ROYAL CANADIAN AIR CADETS

PROFICIENCY LEVEL TWO

INSTRUCTIONAL GUIDE

SECTION 4

EO C270.02 – IDENTIFY CANADIAN AVIATION MAINTENANCE COUNCIL (CAMC) INTERACTIVE MULTIMEDIA LEARNING TOOL (IMLT) ACTIVITIES

Total Time: 30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-802/PG-001, Chapter 4. Specific uses for said resources are identified throughout the Instructional Guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Before proceeding with this lesson, the instructor must become familiar with the procedures involved in using the IMLT.

Contact your Area Cadet Officer (ACO) to receive a log-on user ID and password.

Current instructions for exploring the IMLT are provided at http://3da.com/imlt/.

The following procedures are to be researched in advance:

- accessing the internet;
- logging onto the CAMC IMLT; and
- operating the IMLT.

Photocopy handouts located at Annexes A and B for each cadet.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for this lesson to clarify, emphasize and summarize the teaching points. An on-line visit to the IMLT will provide an overview of and promote interest in CAMC activities.

INTRODUCTION

REVIEW

N/A.

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OBJECTIVES

By the end of this lesson the cadet shall be expected to identify CAMC IMLT activities.

IMPORTANCE

It is important for cadets to know about the IMLT because it may help further develop their understanding of aviation. Identifying the modules in IMLT may develop an interest in aviation which may lead to future opportunities in the Air Cadet Program.

Teaching point 1 **Explain CAMC**

Time: 10 min Method: Interactive Lecture

CANADIAN AVIATION MAINTENANCE COUNCIL (CAMC)

The Canadian Aviation Maintenance Council (CAMC) is a not-for-profit sector council that represents and assists Canada's aviation and aerospace industry with its human resource strategy, issues and solutions. With the participation of industry members, they develop and publish National Occupational Standards with supporting log books (for professional certification) and curricula (for post-secondary training organizations). They promote safety, professionalism and standardization through:

- national communication with industry;
- human factors and safety management systems training;
- individual certification in 24 occupations; and
- accreditation of training organization programs.

AVIATION MAINTENANCE ORIENTATION PROGRAM (AMOP)

The CAMC Leading Edge/Youth Internship Program provides students with an academic orientation and work-based experience in aviation maintenance and technology. The program aims to develop interest among youth in careers within aviation and aerospace. It also establishes pathways for the transition from school to the working world of the aviation and aerospace industry.

The Leading Edge program provides a school-to-workplace transition for students who are about to make important decisions about their future. This program provides stepping stones from elementary school, to high school, to post secondary education, to industry. Therefore, community colleges and industry partnerships are essential elements to the success of the program at each location across Canada.

The program involves an aviation maintenance curriculum that begins at the high school level and is completed at the college level. High school graduates of the program will be able to proceed directly into a college technician diploma program or enter the industry workforce with some aviation knowledge and skills.

The funding model, which was initiated in September 1996, contains three elements:

- an academic phase comprising of classroom instruction and interactive multimedia based on the CAMC AMOP;
- a practical hands-on phase with a local industry partner where students can ideally work on or around aircraft under the guidance and supervision of a qualified technician; and
- a phase where students get to put theory into practice by:
    - working on/with aircraft or aircraft parts primarily provided by CAMC; or
    - by participating in the construction of available aircraft kit programs across Canada.

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Verify against the official publication.

INTERACTIVE MULTIMEDIA LEARNING TOOL (IMLT)

The IMLT is an interactive aviation curriculum that a cadet can individually log on to and create profiles, complete modules, and ask question related to the aviation industry. This can be done on their own time, using their personal computers.

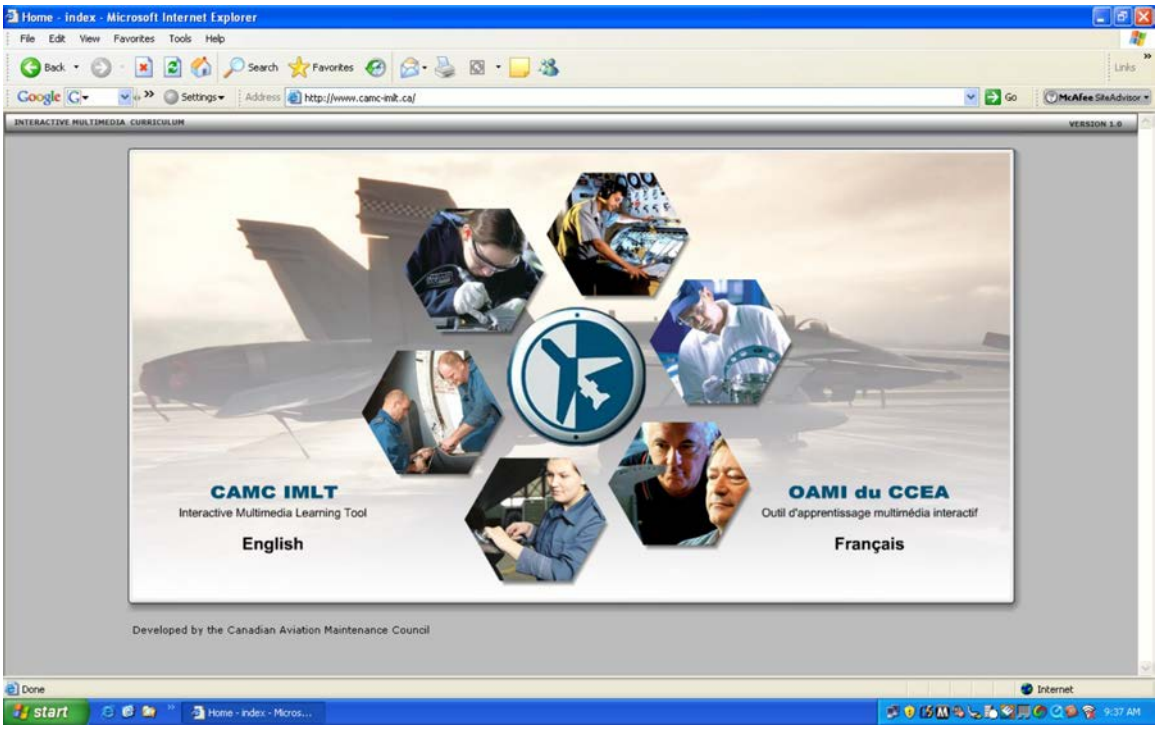


Distribute handouts located at Annex A and review the following IMLT log-in screenshots with the cadets.

The following steps must be completed in order to log-in to the IMLT curriculum.

STEP ONE

Go to the IMLT Website at www.camc-imlt.ca and click on “English” or “French” (Figure 1).



“CAMC”, IMLT, Home Index. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure 1 Home Index

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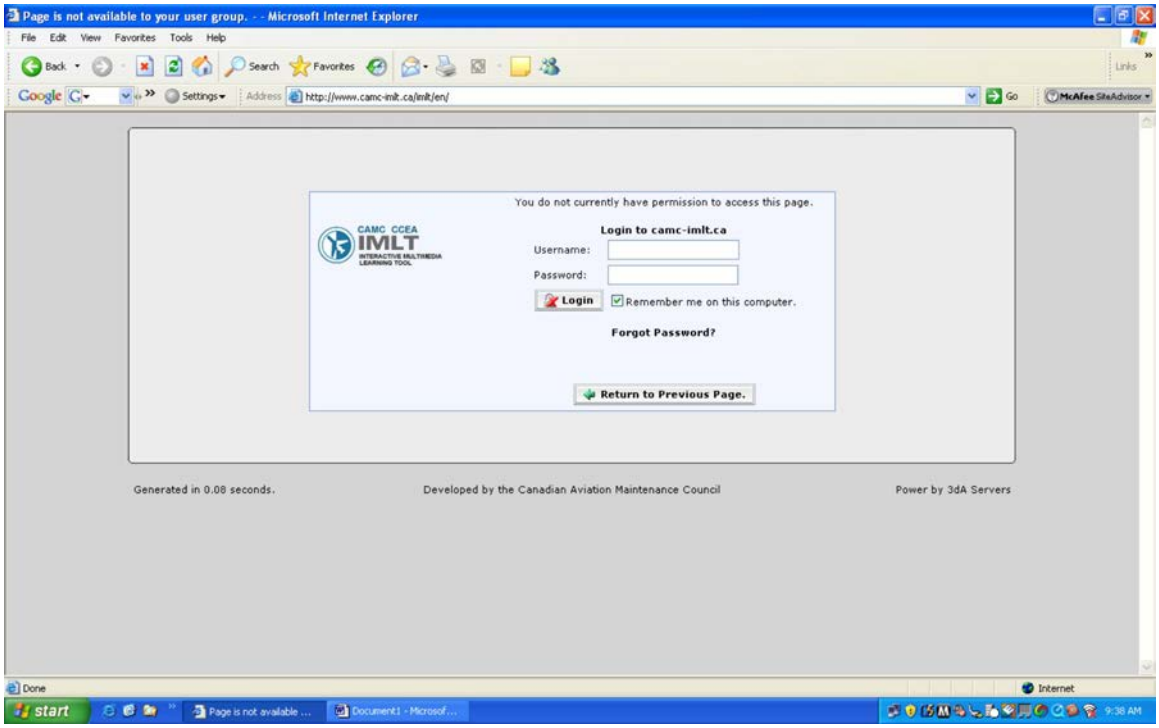
Verify against the official publication.

