

# Study Guide

This course starts on a **Tuesday**. The modules in this course run from **Tuesday to Monday**.

## Module Theme:

Machine Learning Introduction:

- Introduction to Classification, Regression, and Neural Nets
- Introduction to Genetic Algorithms and Bayesian Learning

## Readings:

- Module 1 online content
- Géron Book:
  - Chapter 1
  - pp. 175-178 (Chapter 5, “Linear SVM...”)
  - pp. 195-198 (Chapter 6, “Training...”)
  - pp. 299-303 (Chapter 10, “Introduction...”)
  - Secondary reading: the rest of chapter 6
- Part I: Marsland Book Chapter 3, pp. 39-43, and Chapter 8, p. 169 (suggested but not required)
- Part II: Marsland Book Chapter 1 and Chapter 10, pp. 211-214 (suggested but not required)

## Assignments:

### Live Classrooms:

Join live classroom sessions at "Live Classrooms/Offices" on the left-hand course menu.

Module 2 Study Guide and Deliverables

## Module Theme:

Learning from Data and Neural Nets, Part I

## Readings:

- Module 2 online content
- Géron Book:
  - pp. 259-273 (Chapter 9, “Unsupervised...”)
  - Secondary: rest of Chapter 9
- k-Means: Marsland Book pp. 282-287 (suggested but not required)
- Learning with Neural Nets, Part I: Géron Book pp. 299-317 (“Introduction to Artificial...”); Marsland Book pp. 15-20, 43-49 (suggested but not required)

## Assignments:

### Live Classrooms:

Join live classroom sessions at "Live Classrooms/Offices" on the left-hand course menu.

Please note live sessions might take more than an hour depending on the topic and discussions.

Module 3 Study Guide and Deliverables

May 20 – May 26

## Module Theme:

## Neural Nets, Part II: Backpropagation and Deep Learning

### Readings:

- Module 3 online content
- Géron Book
  - pp. 300-338 (“From biological...”)
  - pp. 357-394 (“Training Deep...”)
  - Secondary: Chapter 11
- Neural Nets: Marsland Book pp. 73-85 (suggested but not required)

### Assignments:

#### Live Classrooms:

Module 4 Study Guide and Deliverables

#### Module Theme:

Neural Nets, Part III: Large Language Models (LMMs) and Generative Adversarial Networks (GANs)

### Readings:

- Module 4 online content
- Géron Book: pp. 659-662, (Chapter 17, “Generative...”)

### Assignments:

#### Live Classrooms:

Module 5 Study Guide and Deliverables

#### Module Theme:

Genetic Algorithms

### Readings:

- Module 5 online content
- Marsland Book Chapters 10.1 and 10.2 (suggested but not required)
- As time permits: Marsland Book Chapter 10.3 (suggested but not required)

### Assignments:

#### Live Classrooms:

Module 6 Study Guide and Deliverables

#### Module Theme:

Bayesian Learning

### Readings:

- Module 6 online content
- Marsland Book Chapters 2.3 and 16.1 (suggested but not required)

### Assignments:

#### Live Classrooms:

#### Course Evaluation:

Please complete the [course evaluation](#) once you receive an email or Blackboard notification indicating the evaluation is open. Your feedback is important to MET, as it helps us make improvements to the program and the course for future students.

## **Final Exam Details**

The final exam is a proctored exam.

The Computer Science Department requires that all final exams be administered using an online proctoring service, which you will access via your course in Blackboard. To take the exam, you are required to have a working webcam and computer that meets the system requirements. A detailed list of those requirements can be found on the "How to Schedule" page ("Proctored Final Exam Information" module on the course home page). Additional information regarding your proctored exam will be forthcoming from the Assessment Administrator. You will be responsible for scheduling your own appointment within the defined exam window.

The exam is accessible during the final exam period. You can access it from the "Assessments" section of the course. Your proctor will enter the password to start the exam.

Final exam duration: three hours.

The exam features essay questions. Each question is worth equal points.

Here are the materials that can be used during the exam:

- Use of the physical and/or eBook textbook is permitted.
- Use of a standard handheld and/or desktop calculator is allowed. Online calculators are not permitted.
- Use of any printed and/or electronic materials (such as PDFs) is allowed. You may access the course online, including graded assignments.
- Use of three pieces of blank scratch paper is permitted.