THE UNIVERSITY OF WESTERN AUSTRALIA

Analytical Methods for Scientists (SCIE1500)

Atakelty Hailu

Semester 1, 2026

Unit Code:	*SCIE1500*	Title:	*Analytical Methods for Scientists*
Schools:	*SAgE & PMC*	Unit Contact:	*atakelty.hailu@uwa.edu.au*
Level:	*1*	Credit Units:	*6 points*

Version 1.0 (15 February 2026)

Instructors and Contact Details

Unit Coordinator and Instructor

Name:	Dr. Atakelty Hailu
Email:	atakelty.hailu@uwa.edu.au
Office location:	G.030, North West Wing, Ag. Inst. Bldg
Consultation:	by appointment (see LMS for office location)

Instructor

Name:	Dr. Luke Morgan
Email:	luke.morgan@uwa.edu.au
Consultation:	by appointment (see LMS for office location)
Labs:	Mon 10am–12pm, Mon 2–4pm
Venue:	ENCM: [207A], Crawley Campus

Wednesday, Crawley Campus

Name:	Yadav Padhyoti
Email:	yadav.padhyoti@research.uwa.edu.au
Lab:	Wed 1–3pm
Venue:	ENCM: [207A]

Thursday, Crawley Campus

Name:	Gaia Scomazzon
Email:	gaia.scomazzon@uwa.edu.au
Lab:	Thu 2–4pm
Venue:	ENCM: [207A]

Wednesday, Albany Campus

Name:	Peter Speldewinde
Email:	peter.speldewinde@uwa.edu.au
Lab:	Wed 9–11am
Venue:	ALBSCI: [302] Seminar A (10), ALBSCI: [303] Seminar B (10)

Other content contributors	
Previous contributors:	Dr. Leonardo Portes dos Santos
	Dr. Nazim Khan
	Dr. James Fogarty
	Dr. Talitha Santini
	Dr. Silvana Gaudieri
	Dr. Nanthi Bolan
	Dr. Amin Mugera

Unit Information

The unit teaches analytical methods through four acts: *Understanding Systems* (functions, calculus, and optimisation); *Measuring Accumulation* (integration and its applications); *Predicting Interactions* (systems dynamics and probability); and *Making Optimal Decisions* (periodic models and constrained optimisation). Scientific applications—including ocean pollution, mining and rehabilitation, population dynamics, disease spread, and sustainable food production—are woven throughout.

Students learn from the perspective of practising analytical scientists, and are involved in: formal analytical model development and specification; using computational approaches to solve analytical problems; and the communication of formal analytical results to a scientific audience.

The overall unit focus is on using modern computational methods to specify and solve analytical problems, and then present the results of formal analysis clearly and concisely.

Unit Learning Outcomes

#	Outcome	How outcome will be assessed
1	Understand and discuss key scientific relationships and processes relevant to all four modules	assignments, exam
2	Demonstrate written evidence of an ability to develop concise, logical, analytical models to describe scientific processes	exam, assignments
3	Use computer software to solve analytical and optimisation problems	assignments, labs
4	Apply analytical and technical skills to describe fundamental scientific processes relevant to each module	assignments, exam, labs
5	Explain and present formal results clearly and accurately	assignments, exam, labs

Assessment items

#	Assessment	Weighting	Failed Component
1	Participation (attendance) & Lab work	20%	NA
2	Assignments (2)	30%	NA
3	Final Exam	50%	NA

Unit Structure

This unit is taught using recorded lectures and lab sessions. Each week, students need to attend only one 2-hour lab session. Before coming to the labs, they should work through the recorded video lectures (both science and math) for the week. Recorded lectures for each week will appear mostly as a series of short video recordings. Lecture content is also available through the **SciQuant Assistant app**, which delivers lessons, practice exercises and lab notebooks.

Labs will be held during all teaching weeks of the semester, except during UWA holidays. Students missing labs because of UWA holidays will be accommodated in make-up lab sessions organised online or face-to-face.

The SciQuant Assistant App

The SciQuant Assistant is a purpose-built learning application for this unit. It serves as your **primary learning platform** throughout the semester. All your weekly lesson content, practice exercises, lab notebooks, and learning resources are organised within the app by week. The app also provides a personalised AI tutor that is aware of the course material and adapts to your scientific discipline and mathematical comfort level.