STEP TWO

Enter the username and password (provided by the instructor) and then click enter (Figure 2).



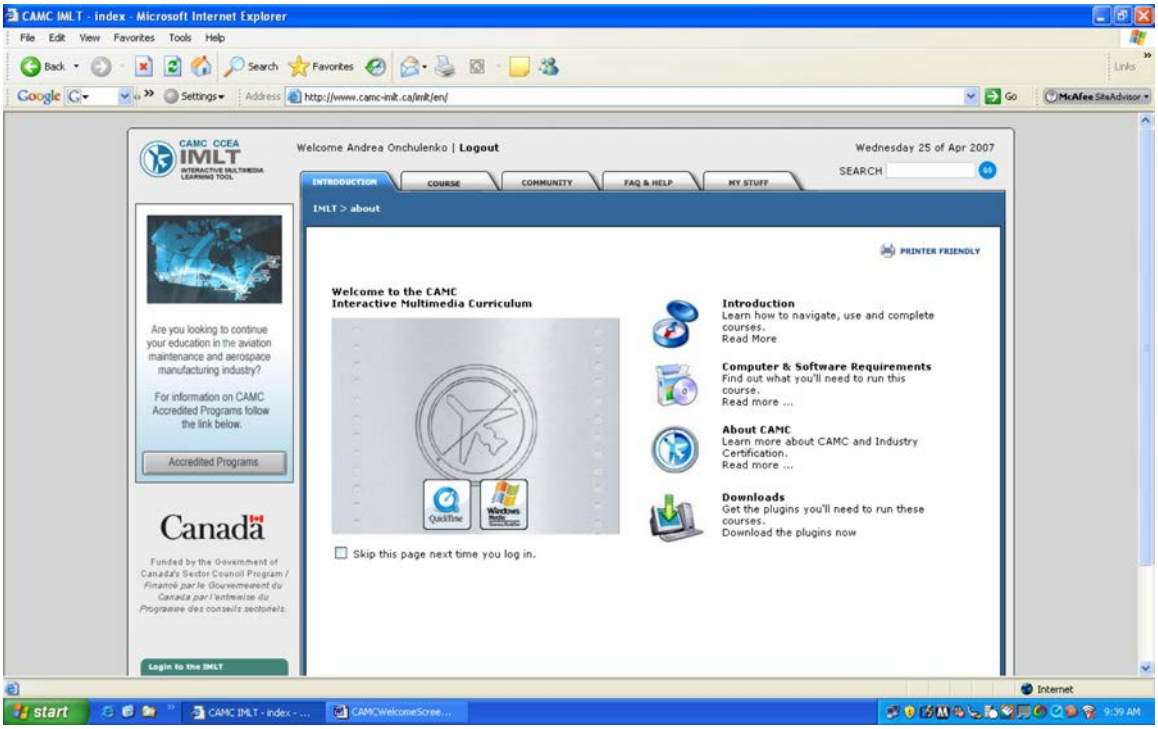
"CAMC", IMLT, Log-in. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure 2 Log-in

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
Verify against the official publication.

STEP THREE

Select the course by clicking on the tab at the top of the welcome page (Figure 3).



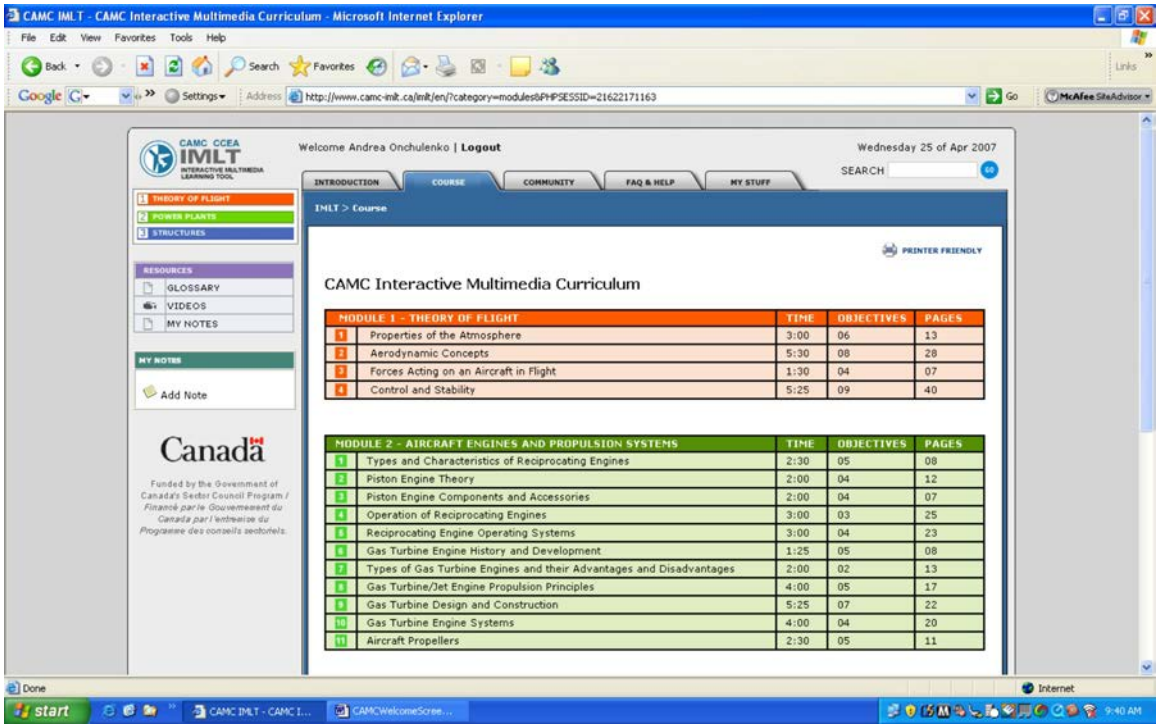
"CAMC", IMLT, Welcome Page. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure 3 Welcome Page

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
Verify against the official publication.

STEP FOUR

Select the module that you wish to complete by clicking on the title (Figure 4).



"CAMC", IMLT, Modules. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure 4 Modules

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What does CAMC stand for?

Q2. What does IMLT stand for?

Q3. Where do you get a username and password to log-in to IMLT?

ANTICIPATED ANSWERS

A1. CAMC stands for Canadian Aviation and Maintenance Council.

A2. IMLT stands for Interactive Multimedia Learning Tool.

A3. The instructor will provide a username and password to log-in to IMLT.

Teaching point 2 **Explain the IMLT Modules**

Time: 15 min Method: Interactive Lecture

There are three IMLT curriculum modules.

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Verify against the official publication.

MODULE 1 – THEORY OF FLIGHT

The theory of flight module establishes the basis upon which all aircraft fly. It includes the study of the atmosphere and the application of the laws of physics to explain how lift is generated and affected.

Module 1 includes the following topics:

- properties of the atmosphere,
- aerodynamic concepts,
- forces acting on an aircraft in flight, and
- control and stability.

MODULE 2 – POWER PLANTS

The power plant module examines the evolution, design and classification of various types of engines.

