

MAS2905: Probability and Bayesian Methods with R

Dr. Lee Fawcett

Semester 2, 2020—2021

Contact details

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As you now know, things are very different this academic year!

The aim was for you to have a blended learning experience with some **present-in-person** (PiP) activities on campus and some online-only activities.

The academic year has not worked out like this!

In semester 2 we will continue with our online provision, until the situation improves enough for us to have some PiP activities scheduled back on campus.

Currently, this is what the timetable for our classes looks like:

- Fortnightly small group problems classes (PC). These will take place on Thursdays at the following times:
 - Group 1: 11–12
 - Group 2: 12–1
 - Group 3: 1:30–2:30
- Fortnightly **synchronous online** (SO) classes, alternating with the small group problems classes. These will take place on Fridays 12–1.
- As per semester 1, **non-synchronous online** (NSO) activities will be posted to Canvas every week, covering what would have ordinarily been covered in standard face-to-face lectures.

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Schedule

Week	w/b	Activities	Date	Time	Deadline?
10	1 Feb	Problems class NSO activities	Thurs 4 Feb	~~11:00/12:00/13:30~~ Check timetable— Some pre-class reading/videos	Wed 3 Feb
11	8 Feb	SO Lecture NSO activities Assignment 1 released	Fri 12 Feb Thu 11 Feb	12:00–13:00 Some pre-class reading/videos 16:00	— Thu 11 Feb 16:00 Thu 11 Mar
12	15 Feb	Problems class NSO activities	Thurs 18 Feb	~~11:00/12:00/13:30~~ Check timetable— Some pre-class reading/videos	Wed 17 Feb
13	22 Feb	SO Lecture NSO activities	Fri 26 Feb	12:00–13:00 Some pre-class reading/videos	— Thu 25 Feb
—	1 Mar	—Buffer week, no new work scheduled—			
14	8 Mar	Problems class NSO activities Assignment 1 due	Thurs 11 Mar Thu 11 Mar	~~11:00/12:00/13:30~~ Check timetable— Some pre-class reading/videos 16:00	Wed 10 Mar 16:00 Thu 11 Mar
15	15 Mar	SO Lecture NSO activities Assignment 2 released	Fri 19 Mar Thu 18 Mar	12:00–13:00 Some pre-class reading/videos 16:00	— Thu 18 Mar 16:00 Thu 29 Apr
16	22 Mar	Problems class NSO activities	Thurs 25 Mar	~~11:00/12:00/13:30~~ Check timetable— Some pre-class reading/videos	Wed 24 Mar
—		—Easter holidays—			
17	26 Apr	SO Lecture NSO activities Assignment 2 due	Fri 30 Apr Thu 29 Apr	12:00–13:00 Some pre-class reading/videos 16:00	— Thu 29 Apr 16:00 Thu 29 Apr
18	3 May	Problems class NSO activities	Thurs 6 May	~~11:00/12:00/13:30~~ Check timetable— Some pre-class reading/videos	Wed 5 May
19	10 May	Revision class Revision class	Tues 11 May Fri 14 May	13:00–14:00 12:00–13:00	— —

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Assessment: Reminder

The full 20 credit MAS2905 module will be assessed via a formal written examination in summer 2021 (possibly a '24 hour take-home paper') and some in-course assessment.

The make-up is 50% summer exam, 50% in-course assessment. Further details:

■ Summer exam, 100 marks in total

- Semester 1 material: Section A (20 marks)
- Semester 2 material: Section B (80 marks)
- Answer *all* questions in *both* parts

■ In-course assessment, 100 marks in total

- Semester 1 material: Test 1 (20 marks), mini project (30 marks), test 2 (30 marks)
- Semester 2 material: Two short homeworks (10 marks each)

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All course materials will be posted to the dedicated Canvas page for MAS2905. Here, you will find:

- A full copy of these lecture notes, with gaps
- A copy of the lecture notes with the gaps filled in, after the associated SO/NSO activities
- All slides used to support SO/NSO activities after these have taken place
- All video recordings
- Solutions to assessed exercises
- Any other materials, including additional handouts/worksheets and specimen exam papers and solutions, . . .

Some useful books for semester 2 include:

- “*Bayes’ Rule: A Tutorial Introduction to Bayesian Analysis*”
- James Stone
- “*Doing Bayesian Data Analysis: A Tutorial with R, JAGS, and Stan*” - John Krushke
- “*Bayesian Statistics: An Introduction*” - Peter Lee

“Bayes’ rule” is a good introduction to the main concepts in Bayesian statistics but doesn’t cover everything in this course. The other books are broader references which go well beyond the contents of this course.