

Course Outline

585.615: Mathematical Methods for Applied Biomedical Engineering

This outline provides an overview of the course and assignments by week. Please remember to check the calendar for specific due dates.

Each course module runs for a period of seven (7) days, i.e., one week. See weekly module content document for specific due dates.

Module	Dates	Topics	Assignments
Module 1	Mon 01/25/2021– Sun 01/31/2021	Fourier series I	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 4.1 – 4.2 <input type="checkbox"/> Module 1 “Self-assessment” Quiz Prerequisite quiz - Not for credit! <input type="checkbox"/> Module 1 Homework Discussion – NA
Module 2	Mon 02/01/2021– Sun 02/07/2021	Fourier series II	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 4.3 – 4.8 <input type="checkbox"/> Module 2 Assignment <input type="checkbox"/> Modules 1 and 2 Homework Discussion <input type="checkbox"/> Quiz due
Module 3	Mon 02/08/2021– Sun 02/14/2021	Integral Transforms	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 5.1 – 5.4 <input type="checkbox"/> Module 3 Assignment <input type="checkbox"/> Module 3 Homework Discussion
Module 4	Mon 02/15/2021– Sun 02/21/2021	Selected Topics – Advanced Differential Equations	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 6.1 – 6.2, 6.4, 6.5.4 – 6.5.5 <input type="checkbox"/> Module 4 Assignment <input type="checkbox"/> Module 4 Homework Discussion <input type="checkbox"/> Module 4 Project 1 assigned
Module 5	Mon 02/22/2021– Sun 02/28/2021	Series Solutions of Ordinary Differential I	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 6.1.2, 7.1 – 7.4.1 <input type="checkbox"/> Module 5 Assignment <input type="checkbox"/> Module 5 Homework Discussion
Module 6	Mon 03/01/2021– Sun 03/07/2021	Series Solutions of Ordinary Differential II	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 7.4.2 – 7.4.3, 7.5, 7.6 <input type="checkbox"/> Module 6 Assignment <input type="checkbox"/> Module 6 Homework Discussion
Module 7	Mon 03/08/2021– Sun 03/14/2021	Special Functions I	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 8.1 – 8.4, 9.1.1 – 9.1.2 <input type="checkbox"/> Module 7 Assignment <input type="checkbox"/> Module 7 Homework Discussion <input type="checkbox"/> Module 4 Project 1 due <input type="checkbox"/> Module 7 Project 2 assigned



Module 8	Mon 03/15/2021– Sun 03/21/2021	Mid-term exam	<input type="checkbox"/> Mid-term exam <input type="checkbox"/> Completed homework modules 1–7 due
Module 9	Mon 03/23/2021– Sun 03/28/2021 Spring Break – Individual day 03/22/2021	Special Functions II	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 9.1.2, 9.5, 9.10 <input type="checkbox"/> Module 9 Assignment <input type="checkbox"/> Module 9 Homework Discussion
Module 10	Mon 03/29/2021– Sun 04/04/2021 Spring Break – Individual day 03/30/2021	Partial Differential Equations I	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 10.1, 10.1.1–10.1.2, 10.2, 10.3.1–10.3.2 <input type="checkbox"/> Module 10 Assignment <input type="checkbox"/> Module 10 Homework Discussion <input type="checkbox"/> Module 7 Project 2 due <input type="checkbox"/> Module 10 Project 3 assigned
Module 11	Mon 04/05/2021– Sun 04/11/2021	Partial Differential Equations II	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 11.1–11.2, 11.3.1–11.3.2 <input type="checkbox"/> Module 11 Assignment <input type="checkbox"/> Module 11 Homework Discussion
Module 12	Mon 04/12/2021– Sun 04/18/2021 Spring Break – Individual day 04/14/2021	Complex Variables I	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 14.1–14.6 <input type="checkbox"/> Module 12 Assignment <input type="checkbox"/> Module 12 Homework Discussion
Module 13	Mon 04/19/2021– Sun 04/25/2021 Spring Break – Individual day 04/22/2021	Complex Variables II	<input type="checkbox"/> Readings: Riley and Hobson, Chapter 14.8–14.12 <input type="checkbox"/> Module 13 Assignment <input type="checkbox"/> Module 13 Homework Discussion <input type="checkbox"/> Final exam posted - end of week
Module 14	04/26/2021– Thurs 04/29/2021*	Final exam	<input type="checkbox"/> Completed homework modules 9–13 due <input type="checkbox"/> Module 10 Project 3 due <input type="checkbox"/> Final exam due

