Ultrasound Physics by Sidney Edelman, PhD

The textbook does not cover all facets of ultrasound physics, so I have pulled information from multiple resources to create a comprehensive course of study that is summarized in this workbook. There are 3 helpful texts that I have used to round out this workbook. You can check them out by following the Amazon Link if you are interested. :

Examination Review for Ultrasound Physics by S. Penny & T. Fox

Ultrasound Physics and Instrumentation by Frank Miele

Sonography Principles and Instrumentation by Frederick Kremkau

This is NOT a review course, but a full course that is taught to DMS students. As of October 2021, quizzes and mock SPIs are not available, but will be! I suggest signing up to be notified of updates to content available.

Successful ultrasound physics students:

- Read their textbook & supplemental material
- Practice concepts to **understand** the concepts
- Use practice questions and quizzes to prepare for school exams and board tests including the SPI, CCI and ARRT

I have also created practice material in this workbook to better help you work through the concepts. A big mistake many students make is thinking they can just memorize everything. While memorizing some things will be necessary, it will be very difficult to memorize everything.

To help you, I have created practice “moments” to work on together during the lecture. After covering a concept, there will be an opportunity for you to practice using your new knowledge. The video lecture will contain the answers and show you how we arrived at those answers. Answers for the practice sections are ONLY IN THE VIDEO LECTURE.

There will also be more comprehensive activities at the end of the unit that will combine multiple concepts from the unit and previous units.

Practice exercises will include:

- Fill-in the blank
- Matching
- Drag and Drop
- Short Answer

The practice material is meant to be done within the online document. To be able to manipulate the practice material, you will need to copy the workbook into your own Google Drive. Once copied, you will want to be in “edit” mode (not in presentation mode).

To fill in a blank, simply click in the box and begin typing.

To drag and drop a piece, move the cursor over the item and it should turn into a 4 way arrow as you hover. When the 4 way arrow is present, click and without releasing move the object where you want it to go. It is easier to get the 4 way arrow to appear if you hover near the edge of the object and not over the words in the object.

To undo anything you moved:

PC Users: Push Ctrl + Z at the same time

Mac Users: Push Command + Z at the same time

Answers to unit activities will be be available by clicking the section title link. This is an example of what it will look like. Click on the underlined area.

Section # Activities ← Link to Answers

As mentioned, this workbook has an accompanying video lecture. The video lectures are found on YouTube. At the beginning of the workbook, you will see a link to the entire unit lecture, as well as the embedded video. Once you follow the link, there will be timestamps or "chapters" in the YouTube video that match the section headings if you want to go directly to a section. This way, you have the option to review shorter sections or watch the lecture in its entirety. The only embedded video will be at the beginning of the unit.

This workbook should serve as comprehensive notes for the lectures. You will see more demonstrations, animations and hints/tips within the videos. Anything found in a **chart, bolded or preceded by a → will be important information to know.** However all material is fair game for quizzes/boards.

Lastly, at the end of the unit, I have included a "Nerd Check." These are open ended study guide questions. By going through these questions, you will be able to assess your preparedness for the unit quizzes. I highly suggest that you ALSO go through the multiple choice questions that are found in all the suggested textbooks or seek out other mock material. Three popular mock exam choices are: ESP's X-zone, Ultrasound Registry Review and Davies.

Please reach out if you have any questions regarding content or technical.

-M.

I have decided to make this content FREE for the time being, but if you have found it helpful and want to donate to help cover the cost of time and software -please click on either link below!

https://paypal.me/sononerds?locale.x=en_US

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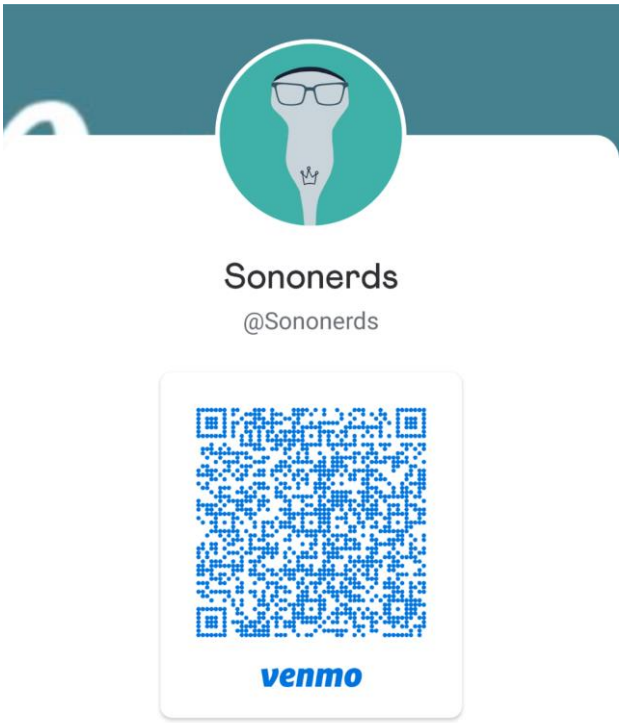

Section 0.1 Sample Link to Timestamp!

Sample Video Link for Full Lecture

Sample of video being embedded, click the play button to watch the video right here! ↑

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