

# **Spatial Analysis**

**STA5001**

**LMS Subject link**

<https://lms.latrobe.edu.au/course/view.php?id=147594>

## **SUBJECT LEARNING GUIDE**

**Teaching Period    Semester 1, 2024**

**Subject Coordinator**

**Dr Andriy Olenko**

## SUBJECT DETAILS

<b>Subject Code:</b>	STA5001
<b>Subject Title:</b>	Spatial Analysis
<b>Teaching Period:</b>	Semester 1
<b>Location(s):</b>	Melbourne (Bundoora)
<b>Credit Points:</b>	15
<b>Delivery Mode:</b>	Day
<b>AQF Level:</b>	Postgraduate

## ENROLMENT REQUIREMENTS

<b>Prerequisites:</b>	STM4PSD or enrolment into LMBAN, BM005, LMFAN.
<b>Co-requisites:</b>	None
<b>Assumed Skills &amp; Knowledge:</b>	Basic statistics
<b>Special Study Requirements:</b>	None

**Additional subject requirements:** None

**Class materials:** None

## STAFF CONTACTS

<b>Subject Coordinator:</b>	Dr Andriy Olenko
<b>Email:</b>	A.Olenko@latrobe.edu.au
<b>Tel:</b>	(03) 94792609
<b>Location:</b>	Office 224, PS2, Melbourne Campus
<b>Consultation time/s:</b>	12:00-13:00 Monday

<b>Location Coordinator:</b>	Dr Andriy Olenko
<b>Email:</b>	A.Olenko@latrobe.edu.au
<b>Tel:</b>	(03) 94792609
<b>Location:</b>	Office 224, PS2, Melbourne Campus
<b>Consultation time/s:</b>	12:00-13:00 Monday

C

## ABOUT THIS SUBJECT

The subject introduces you to spatial data analysis. It surveys the theory of spatial random processes, spatial statistics models, and their applications to a wide range of areas, including image analysis and GIS (geographic information system). The subject will cover the methodology and modern developments for spatial-temporal modelling, estimation and prediction, spectral analysis of spatial processes and working with big spatial data. All the methods presented will be introduced and illustrated in the context of specific datasets using statistical software. You will get experience with the analysis of real-world data.

## SUBJECT INTENDED LEARNING OUTCOMES (SILOs)

Upon successful completion of this subject, you should be able to:

1. Formulate purposeful questions to explore new statistical ideas and subsequently design valid statistical experiments.
2. Present clear, well-structured proofs of important theoretical statistical model results.
3. Creatively find solutions to real-world problems consistent with those commonly faced by practicing statisticians.
4. Professionally defend or question the validity of existing statistical analyses and associated evidence-based conclusions that are derived via the application of sound spatial statistical methodology.

## LEARNING ACTIVITIES

Timetable details are available at <https://www.latrobe.edu.au/students/your-course/timetables>. Students should also regularly check this subject's LMS site for updated information.

Session	Date	Learning Activities	Contact hours
1-12		Two lecture/practical classes per week	2
		<b>Total</b>	24

## SELF-DIRECTED STUDY

In addition to the learning activities specified, you are expected to allocate approximately 6 hours per week of self-directed study in this subject. This time includes subject preparation, completing learning activities, readings, assessment preparation and other related work to enhance your participation in this subject and your learning at La Trobe.

## LEARNING RESOURCES & TECHNOLOGIES

Resource Type	Title	Author and Year	Publisher
<b>Required</b>			
Lecture notes, problems	STA5001 lecture notes	Olenko A., 2024	LMS

Recommended			
Book	Analysing spatial point patterns in R.	Baddeley, A. 2008	Workshop Notes, Version 3. Available on-line
Book	Applied spatial analysis with R	Bivand, R.S., Pebesma, E. J., Gomez-Rubio, V. 2008	Springer Available on-line in La Trobe EBL ebook Library
Book	Statistics for spatial data	Cressie, N.A.C 1993	Wiley Available on-line in La Trobe EBL ebook Library

## ASSESSMENT AND FEEDBACK SUMMARY

Week Session	Date due	%	Assessment	Feedback method	SILOs assessed
	Tuesdays 11.55 pm in weeks 4, 7, 10, 12	40	4 Assignments	Feedback, including marks, will be provided next week after the submission date	1-4
	Official semester 1 examination period	60	3-hour Final Examination	Marks will be provided on official result release dates	1-4
		100			

### Additional information about assessment & feedback

Students should keep a copy of all assignments submitted for assessment.

## MANDATORY REQUIREMENTS

There are a variety of assessment hurdles or conditions for passing a subject other than the overall mark. **Mandatory Requirements** may be built into the assessment of the learning outcomes of your subject.