Key Features

- **AI Tutor** — A personalised AI tutor that knows the course content and adapts explanations to your scientific discipline (e.g. biology, environmental science, geology, agricultural science, biomedical science). The tutor uses guided questioning (the Socratic method) to help you build genuine understanding rather than simply providing answers. You can ask it for help at any point—while reading a lesson, working on practice questions, or during lab exercises.
- **Interactive Lessons** — Each week's lecture content is presented as a rich, interactive lesson with properly rendered mathematical equations, diagrams, and scientific context. Lessons include adjustable font sizes for comfortable reading.
- **Practice Questions** — Multiple-choice and open-ended practice problems with progressive hints, step-by-step solutions, and the ability to ask the AI tutor for guidance on any specific question. The system tracks your attempts and encourages you to try before revealing solutions.
- **Jupyter Notebook Integration** — Lab notebooks can be viewed directly in the app, or opened in Google Colab or your local Anaconda installation for interactive coding. When you open a notebook in Google Colab, you are working on a temporary copy—any changes you make (e.g. your code, outputs, and notes) will be lost when you close the tab unless you save. Use **File** $\rightarrow$ **Save a copy in Drive** to save your work to your personal Google Drive (this works automatically with your UWA Google account). You can also use **File** $\rightarrow$ **Save a copy as a GitHub Gist**, which creates a shareable code snippet on GitHub; this option requires a free GitHub account.
- **STEM Tools** — A suite of standalone scientific tools available at any time, including:
  - Scientific calculator with expression history
  - Unit converter (length, mass, temperature, volume, speed, energy, pressure)
  - Interactive graphing tool for plotting functions
  - Statistics calculator (mean, median, mode, standard deviation, quartiles, histograms)
  - Matrix calculator (up to 5×5; addition, multiplication, determinant, inverse, RREF)
  - Equation solver (linear, quadratic, cubic, and systems of equations)
  - Periodic table with detailed element information
  - Formula reference library (physics, chemistry, mathematics)

  - Constants and data tables (35+ physical, mathematical, and chemistry constants)
  - Flashcard system with spaced repetition for study

- **Study Timer** — A Pomodoro-style study timer with configurable work/break intervals and session history to help you manage your study time effectively.
- **Progress Tracking** — Visual tracking of your concept mastery across all 12 weeks, so you can see what you've learned and what needs more attention.
- **Accessibility** — Adjustable font sizes, dark/light mode, 12 colour themes, and a Reduce Animations setting for comfortable learning.

AI Tutor Backend Options

The SciQuant app supports three AI tutor backends. You can switch between them at any time via `Settings` → `AI Backend` in the app, where you will also find setup instructions for each option.

1. **Claude AI (Anthropic)** — This is the highest-quality option. Claude is a state-of-the-art large language model that provides nuanced, context-aware tutoring tailored to your exact position in the course material, your scientific discipline, and your mathematical comfort level. It requires a paid API key from Anthropic. The app includes step-by-step instructions (under `Settings` → `AI Backend` → `Claude API`) on how to create an Anthropic account and obtain your API key. A small amount of API credit (approximately $5–10) is typically sufficient for an entire semester of regular use.
2. **Hosted Cloud Service (SCIE1500)** — A cloud-hosted AI tutor service provided specifically for this unit. Like Claude, it offers high-quality, context-aware responses that take into account your current lesson, practice question, or lab exercise. The hosted service is available **during scheduled lab sessions** unless otherwise announced via the LMS. This option requires no additional accounts or API keys—simply select it in the app and it will connect automatically when the service is running.
3. **Local AI via Ollama (Offline)** — For students who want an AI tutor that works entirely offline, the app supports running a local AI model on your own computer using Ollama. This option does not require an internet connection once set up, making it useful for studying without network access. However, the quality of responses from local models is generally lower than Claude or the hosted service, as local models have smaller context windows and less sophisticated reasoning. Setup requires installing the free Ollama application and downloading a model; the app provides detailed instructions under `Settings` → `AI Backend` → `Ollama (Local)`.