Module 2 includes the following topics:

- types and characteristics of reciprocating engines,
- piston engine theory,
- piston engine components and accessories,
- operation of reciprocating engines,
- reciprocating engine operating systems,
- gas turbine engine history and development,
- types of gas turbine engines and their advantages and disadvantages,
- gas turbine/jet engine propulsion principles,
- gas turbine design and construction,
- gas turbine engine systems, and
- aircraft propellers.

MODULE 3 – AIRCRAFT STRUCTURES

The aircraft structures module identifies the principle structural components and how their construction is such that they withstand the loads and stresses of flight as well as methods used to prevent premature problems.

Module 3 includes the following topics:

- loads and stresses imposed on an aircraft,
- aircraft parts and empennage structures,
- aircraft ground and engine support structures,
- rotorcraft structures,
- control systems,
- electricity,
- documentation,
- inspection, and

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Verify against the official publication.

- inspections methods.



Distribute the handout located at Annex B to the cadets to review when using the IMLT on their own.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. What are the three IMLT modules?

Q2. What is studied in the theory of flight module?

Q3. What does the power plant module examine?

ANTICIPATED ANSWERS

A1. The three modules are:

- theory of flight,
- power plants, and
- aircraft structures.

A2. The theory of flight module includes the study of atmosphere and the application of the laws of physics to explain how lift is generated and affected.

A3. The power plant module examines the evolution, design and classification of various types of engines.

END OF LESSON CONFIRMATION

QUESTIONS

Q1. What topics from the IMLT interest you?

Q2. How can IMLT help you in the Air Cadet Program?

Q3. What are the benefits of using IMLT?

ANTICIPATED ANSWERS

A1. Answers may vary.

A2. Answers may vary.

A3. Answers may vary.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

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Verify against the official publication.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Introducing the cadets to IMLT will help the cadets to further develop an understanding of aviation. Identifying the modules in IMLT may develop an interest in aviation which may lead to future aviation opportunities in the Air Cadet Program.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

C3-115 Canadian Aviation Maintenance Council (CAMC). (2007). *CAMC Interactive Multimedia Learning Tool (IMLT).* Retrieved 6 March 2007, from http://3da.com/imlt/.

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
Verify against the official publication.

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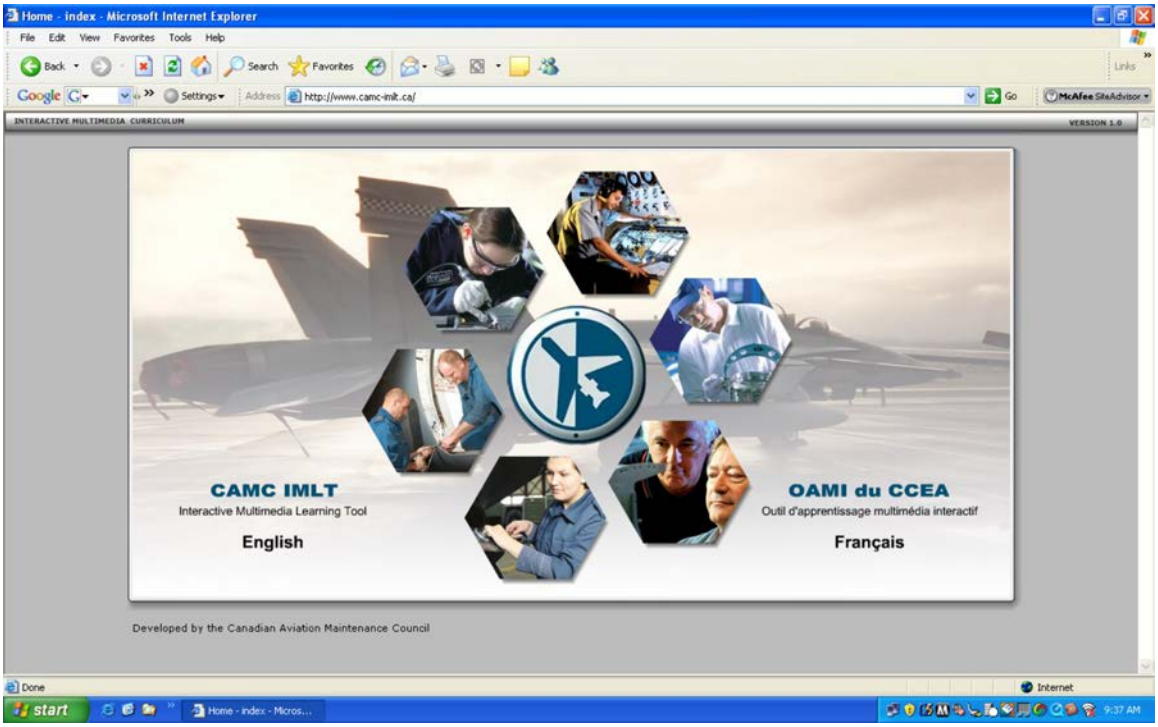
Verify against the official publication.

IMLT USER'S GUIDE

The following steps must be completed in order to log-in to the IMLT curriculum.

STEP ONE

Go to the IMLT Website at http://www.camc-imlt.ca/ and click on "English" or "French".



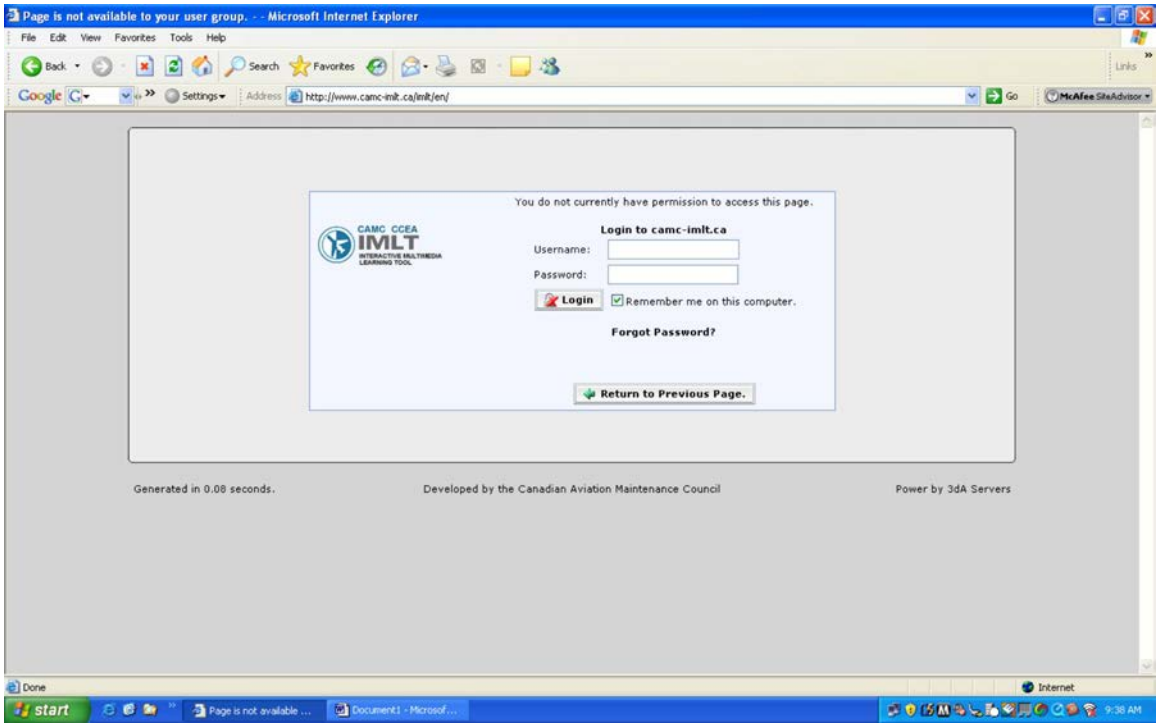
"CAMC", IMLT, Home Index. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure A-1 Home Index

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
Verify against the official publication.

STEP TWO

Enter the username and password (provided by the instructor) and then click enter.