**There are no Hurdle Requirements for this subject**

## GENERAL ASSESSMENT REQUIREMENTS

## SUBMITTING WRITTEN WORK WITH TURNITIN

**Turnitin** is a web-based text-matching software system used at La Trobe University to assist you in writing your assignments and checking for similarity with existing published work. Please remember to allow adequate time to submit your assignment to Turnitin. **It is your responsibility to have your assignment submitted by the assessment due date.** Not receiving an originality report is not an acceptable reason for requesting an assignment extension unless it is a required part of the assessment.

## POLICIES, PROCEDURES AND GUIDELINES

The University has a comprehensive policy framework to which both staff and students must adhere. You should familiarise yourself with those policies, procedures and guidelines likely to affect you, especially the following:

- [Academic Progress Review Policy](#)
- [Assessment Policy](#)
- [Health and Safety](#) (OHS)
- [Privacy](#)
- [Student Academic Misconduct Policy](#)

## ADJUSTMENTS TO ASSESSMENT

You may be affected by a range of adverse circumstances while you are preparing for or undertaking an assessment task. There are avenues for adjustments to your assessment depending on the circumstances you face including opportunities to apply for extensions to submission dates, Special Consideration and Alternative Assessment Schedules. For more detailed information refer to the [Assessment Procedure – Adjustments](#).

## REQUEST AN EXTENSION OF TIME TO SUBMIT AN ASSIGNMENT TASK

Where you know in advance that you will not be able to submit an assessment task by the due date due to adverse circumstances that have affected you during the preparation of the task, you will need to [request an extension of time to submit](#). **This must be done at least three days prior to the due date.** Penalties normally apply if you submit an assessment after the due date. **Poor time management is not an acceptable reason for an extension.**

To apply, go to <https://www.latrobe.edu.au/students/admin/forms/request-an-extension/request>

## SPECIAL CONSIDERATION

If you have experienced serious short term, adverse and unforeseen circumstances that substantially affect your ability to complete an assessment task to the best of your potential, you may be eligible to apply for **Special Consideration**. To do this or find more information, go to <http://www.latrobe.edu.au/special-consideration>

## STUDENTS WITH A LEARNING ACCESS PLAN (LAP)

Students who have a Learning Access Plan must apply for any adjustments they may need via the same channels but may have access to more flexible arrangements depending on their circumstances. Please refer to the [Assessment Procedure – Adjustments](#) and your LAP.

## REVIEW AND RE-MARK

For information on what to do if you wish to seek a review of an assessment outcome see [Part B](#) of the Validation and Moderation Procedure.

## ACADEMIC INTEGRITY

Academic integrity means being honest in academic work and taking responsibility for learning the conventions of scholarship. Academic integrity education is integral to the learning experience at La Trobe University. The University requires its academic staff and students to observe the highest ethical standards in all aspects of academic work, and it demonstrates its commitment to these values by awarding due credit for honestly conducted scholarly work, and by penalising academic misconduct and all forms of cheating.

The penalty for submitting an assignment under your name that is the work of a third party may be severe, even leading to exclusion from the University without readmission. Refer to the **Academic Integrity - Schedule of Penalties and Actions** within the [Student Academic Misconduct Policy](#).

You should understand and be able to practice integrity in all your academic work, be familiar with the [Academic Integrity website](#) and complete the **Academic Integrity Module (AIM)** found in your LMS.

If you have any specific questions about **academic integrity** and your assessment, your Subject or Course Coordinator will be able to assist.

## STUDENT FEEDBACK ON SUBJECT SURVEYS

The **Student Feedback on Subjects (SFS) Survey** is one of the quality assurance processes that occur across the University. In this survey, you can tell us about your learning experiences in this subject. We value your feedback. Your views are taken seriously and assist us to improve the learning experience for future students through the LTU Subject Monitoring process.

The surveys will be available for you to complete towards the end of the subject teaching period. Feedback from previous students who completed this subject is available in the LMS site for this subject.

For more information you may contact [surveys@latrobe.edu.au](mailto:surveys@latrobe.edu.au).

## CHARTER OF STUDENT RIGHTS AND RESPONSIBILITIES

As a La Trobe coursework student, you have rights and responsibilities which are governed by La Trobe statutes and regulations, as well as policies and procedures. La Trobe University aspires to provide an outstanding student experience which is conducive to scholarly activity and supportive of your learning goals.

The **Charter of Student Rights and Responsibilities** is a summary of your rights and responsibilities as a student at La Trobe. The Charter was developed in consultation with La Trobe students.

<https://policies.latrobe.edu.au/document/view.php?id=225>.

## STUDENT COMPLAINTS

The **Student Complaints Management System (SCM)** is a formal mechanism for students to lodge concerns about any aspect of their university experience. A student complaint may be about an administrative matter, a problem with a subject or course, or the conduct of a student or staff member.

For more information about the **Student Complaint process** and how to lodge a complaint, visit the **Complaints and Feedback** page at: <https://www.latrobe.edu.au/students/support/complaints>.