Recommendation: For the best learning experience, use **Claude AI** or the **Hosted Cloud Service** whenever possible. Both provide rich, discipline-specific explanations that are aware of exactly where you are in the course. The local Ollama option is a useful fallback for offline study but offers a more basic tutoring experience.

Getting Started with SciQuant

1. **Download** the SciQuant Assistant app from the link provided in the LMS.
2. **Install** the app on your computer (macOS, Windows, or Linux are supported).
3. **Open the app** and complete the onboarding process—set your name, choose your scientific discipline, and indicate your current maths comfort level. **Privacy note:** The app does not collect or store any private student data externally. The "name" and "student number" you enter during onboarding are stored only on your own device and are used solely within the app (e.g. for the AI tutor to address you by name). You do not need to use your real name or UWA student number—you may choose any name you would like the AI tutor to use.

4. **Obtain a licence**: Navigate to `Settings` → `About` in the app to find your **Hardware ID**. Email your Hardware ID to the unit coordinator (atakelty.hailu@uwa.edu.au) to receive a licence key.

5. **Activate**: Enter the licence key in the app when prompted to unlock all features.

6. **Start learning**: Navigate to the weekly content from the home screen and begin working through the lessons, practice questions, and lab exercises for each week.

Important: The SciQuant app is the central hub for your learning in this unit. All weekly lessons, practice materials, and lab activities are accessed through the app. Make sure to install and activate it in the first week of semester.

Note on assessments and the LMS: While all learning content is delivered through the SciQuant app, all **assignment submissions, grading, and official record keeping** will take place through UWA's Learning Management System (LMS). You must submit your assignments and lab work via the LMS, and your grades will be recorded there. The SciQuant app is your learning tool; the LMS remains the official platform for all assessment-related activities.

Important Dates — Semester 1, 2026

Event	Date
Orientation	16–20 February
Teaching Period Begins	23 February
Last Date to Add a Unit	28 February
Labour Day (public holiday)	2 March (Monday)
Census Date (last day to withdraw without financial penalty)	31 March
Good Friday & Easter Monday	3 April & 6 April
Mid-Semester Break	6–10 April
Academic Withdrawal Date (last day to withdraw without academic penalty)	10 April
Anzac Day (observed, public holiday)	27 April (Monday)
Teaching Period Ends	22 May
Western Australia Day (public holiday)	1 June
Examination Period	30 May – 13 June
Results Released	3 July

Note: Monday lab sessions will be affected by Labour Day (2 March, Week 2) and Anzac Day (27 April, Week 9). Dr. Luke Morgan will organise make-up sessions for students enrolled in the Monday labs during those weeks. Details of the make-up sessions (dates, times, and venues) will be announced through the LMS.

Lab Sessions — Semester 1, 2026

Labs run during teaching weeks 1–6 and 7–12 (i.e. calendar weeks 9–14 and 16–21), with no labs during the mid-semester break (6–10 April). Each student attends **one** 2-hour lab session per week.

Day & Time	Venue	Campus	Lab Instructor
Monday 10:00am–12:00pm	ENCM: [207A]	Crawley	Dr. Luke Morgan
Monday 2:00–4:00pm	ENCM: [207A]	Crawley	Dr. Luke Morgan
Wednesday 1:00–3:00pm	ENCM: [207A]	Crawley	Yadav Padhyoti
Thursday 2:00–4:00pm	ENCM: [207A]	Crawley	Gaia Scomazzon
Wednesday 9:00–11:00am	ALBSCI: [302/303]	Albany	Peter Speldewinde

Lab Focus and Philosophy

In 2026, the lab programme has been redesigned around the theme **"From Problem to Presentation."** Rather than working through abstract textbook exercises, you will tackle *realistic scientific scenarios*—called **Problem Briefs**—that require you to formulate questions, choose mathematical methods, compute results in Python, and communicate your findings. The emphasis is on **problem formulation** and **interpretation of results**, not simply obtaining the right number. AI coding tools (ChatGPT, Claude, Copilot, etc.) may be used to assist with code, but you must be able to explain every line you submit.

Group Work and Presentations (Weeks 1–9)

In Week 1 you will be assigned to a **permanent group of 5–7 students**. Each week your group works together on that week's Problem Brief and submits a group worksheet via LMS by the end of the lab day.