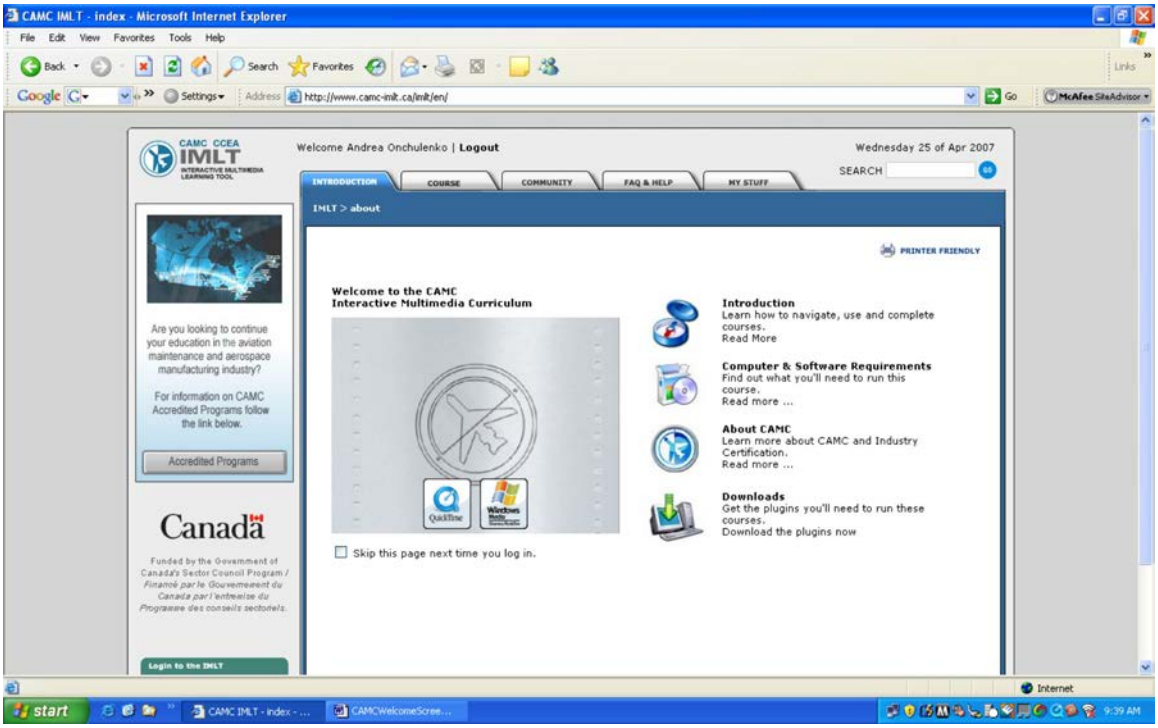
"CAMC", IMLT, Home Index. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure A-2 Log-in

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
Verify against the official publication.

STEP THREE

Select the course by clicking on the tab at the top of the welcome page.



"CAMC", IMLT, Home Index. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure A-3 Introduction

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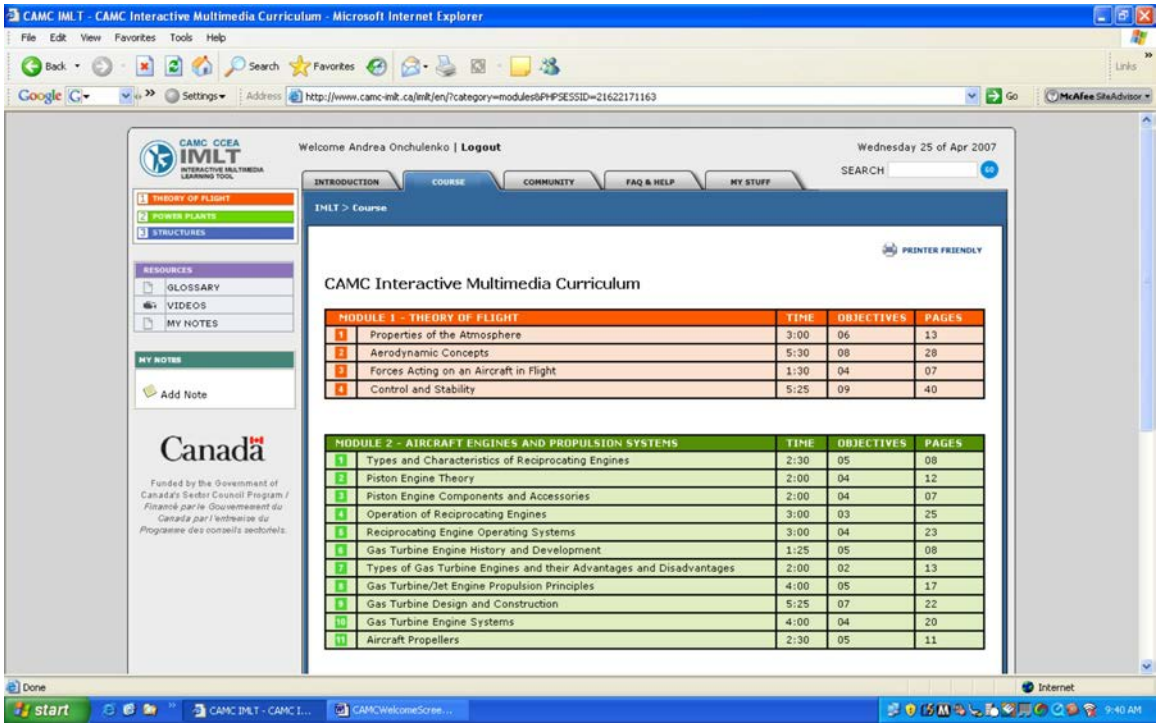
Verify against the official publication.

STEP FOUR

Select the module that you wish to complete by clicking on the title.



"CAMC", IMLT, Home Index. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure A-4 Course Curriculum

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
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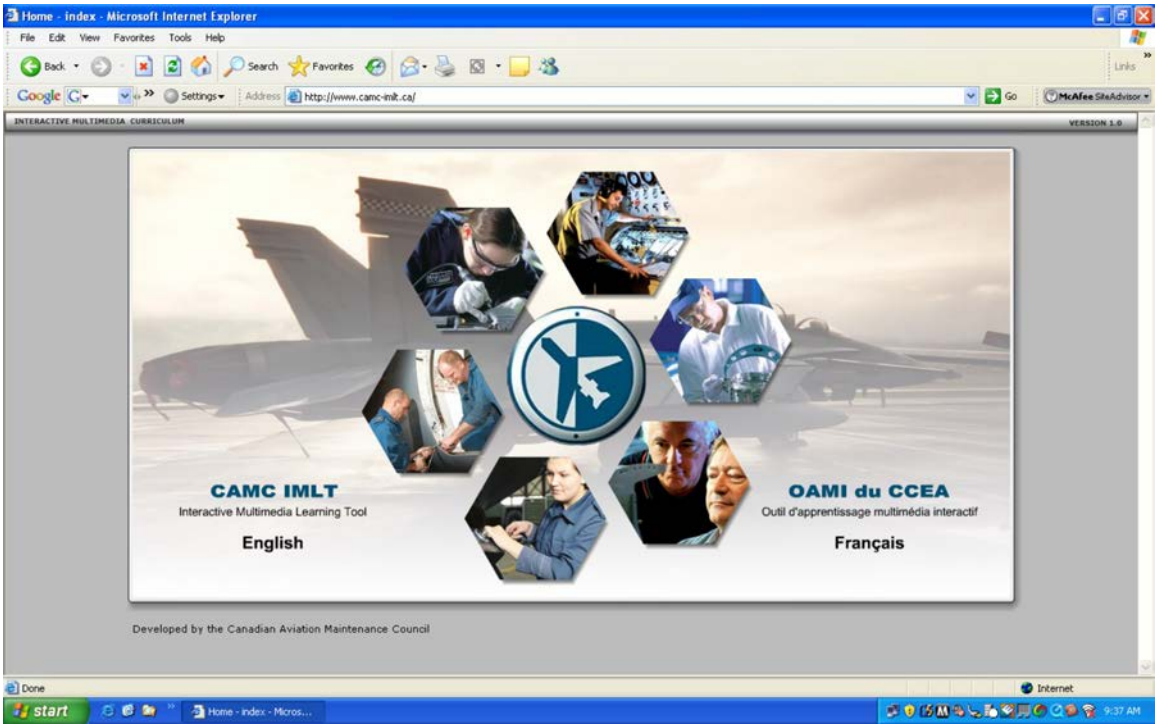
INTERACTIVE MEDIA LEARNING TOOL WELCOMING SCREENS

