

Course Title:	Linear Partial Differential Equations
Course Code:	MATH704
Descriptor Start Date:	03/03/2023
Descriptor End Date:	30/01/2025
POINTS:	15.00
LEVEL:	7
PREREQUISITE/S:	MATH602, MATH603
COREQUISITE/S:	None
RESTRICTION/S:	None

LEARNING HOURS

Hours may include lectures, tutorials, online forums, laboratories. Refer to your timetable and course information in Canvas for detailed information.

Total learning hours: 150

PRESCRIPTOR

Investigates linear partial differential equations in one, two, and three dimensions, including analytic techniques for solving partial differential equations and their applications.

LEARNING OUTCOMES

1. Employ a variety of advanced techniques to solve typical partial differential equations.
2. Apply linear partial differential equations to solve application problems.
3. Use linear partial differential equations to model physical and engineering situations

CONTENT

- Separation of variables
- Heat equation
- Wave equation
- Laplace's equation
- Nonhomogeneous problems
- D'Alembert's method
- Fourier series method
- Sturm-Liouville theory
- Integral transforms

Disclaimer: Course descriptors may be amended between teaching periods/semesters

LEARNING & TEACHING STRATEGIES

Lectures, tutorial classes, assignments.

ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Assignment 1	30.00	1,2,3
Assignment 2	30.00	1,2,3
Problem Solving Questionnaire	40.00	1,2,3

Grade Map

MAP1

A+ A A- Pass with Distinction

B+ B B- Pass with Merit

C+ C C- Pass

D Fail

Overall requirement/s to pass the course:

A minimum grade of C- (50%) overall.

LEARNING RESOURCES

Matthew P. Coleman, An introduction to partial differential equations with MATLAB, Chapman & Hall/Crc.

For further information, contact: Te Ara Auaha - Faculty of Design & Creative Technologies

Principal Programme: DJ1041, Bachelor of Science

Related Programme/s: AK1042
AK1043
AK3001

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