From **Weeks 3 to 9**, two groups present the *previous* week's work at the start of each lab session (10 minutes per group, all members speak). Each group presents **exactly twice** during the semester. To keep presentations engaging, Problem Briefs in Weeks 2–8 come in two **variations (A and B)**: both cover the same mathematical techniques but use different real-world contexts and data, so the audience sees two distinct applications each week rather than a repeat.

Presentations are assessed on four criteria: problem formulation, mathematical approach, results and interpretation, and communication quality. The variations are of equivalent difficulty and the same rubric applies to both.

Individual responsibility: Although you work in groups, every student must upload their own copy of the completed worksheet each week via LMS. All submissions and grading are handled through LMS.

Exam Preparation Labs (Weeks 10–12)

The final three labs replace the standard Problem Brief format with activities designed to prepare you directly for the exam:

- **Week 10 — Mock Exam Workshop:** Groups work through timed Part II exam-style questions (hypothesis testing, optimisation, integration, differential equations), then present solutions on the whiteboard for class discussion.
- **Week 11 — Peer Review Exchange:** Each group *creates* a trigonometry problem for another group (involving sinusoidal modelling with real-world data), then solves the problem they receive. This counts as a double worksheet.
- **Week 12 — Gallery Walk Capstone:** Groups solve a linear programming problem, set up poster stations, and rotate through each other's stations to explain and compare solutions.

No group presentations occur in Weeks 10–12; instead, all groups participate equally in these collaborative activities.

Lab Assessment Breakdown

The lab component is worth **20% of the unit** and is divided as follows:

Component	Weight
Lab Engagement (attendance + active participation)	5%
Group Presentations ($2 \times 4\%$ each)	8%
Weekly Worksheets (best 10 of 12 counted)	7%
Total	**20%**

Lab Handbook

A comprehensive **Lab Handbook** containing all Problem Briefs, the presentation rubric, worksheet templates, and tips for success is available inside the **SciQuant Assistant** app. Refer to it each week for full task details, Python starter code, and scaffolding hints.

Unit Schedule

Dates	Topics
Orientation	**Week 0: Mathematical Foundations & Python Basics**
Feb 16–Feb 22	Review of essential mathematical concepts (number systems, BODMAS, basic algebra); introduction to Python and Jupyter Notebooks
Week 1	**Functions and the Language of Scientific Analysis**
Feb 23–Mar 1	Defining and representing functions; domain and range; linear, quadratic, and power functions; the vertical line test; function composition and inverse functions; scientific applications
Week 2	**Exponential and Logarithmic Functions**
Mar 2–Mar 8	Exponential growth and decay; Euler's number e; logarithmic functions and their properties; log rules; applications to population growth, radioactive decay, and chemical kinetics
Week 3	**Logistic Functions and Bounded Growth**
Mar 9–Mar 15	The logistic function; carrying capacity; bounded growth models; S-shaped curves; applications to population biology, disease spread, and resource-limited systems
Week 4	**Limits, Continuity, and Introduction to Derivatives**
Mar 16–Mar 22	The concept of a limit; evaluating limits; continuity; the derivative as a rate of change; the difference quotient; basic differentiation rules (power rule)
Week 5	**Differentiation Techniques and Optimisation**
Mar 23–Mar 29	Product rule, quotient rule, chain rule; higher-order derivatives; differentiation of exponential and logarithmic functions; finding maxima and minima; optimisation in scientific contexts
Week 6	**Introduction to Integration**
Mar 30–Apr 5	The anti-derivative; indefinite integrals; basic integration rules; the definite integral and the Fundamental Theorem of Calculus; area under a curve
	Mid-Semester Break (6–10 April)
Week 7	**Definite Integrals and Applications**
Apr 13–Apr 19	Integration techniques; applications of definite integrals; sequences and series (arithmetic and geometric); convergence; applications to population dynamics and the Malthusian Trap
Week 8	**Predator–Prey Dynamics and Systems**
Apr 20–Apr 26	The Lotka–Volterra model; representing predator–prey interactions; phase diagrams; steady-state analysis; oscillatory dynamics in ecology
Week 9	**Probability Foundations**
Apr 27–May 3	Sample spaces and events; properties and rules of probability; conditional probability; Bayes' theorem; tree diagrams; independent and disjoint events; applications to medical testing and diagnostics
Week 10	**Random Variables and Hypothesis Testing**
May 4–May 10	Random variables; expected value and variance; combinatorics; the binomial distribution; the normal distribution; introduction to hypothesis testing
Week 11	**Trigonometric Functions and Periodic Models**