IMLT Sample Module Screen Shots



"CAMC", IMLT, Home Index. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure B-1 Home Index

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
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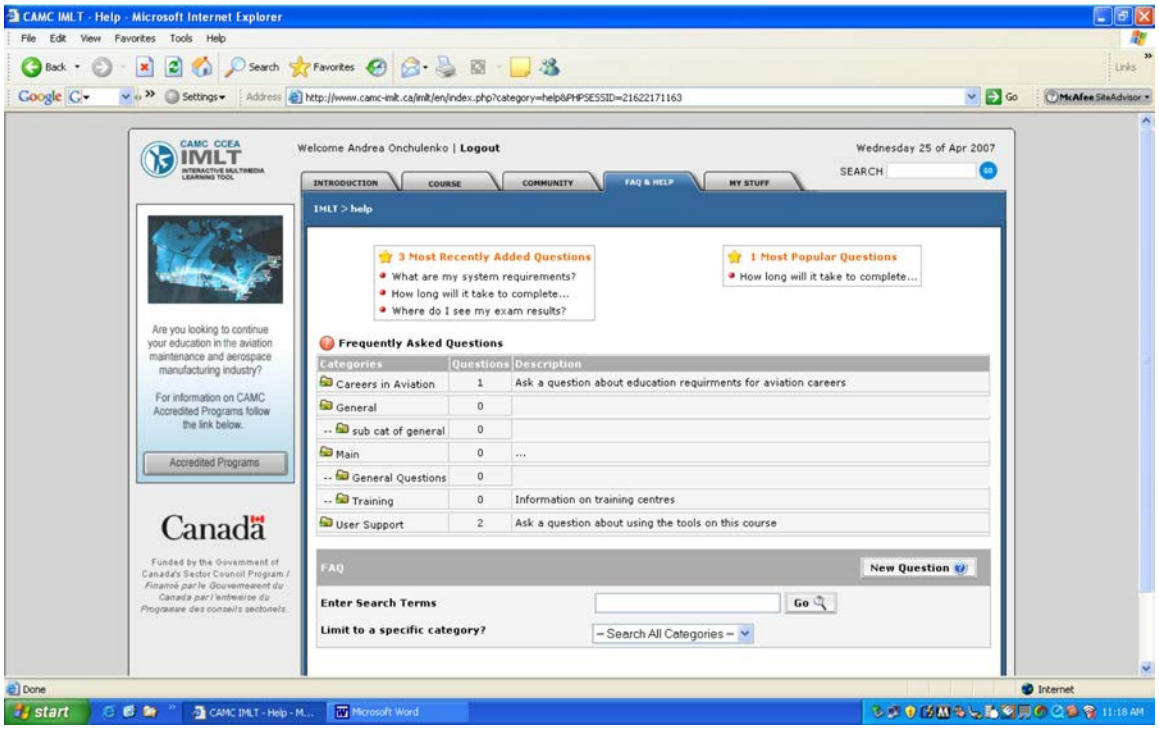
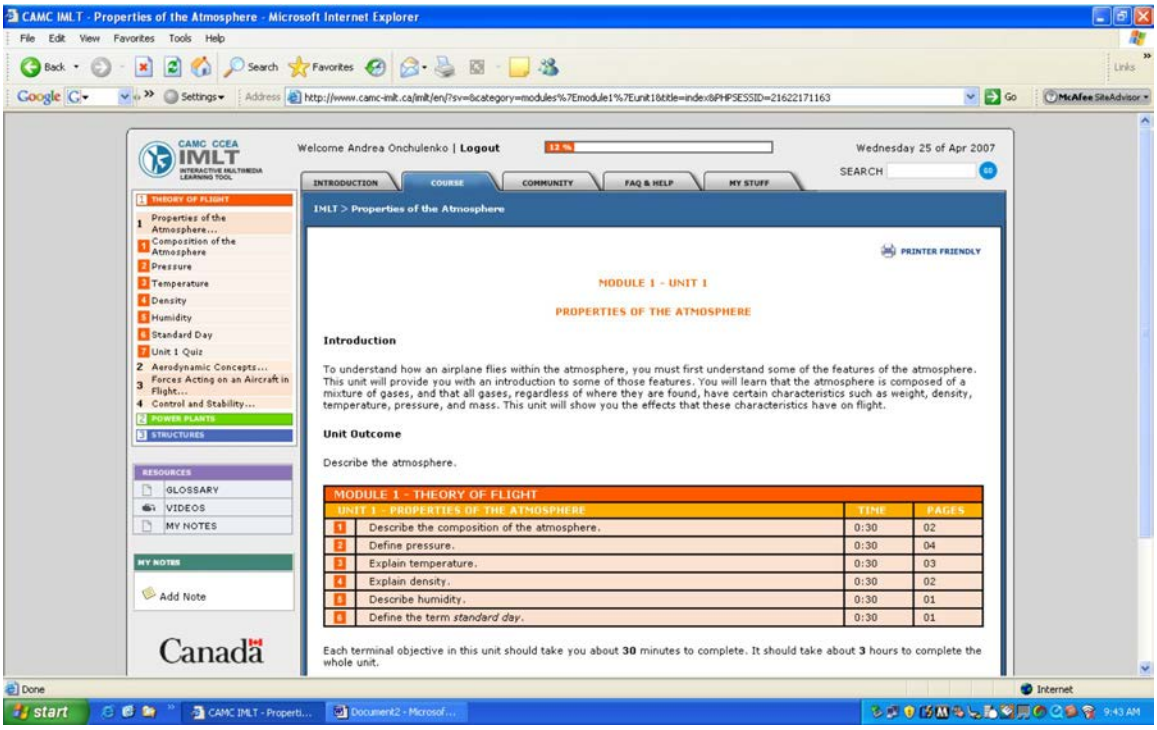


"CAMC", IMLT, FAQ and Help. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure B-2 FAQ and Help

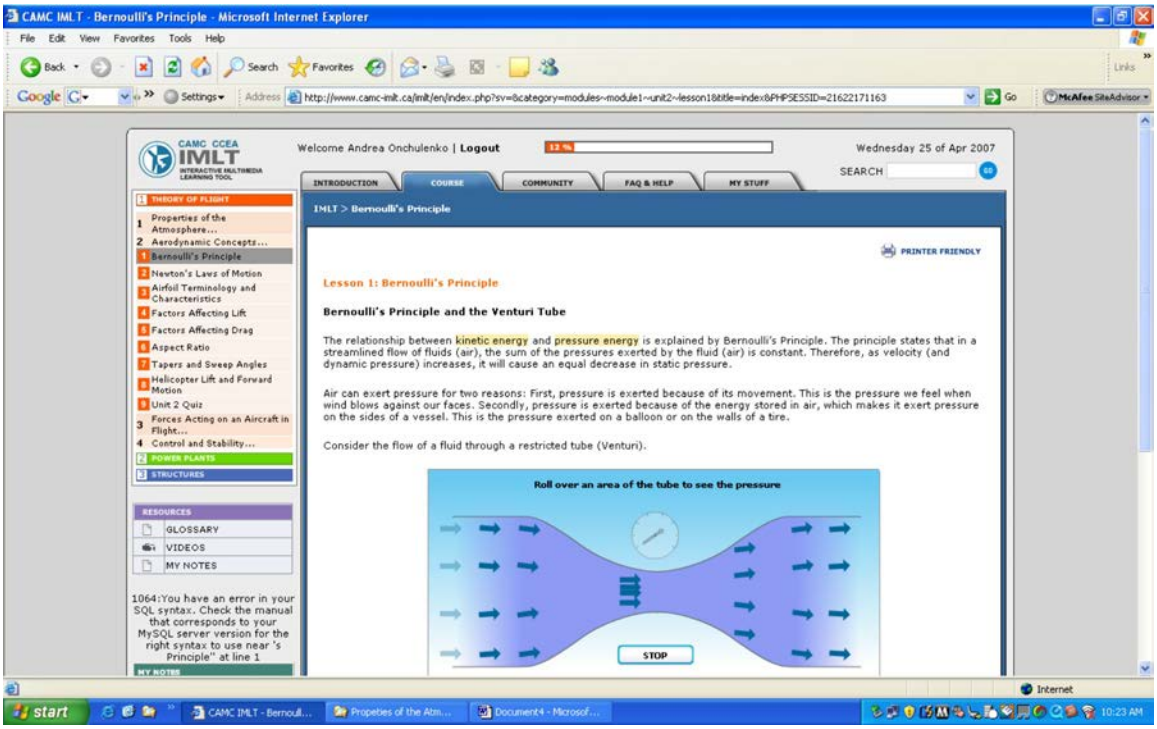
Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
Verify against the official publication.

