MATH1061/7861 CALENDAR 2023

Week	LECTURE Number	DATE	Pre-Video	TOPIC
W1	Lec 1	LA Tue 21 Feb		Course Introduction
	Lec 2	LB Frid 24 Feb	**Video 001:** Logical Form. **Video 002:** Logical Equivalence	Logical form, Logical equivalence
	Lec 3	LC Frid 24 Feb	**Video 003:** Conditional Statements	Conditional statements
W2	Lec 4	LA Tues 28 Feb	**Video 004:** Valid and Invalid Arguments, **Video 005:** Methods for Determining Validity	Valid / invalid arguments, methods for determining validity
	Lec 5	LB Frid 3 March	**Video 006:** Quantified statements	Methods for determining validity (con't), quantified statements
	Lec 6	LC Frid 3 March	**Video 007:** Negation of Quantified Statements. **Video 008:** Statements with Multiple Quantifiers	Negations of quantified statements, statements with multiple quantifiers
		Tutorial sheet 2: Logical form, Logical equivalence, Conditional statements		
W3		**Assignment 1 available on Blackboard**		
	Lec 7	LA Tue 7 March	**Video 009:** Direct proofs and counterexamples	Direct proofs and counterexamples
	Lec 8	LB Frid 10 March	**Video 010:** Proof by contradiction	Proof by contradiction, proofs with even and odd numbers
	Lec 9	LC Fri 10 March	**Video 011:** Proof by Contraposition **Video 012:** Rational Numbers	Proof by contraposition, rational numbers
		Tutorial sheet 3: Valid / invalid arguments, Methods for determining validity, Negations of quantified statements, Statements with multiple quantifiers		
W4	Lec 10	LA Tue 14 March	**Video 013:** Divisibility	Divisibility, prime factorisation
	Lec 11	LB Fri 17 March	**Video 014:** Modular Arithmetic	Modular arithmetic, floor and ceiling
	Lec 12	LC Fri 17 March	**Video 015:** The Euclidean Algorithm	The Euclidean algorithm
		Tutorial sheet 4: Direct proofs and counterexamples, Proof by contradiction, proofs with even and odd numbers, Proof by contraposition, rational numbers		
W5		**Assignment 1 due on MONDAY 20 March 4pm (topics from lec 2-6)**		

		Assignment 2 available on Blackboard		
	Lec 13	LA Tue 21 March	**Video 016:** Sequences. **Video 017:** Mathematical Induction	Sequences, Mathematical induction
	Lec 14	LB Fri 24 March	**Video 018:** Strong Mathematical Induction and the Well-Ordering Principle	Strong induction and the well-ordering principle
	Lec 15	LC Fri 24 March	**Video 019:** Recursive Definitions	Recursive definitions
		Tutorial sheet 5: Divisibility, prime factorisation, Modular arithmetic, floor and ceiling		
W6	Lec 16	LA Tue 28 March	**Video 020:** Solving Recurrence Relations.	Solving recurrence relations
	Lec 17	LB Fri 31 March	**Video 021:** Set Theory definitions **Video 022:** More definitions and examples of sets	Set theory definitions and examples
	Lec 18	LC Fri 31 March	**Video 023:** Properties of sets **Video 024:** Functions defined on general sets	Properties of sets, Functions defined on general sets
		Tutorial sheet 6: Euclidean algorithm, Sequences, Mathematical induction, Strong induction and the well-ordering principle		
W7		**Assignment 2 due on Monday 3 April 4pm (topics from lec 7-15)**		
	Lec 19	LA Tue 4 April	**Video 25:** One-to-one, Onto, and Inverse Functions	One-to-one, Onto, and Inverse Functions
	PH	Frid 7 April	Good Friday, no Lec	Public Holiday
	PH	Frid 7 April	Good Friday, no Lec	Public Holiday
		Tutorial sheet 7: Recursive definitions, Solving recurrence relations		
break	MSB	Tue 11 April	No Lec	Mid sem break
	MSB	Frid 14 April	No Lec	Mid sem break
	MSB	Frid 14 April	No Lec	Mid sem break

DIANE TAKES OVER LECTURES				
Week		**DATE, LECTURE Number**	**Pre Video**	**TOPIC**
W8		**Assignment 3 available on Blackboard**		
	Lec 20	LA Tue 18 April	**Video 026:** Composition of Functions	Composition of Functions
	Lec 21	LB Frid 21 April	**Video 027:** Cardinalities	Cardinalities
	Lec 22	LC Frid 21 April	**Video 028:** Countable and Uncountable Sets	Countable and uncountable sets
		Tutorial sheet 8: Set theory definitions and examples, Properties of sets, Functions defined on general sets		
W9	PH	Tue 25 April	Anzac Day no Lec	Public Holiday
	Lec 23	LB Frid 28 April	**Video 029:** Relations on Sets **Video 030:** Reflexivity, Symmetry and Transitivity	Relations on sets, Reflexivity, Symmetry and Transitivity
	Lec 24	LC Frid 28 April	**Video 031:** Equivalence Relations	Equivalence Relations
		Tutorial sheet 9: One-to-one, Onto, Inverse and Compositions Functions, Cardinalities, Countable and uncountable sets		
W10		**Assignment 3 due on Tuesday 2 May 4pm (topics from lec 16-22)**		
	Lec 25	LA Tue 2 May	**Video 032:** Partial Order Relations	Partial Order Relations
	Lec 26	LB Frid 5 May	**Video 033:** Definitions and Examples of Groups	Definitions and examples of groups
	Lec 27	LC Frid 5 May	**Video 034:** Elementary Properties of Groups **Video 035:** Group Isomorphisms	Elementary properties of groups Group isomorphisms
		Tutorial sheet 10: Relations on sets, Reflexivity, Symmetry and Transitivity, Equivalence Relations		
W11		**Assignment 4 available on Blackboard**		
	Lec 28	LA Tue 9 May, L26	**Video 036:** Definitions and Examples of Fields	Definitions and examples of fields
	Lec 29	LB Frid 12 May	**Video 037:** Introduction to Counting	Introduction to counting
	Lec 30	LC Fri 12 May	**Video 038:** Counting Selections	Counting selections
		Tutorial sheet 11: Partial Order Relations, Definitions and examples of groups, Elementary properties of groups, Group isomorphisms		
W12	Lec 31	LA Tue 16 May	**Video 039:** Introduction to Probability	Introduction to probability

	Lec 32	LB Frid 19 May	**Video 040:** Binomial Coefficients	Binomial Coefficients
	Lec 33	LC Frid 19 May	**Video 041:** Inclusion Exclusion **Video 042:** The Pigeonhole Principle	Inclusion/Exclusion Pigeonhole principle,
		Tutorial sheet 12: Group isomorphisms, Fields		
W13		**Assignment 4 due on Monday 22 May 4pm (topics from lec 23-30)**		
	Lec 34	LA Tue 23 May	**Video 043:** Introduction to Graph Theory	Introduction to graph theory
	Lec 35	LB Frid 26 May	**Video 044:** Walks, Trails and Circuits	Walks, trails and circuits
	Lec 36	LC Frid 26 May	**Video 045:** Matrix Representations of Graphs **Video 046:** Trees	Matrix representations of graphs, Trees
		Tutorial sheet 13: Introduction to counting, Introduction to probability, Binomial Coefficients, Introduction to graph theory, Walks, trails and circuits, Matrix representations of graphs, Trees		