Dates	Topics
May 11–May 17	Trigonometric ratios; the unit circle and radian measure; graphs of sine, cosine, and tangent; amplitude, period, and phase shift; applications to seasonal and periodic phenomena
Week 12	**Simultaneous Equations and Linear Programming**
May 18–May 22	Systems of linear equations; matrix methods; objective functions; inequality constraints; formulating and solving linear programming (LP) problems; sensitivity analysis

Assessment Items

The assessment for the unit includes **ongoing assessments** in the form of **lab work and participation**, **assignments**, and a **final exam**.

Final exam

The final exam is a paper-based or face-to-face exam scheduled and administered by the university during the examination period (30 May – 13 June 2026). The focus of the final exam is on the mathematical methods and science topics covered in the unit. It does not include questions about Python and does not require you to use Python. You will find a sample set of questions in the LMS.

Assignments

All assignments are to be submitted via the LMS. Assignment submissions that include shared or plagiarised material are not acceptable and will be considered as acts of academic misconduct.

Lab work and participation

See details provided above under **Lab Assessment Breakdown**.

Final unit grades

Your unit marks will be calculated using the assessment item weights shown in the table above. Marks are not final until the Board of Examiners approves them. The Board has the power to request remarking exercises in units. This does not happen often, but it is possible.

Plagiarism

All forms of cheating, plagiarism, and copying are condemned by the University as unacceptable behaviour. The University policy is to ensure that no student profits from such behaviour. All students should note that cases of copying work are automatically reported to the Dean and documentary evidence along with associated correspondence is placed on the student's permanent record. The penalties imposed for copying work are specified in the university policy and depend on: (i) whether it is a first offence or a subsequent offence; (ii) how many degree points you have completed; and (iii) the severity of the breach (there are three levels).

Use of AI

In accordance with the University Policy on Academic Integrity, the use of Artificial Intelligence (AI) is permitted as an educational/study tool. It may only be used in any assessment within a unit where approval has been granted by the unit coordinator. Improper use of AI-generated material, as set out in the Academic Integrity policy, in assessments may lead to the occurrence of academic misconduct.

Note on the SciQuant AI Tutor: The AI tutor built into the SciQuant app is specifically designed as a *learning aid*. It guides you through concepts using Socratic questioning and will not directly solve assignment or exam problems for you. Using the SciQuant AI tutor for study purposes is encouraged. However, you must not copy AI-generated content into your assignments. All submitted work must be your own.

Late submission of assignments

The penalty for submitting an assignment late is 5% per day (including weekends and public holidays). This penalty is applied from day 3, with a penalty waiver being granted for the first 2 days (including weekends and public holidays). If you submit your assignment on day 3, the 5% late penalty for the first 2 days will be applied (15% in total). If you submit your assignment later than 7 days after the due date, you will receive a mark of zero unless you have an approved EVA application.

For example, if an assignment is late by three days and was given 45 out of a possible mark of 50, you would receive a mark of 37.5 out of 50 (a mark of 2.5 is deducted per day).

Penalty for exceeding word limit

Where a submitted assignment exceeds the word limit, a penalty of 1 per cent of the total mark allocated for the assessment task applies for each 1 per cent in excess of the word limit.

Due dates

Put the following dates into your calendar.