THEORY OF FLIGHT



"CAMC", IMLT, Property of the Atmosphere. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure B-3 Theory of Flight: Property of the Atmosphere



"CAMC", IMLT, Bernoulli's Principle. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure B-4 Theory of Flight: Bernoulli's Principle

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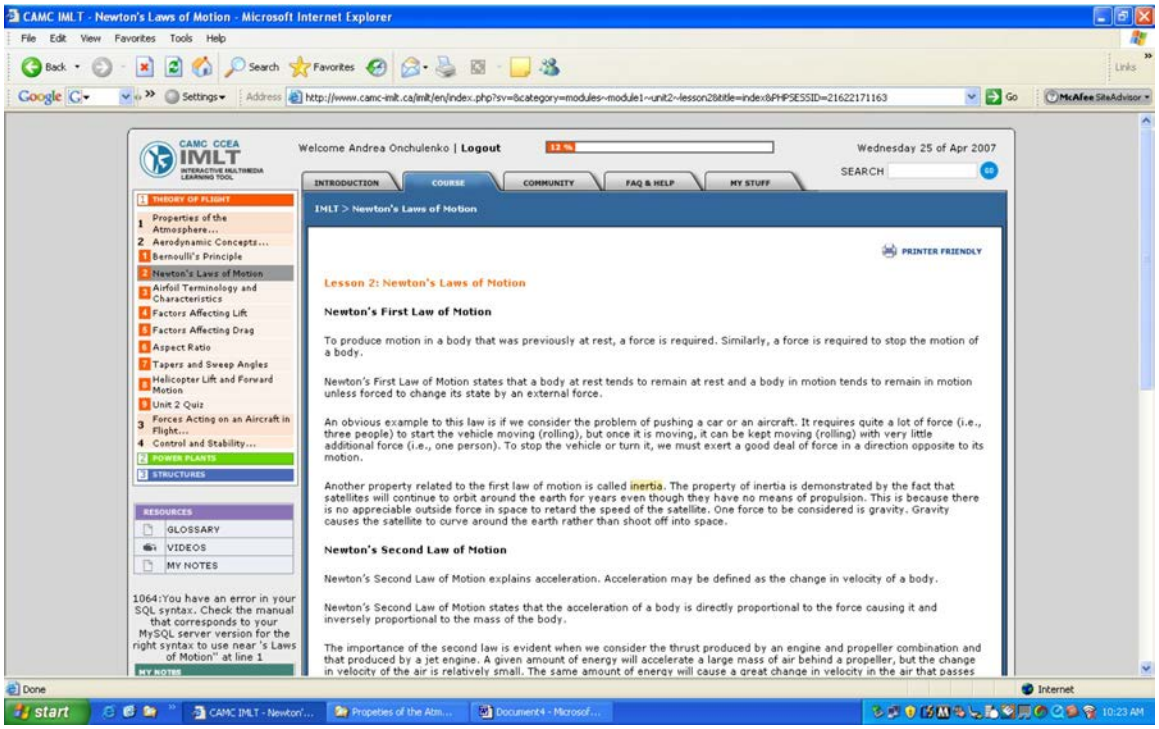
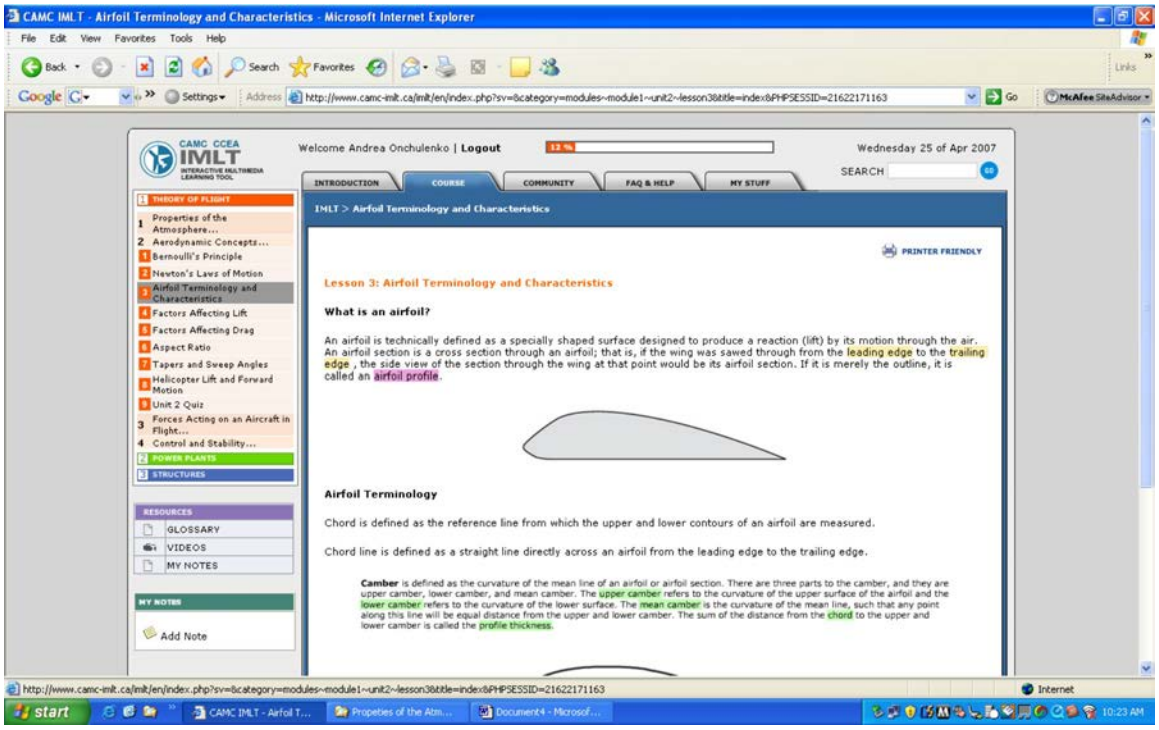


"CAMC", IMLT, Newton's Law of Motion. Retrieved 23 April 2007, from www.camc-imlt.ca

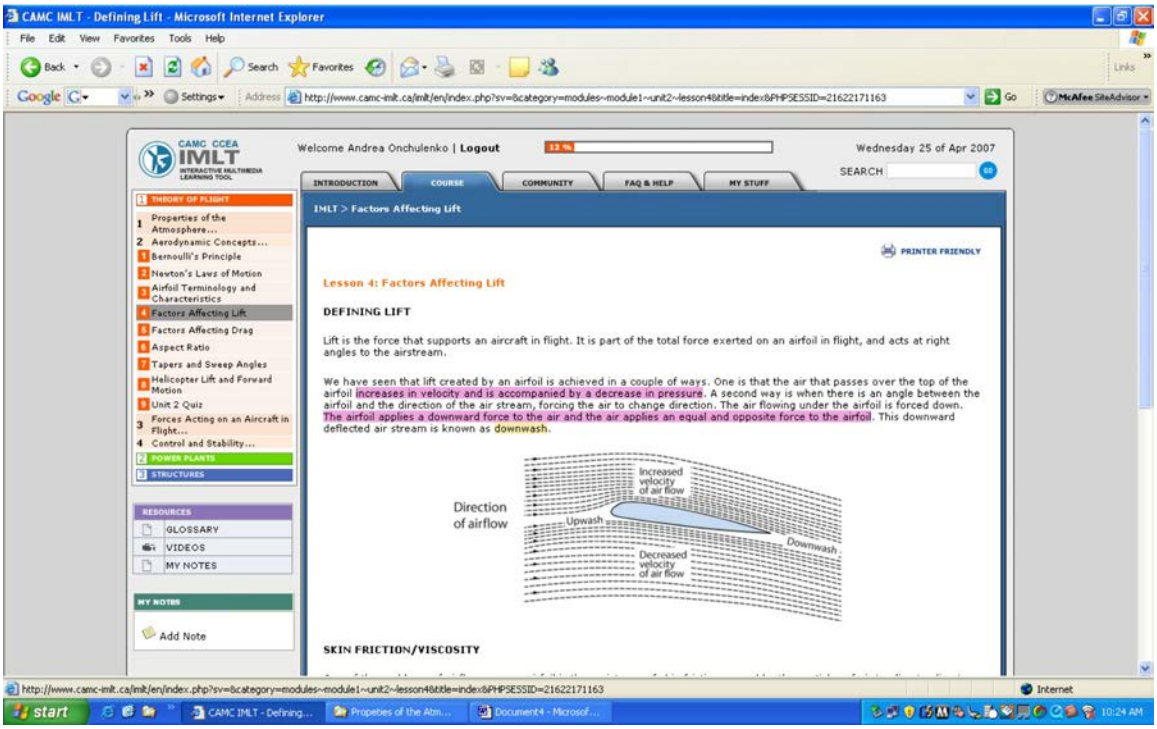
Figure B-5 Theory of Flight: Newton's Laws of Motion