## GETTING HELP AND SUPPORT AT UNI

A range of services at La Trobe can assist you with your studies, health and wellbeing. For the full range of services and facilities available for you, go to **Student Help and Support** at <http://www.latrobe.edu.au/students/support>.

## STUDYING ONLINE

When you are in studying an online subject, please be sure that you can continue to access our learning support services through the Learning Hub (academic skills, English language, Maths and Science) via Zoom appointments that you can book by accessing the [Learning Hub LMS page](#) or by emailing the [LearningHub@latrobe.edu.au](mailto:LearningHub@latrobe.edu.au).

You also have access to assignment feedback and online study support chat through Studiosity that can be accessed from any subject [LMS](#) page. You can also access the Library services remotely through [the library website](#).

## LIBRARY LEARNING SERVICES

Your University Library offers more than a place to access information or a quiet place to study. We have a team of friendly specialists and a wide range of services available to assist you in your academic studies. Discover how by visiting your [Library Website](#) and the [Study and Research Support](#) webpage, and exploring the following options:

- **ACHIEVE@UNI**  
<https://www.latrobe.edu.au/students/study-resources/learning/achieve> - Browse a collection of online learning resources, including writing samples from real students, to help you understand and complete your assessments.
- **PATHFINDER – YOUR GUIDE TO LEARNING SUCCESS**  
<https://lms.latrobe.edu.au/course/view.php?id=57964>  
Find practical, online advice to help you develop effective study habits, improve your assessments, prepare for exams, and enhance your research skills. Also, learn how to connect with friendly specialists for assistance including Academic Skills Language Advisors, Librarians, Peer Learning Advisors, Maths, Science and Coding Hub Tutors.
- **ENGLISH FOR SUCCESS – ACADEMIC ENGLISH TRANSITION**  
<https://lms.latrobe.edu.au/course/view.php?id=137328>  
Find strategies to help you transition to study in Academic English, whether you are an international student or a domestic student in your first year of study.

- **STUDIOSITY**

[https://studiosity.com/connect/users/sign\\_in](https://studiosity.com/connect/users/sign_in)

An online writing feedback and study skill chat service available when you need it. Access this service through your Subject LMS page, or the Library's **Study and Research Support** webpage.

- **ASSESSMENT PLANNER**

<http://www.latrobe.edu.au/library/assessment-thesis-support/plan-my-assessment> –

Create a personal assessment schedule.

- **EXPERT SUBJECT HELP GUIDES**

<https://latrobe.libguides.com/> - Find expert discipline and specialist help for your field of study.

- **REFERENCING AT LA TROBE UNIVERSITY**

<http://latrobe.libguides.com/referencing/> - Understand why, when and how to reference your work.

- **ACADEMIC REFERENCING TOOL**

[www.lib.latrobe.edu.au/referencing-tool](http://www.lib.latrobe.edu.au/referencing-tool) - Get detailed examples of referencing styles.

- **CHAT TO LIBRARY STAFF**

<https://www.latrobe.edu.au/library/about/contact> - Chat online with a specialist – not a chatbot – for advice on finding information, referencing, and more.

- **CONTACT US**

[www.latrobe.edu.au/library/about/contact](http://www.latrobe.edu.au/library/about/contact) - Call or email us to learn how we can assist you.

## OTHER LEARNING AND SUPPORT PROGRAMS

There are many resources, including services, to help you with your academic studies at La Trobe. For more information, visit the **Learning and Support Programs** page at <http://www.latrobe.edu.au/students/study-resources/learning>.

## ASK LA TROBE

**ASK La Trobe** is a service open to all La Trobe students who need guidance with administrative matters during their time at La Trobe. ASK La Trobe can provide you with help relating to enrolments and timetabling, fees and financial support, exams, results and graduations & student life and support services.

Go to **ASK La Trobe – Current Students** at <http://latrobe-current.custhelp.com/app/home> and start by looking at our **FAQs** or visit us at your campus **ASK La Trobe Help Zone**.

If you can't find what you're looking for:

- Call 1300 La Trobe (1300 528 762)
- Ask a question online at <http://latrobe-current.custhelp.com/app/ask>
- Visit the **ASK La Trobe Help Zone**. Join the queue for the Bundoora, Bendigo or city campuses using the **QLess: Virtual Queuing system**.

## LEARNING AND SUPPORT PROGRAMS

There are many resources, including services, to help you with your academic studies at La Trobe. Go to the **Learning and Support Programs** page at <http://www.latrobe.edu.au/students/study-resources/learning> for further information.



## HEALTH AND WELLBEING

Your health and wellbeing are an important part of being a successful student. Studying can be stressful and many factors can affect your mental and physical health, in and outside of the University.

**Check out the services available to you at La Trobe to support your health and wellbeing at [www.latrobe.edu.au/wellbeing](http://www.latrobe.edu.au/wellbeing)**