#	Assessment	Weight	Deadline	Submission	Learning outcome
1	Assignment 1	15%	11:59pm, Wed 1 Apr	LMS/Online	all
2	Assignment 2	15%	11:59pm, Wed 13 May	LMS/Online	all
3	Final Exam	50%	See UWA Exam Schedule (30 May – 13 Jun)	face-to-face	1,2,4,5
4	Weekly participation and lab work	20%	Tue after lab week at 11:59pm, i.e. due dates are TUE Mar 3 (LAB1), Mar 10 (LAB2), Mar 17 (LAB3), Mar 24 (LAB4), Mar 31 (LAB5), Apr 14 (LAB6), Apr 21 (LAB7), Apr 28 (LAB8), May 5 (LAB9), May 12 (LAB10), May 19 (LAB11), and Jun 2 (LAB12)	LMS/Online	3,4,5

Participation

Lab attendance: Each week you are required to attend labs unless you have a UAAP that exempts you from participating in lab type activities. Come prepared to the lab sessions by working through the weekly lesson content and practice questions in the SciQuant app. Use the AI tutor to seek clarification on concepts you find challenging. In the lab, you need to get your name ticked off by your lab instructor after you have completed the exercises you are required to complete inside the lab.

Computer lab exercises: Each week there are a set of computer exercises for you to complete. To save time and effort, you should do your best to complete the exercises during your scheduled computer lab session, or in the hours following the session. Once you complete the exercises, you need to upload the requested parts of your lab work to the LMS to prove that you have completed the work. The lab instructions will be clear on what parts of the lab work you need to upload.

Lab work is due at 11:59pm on the Tuesday after the lab week. For example, the due date for lab work from the first teaching week (24–28 February) is on Tuesday 3 March at 11:59pm, etc. **Exception:** Lab 12 is due on Tuesday 2 June (first Tuesday after SWOTVAC) as assessment deadlines are not permitted during SWOTVAC. See the list of lab work due dates above.

Students should make sure that they are uploading the right file and that their submission has gone through. Do not upload Pages (Mac software) files. Upload Pages files converted into PDF. If you are using Word, convert the Word file into PDF and upload the latter. View your uploaded file in the LMS to be sure it is all as it should be.

Requirements

Texts

There is a maths textbook with exercises specially prepared for this unit. There is no single textbook for the science content. Relevant readings will be identified in the lesson content within the SciQuant app and additional resources are available in the LMS.
Links to general online maths resources are provided in the LMS (see the General Maths Resources link).

Software requirements

The unit uses Python for its lab exercises, but no prior knowledge of Python or any programming software is assumed. There will also be some use of Excel and GeoGebra (maths software). Python is chosen because it is the most popular and most versatile general-purpose programming software for scientific analysis.

SciQuant Assistant: The SciQuant app is the primary platform for accessing lesson content, practice questions, and lab materials. Download and install the app following the instructions in the "Getting Started with SciQuant" section above.

Python/Anaconda: Python will be used for lab exercises and can be accessed through UniApps. If you wish to install Python on your own laptop, we recommend **Miniconda** rather than the full Anaconda distribution—it is a smaller, faster download that includes everything you need for this unit (Python, Jupyter Notebook, and the `conda` package manager) without the many extra packages you will not use. When downloading, make sure you select the installer that matches your computer's operating system (Windows, macOS, or Linux) and processor chip (e.g. Intel/AMD vs. Apple Silicon on Mac, or 64-bit vs. ARM on Windows). Installation instructions are included in the app. It is also possible to run lab notebooks through Google Colab (Google's cloud service for Jupyter notebooks); instructions on how to do that are in the General Computational Resources section of the LMS. The SciQuant app provides direct links to open lab notebooks in both Google Colab and your local Anaconda/Miniconda installation. There will be a discussion of software-related issues in the first lab session.

Saving your work in Google Colab: When you open a lab notebook via Google Colab, you are working on a temporary copy hosted on Google's servers. **Your edits, code outputs, and notes are not saved automatically**—if you close the browser tab without saving, your work will be lost. To keep your work:

- **Save a copy in Drive** (recommended): Go to **File** → **Save a copy in Drive**. This saves the notebook to your Google Drive under a "Colab Notebooks" folder. Since UWA provides you with a Google account, this works immediately with no additional setup. You can return to your saved copy at any time from Google Drive.
- **Save a copy as a GitHub Gist**: Go to **File** → **Save a copy as a GitHub Gist**. A Gist is a lightweight way to share code snippets online. This option **requires a free GitHub account**

(https://github.com/signup). If you do not have a GitHub account, this option will prompt you to sign in or create one. Gists are useful for sharing specific exercises with classmates or instructors.