"CAMC", IMLT, Airfoil Terminology and Characteristics. Retrieved 23 April 2007, from www.camc-imlt.ca

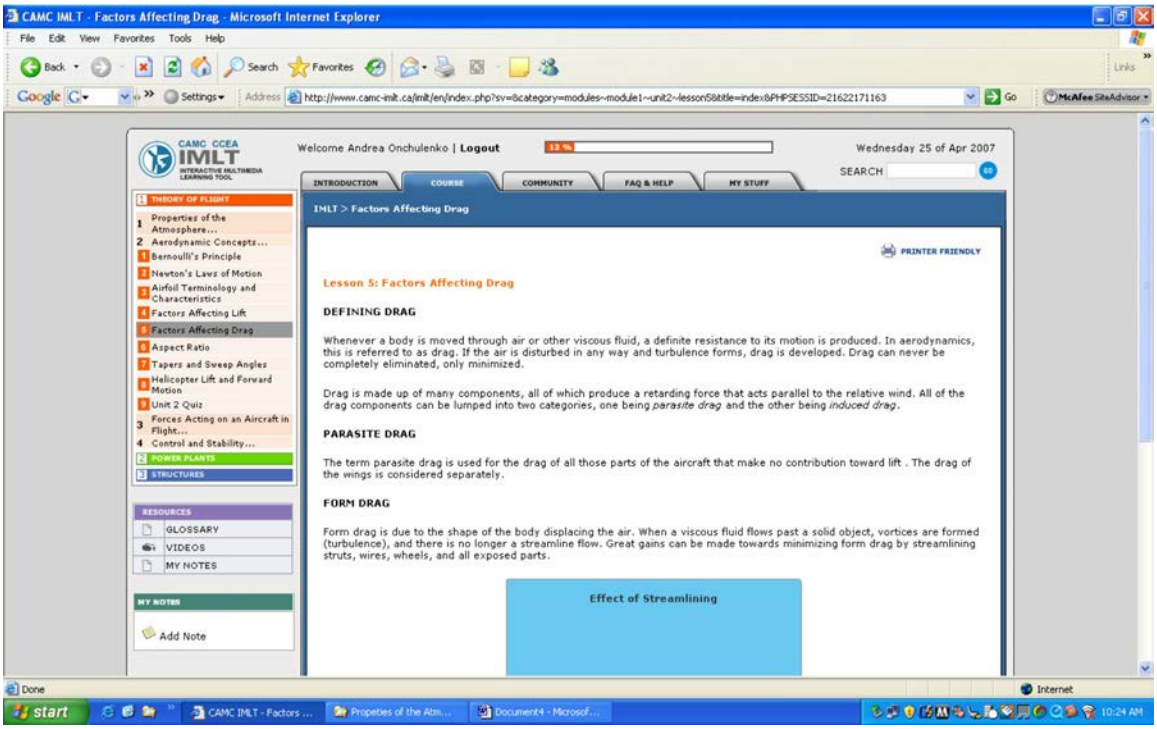
Figure B-6 Theory of Flight: Airfoil Terminology and Characteristics

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
Verify against the official publication.



"CAMC", IMLT, Factors Affecting Lift. Retrieved 23 April 2007, from www.camc-imlt.ca

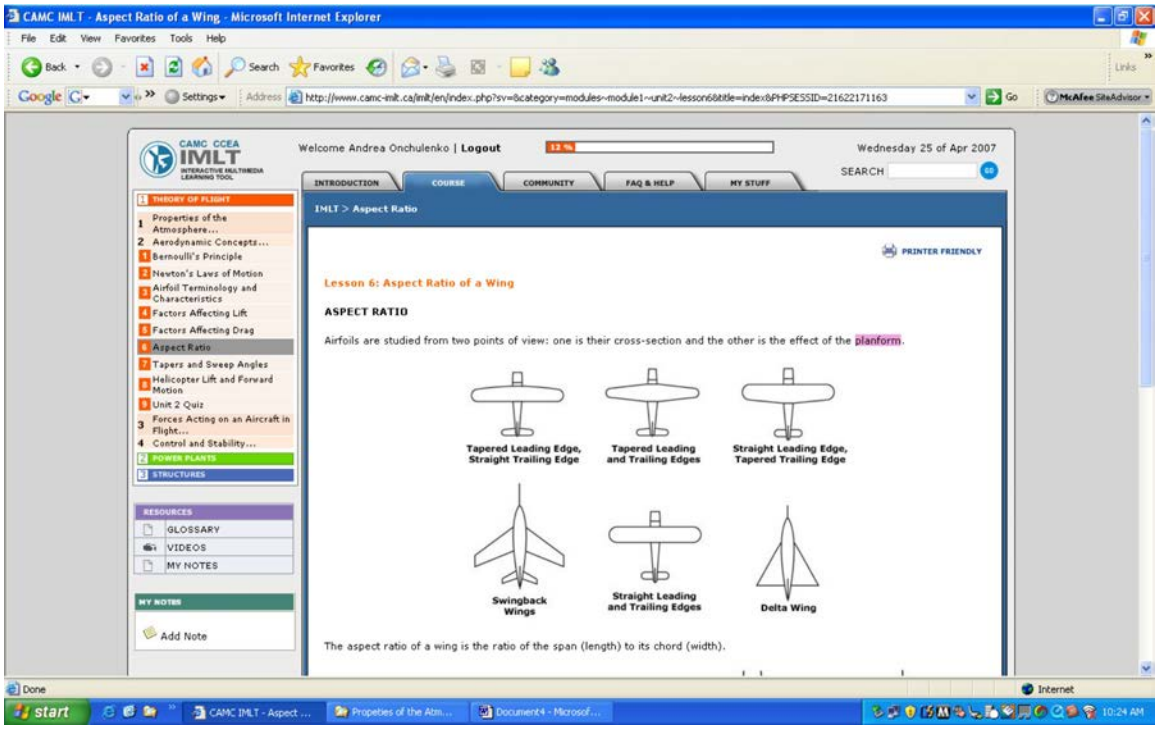
Figure B-7 Home Index Theory of Flight: Factors Affecting Lift



"CAMC", IMLT, Factors Affecting Drag. Retrieved 23 April 2007, from www.camc-imlt.ca

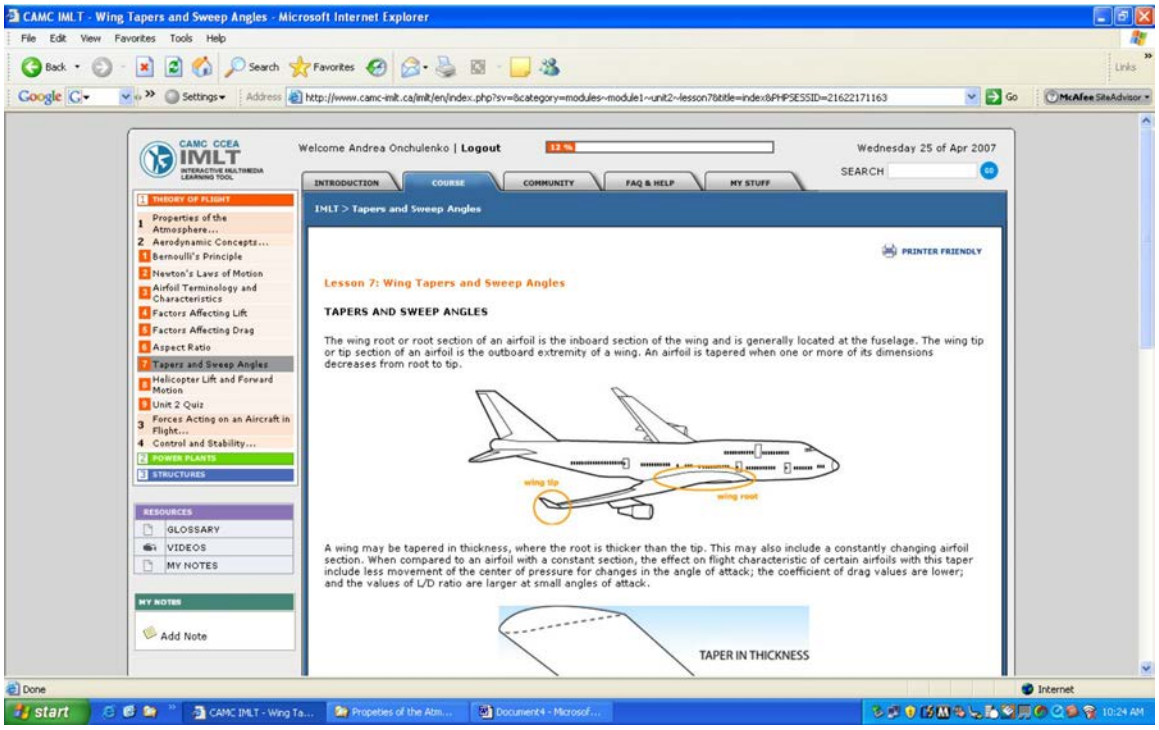
Figure B-8 Theory of Flight: Factors Affecting Drag

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
Verify against the official publication.



"CAMC", IMLT, Aspect Ratio of a Wing. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure B-9 Theory of Flight: Aspect Ratio of a Wing



"CAMC", IMLT, Wing Tapers and Sweep Angles. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure B-10 Theory of Flight: Wing Tapers and Sweep Angles

Unofficial convenience copy of A-CR-CCP-802/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-802-PF-001/A-CR-CCP-802-PF-001.pdf.
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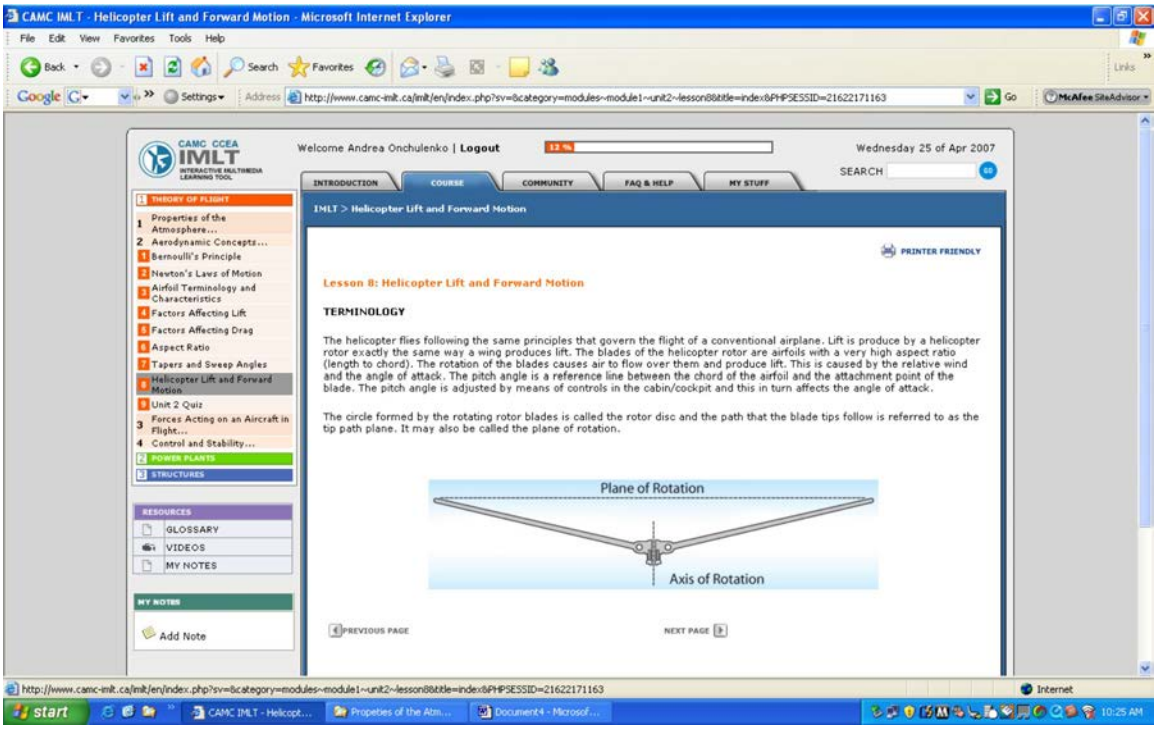
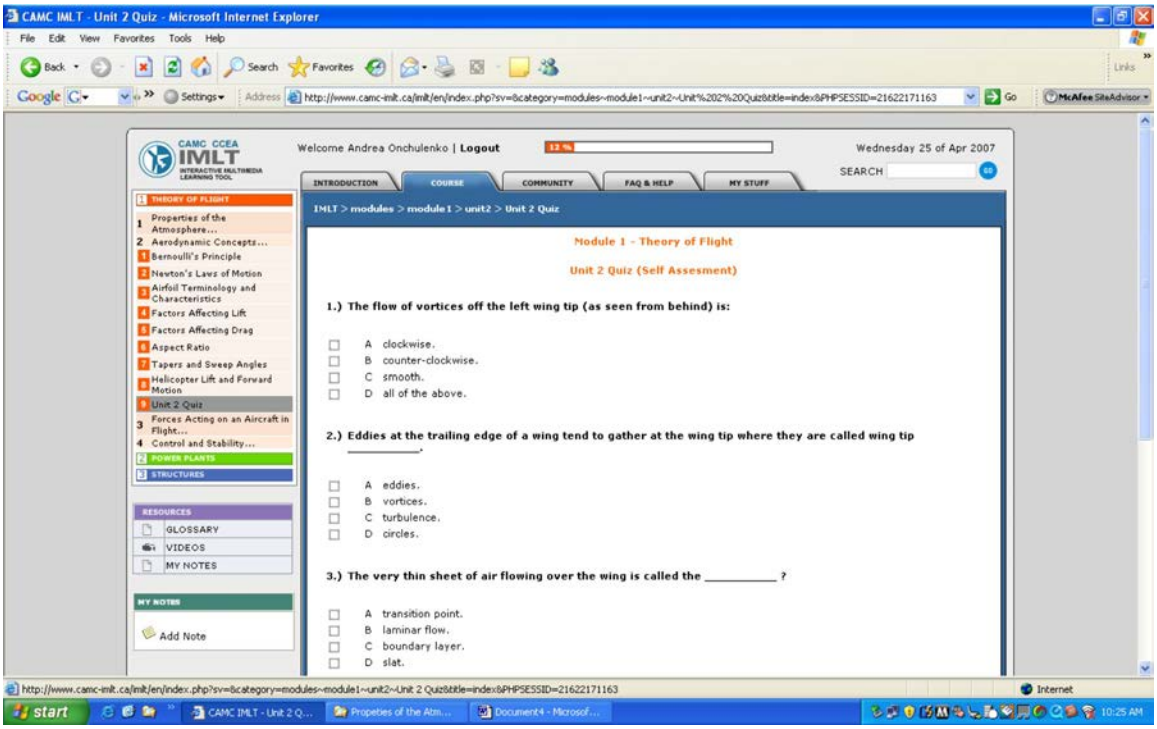


"CAMC", IMLT, Helicopter Lift and Forward. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure B-11 Theory of Flight: Helicopter Lift and Forward Motion



"CAMC", IMLT, Quiz. Retrieved 23 April 2007, from www.camc-imlt.ca

Figure B-12 Theory of Flight: Quiz (Self Assessment)

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