- **Download**: Go to **File** → **Download** → **Download .ipynb** to save the notebook file to your computer. You can reopen it later in Colab, Anaconda, or any Jupyter environment.

Communicating with instructors and others

Some additional points to note include:

- Students are encouraged to interact and work together inside and outside the lab sessions. However, they should prepare their answers to assignment questions independently. Copying another student's answers or parts of answers is plagiarism. Providing answers for other students is also not allowed.
- Assignments are a major assessment item in the unit. Students should refrain from posting actual answers to assignment questions in the discussion boards.
- If you have a question that you think is relevant to other students or a question that you think can be answered by fellow students, post your questions in the appropriate discussion board in the LMS.
- There are discussion boards for each of these: 1) Lab exercises; 2) Assignments; 3) Quiz-related enquiries; and 4) Science and maths material/content.
- Browse previous postings in the discussion boards before posting your question, as it is possible that someone else has already asked the same or a similar question.
- Feel free to respond to questions in the discussion boards or to provide advice if you know the answer.
- You may also use the AI tutor in the SciQuant app for immediate help with understanding concepts and working through problems.
- You can contact instructors by email to ask questions, but limit such questions to those that are not appropriate for the discussion boards.
- When emailing instructors, please put 'SCIE1500:' as the first word in the subject heading.
- Use descriptive headings for your postings in the discussion boards.
- All queries about special considerations, UAAPs, or requests for extensions should be directed to the unit coordinator (Atakelty) and not posted on the discussion boards.

Teaching and Learning Strategy

For a successful learning experience:

- Make effective use of the SciQuant app—work through each week's lesson content and practice questions before your lab session;
- Use the AI tutor in the SciQuant app to clarify concepts you find challenging;
- Come prepared to lab sessions by completing all required prior reading and preparation in the app;
- Do ALL lab activities and any practice or homework exercises provided for the week;
- Participate in discussions during the lab and through the online discussion boards;
- Seek help by posting questions online in the discussion board, using the AI tutor, or by visiting instructors; and
- Invest in software skills early on so that you can enjoy the benefits throughout the semester.

Lecture Content

All lecture content is delivered through the SciQuant Assistant app as interactive lessons. Each week, a new lesson becomes available covering the relevant mathematical methods and their scientific applications. Lessons include rendered mathematical equations, diagrams, worked examples, and practice questions. Students should work through the week's lesson in the app before attending their lab session.

Other

Exceptional Variation of Assessment (EVA)

The University recognises that there may be occasions where a student experiences exceptional circumstances beyond their control that may prevent them from performing to their ability in assessments. Exceptional Variation of Assessment (EVA) is a mechanism that allows managing such disruptions that may have adversely affected a student's academic performance or progression in a unit or in a course. Examples of eligible circumstances are:

- Short-term health condition or exacerbation of ongoing condition
- Hardship or trauma
- Unavoidable commitments
- Elite athletes / coaches or Performers
- Bereavement

The full policy and information on applying for EVA is available through the link here.

Let your unit coordinator know when you have received an extension or exemption (EVA) for an assessment.

Academic and Wellbeing Support

Information on academic and wellbeing support for students is available here.

UAAP

If you have an Academic Adjustment Plan (UAAP) in place from UniAccess, you may be entitled to extra time for online assessments—email the Unit Coordinator in accordance with your UAAP to let them know. You may also be entitled to extended deadlines for your assignments. For extensions to assignment deadlines, you have to send the unit coordinator an email indicating that you intend to use the allowed extension.

Academic conduct

Academic Integrity is defined in the University Policy on Academic Conduct as acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. UWA expects the highest degree of academic conduct from all students.

Penalties for breach of academic conduct vary according to the seriousness of the case, and may include the requirement to do further work or repeat work; deduction of marks; the award of zero marks for the assessment; failure of one or more units; suspension from a course of study; exclusion from the University; non-conferral of a degree, diploma or other award to which the student would otherwise have been entitled.

Be aware of possible browser issues

Students writing practice quizzes on the LMS have faced browser-related problems (e.g. they cannot see an image included in an online quiz). Follow any advice provided by University IT in relation to preferred browsers. For example, Firefox or Chrome might work better than some other browsers.