EE1G1 INTRODUCTION TO ELECTRICAL ENGINEERING WEEKLY OVERVIEW 2024-2025

	Monday: **Integrated Math (IM)** **by PRIME**	**Tuesday:** **EE1G1 Lecture** **by Dr. İlke Ercan and Guests**	**Wednesday:** **Hybrid Python Lectures** **by Dr. Bahareh Abdi**	**Thursday:** **Mentorship** **by Student Mentors *et al.***	**Friday:** **IM Refresh** **by PRIME**
Week 1.1	Linear systems and echelon forms: Linear systems, Augmented matrix, Solving linear systems, (Reduced) echelon forms + Grasple Assignment	Introduction to EE: Subfields of EE, EE at the TU Delft Personal takes on EE (w/student guests) + Math Self Reflection Test	Introduction to programming and Python, Algorithmic thinking, Introduction to Colab, Variable + Python Assignment	Introductions, Team building, and value gathering and assignment support	Limits, Continuity and Horizontal asymptotes
Week 1.2	Limits and continuity - computations: Limits, Continuity, Horizontal asymptotes + Grasple Assignment	Introduction to Scientific Programming: From early applications to modern languages (w/ Dr. Bahareh Abdi) + Lecture 1.2 Assignment (python)	Operators, Lists and Commenting in Python + Python Assignment	Codes of Conduct: Academic and Social Code of Conduct and assignment support + Assignment (Sign Academic and Social Code of Conduct)	The derivative as a limit, Standard derivatives and computation rules, Tangent line an Differentiability
Week 1.3	Linearization and extreme values: Linearization, Extreme values, First and second derivative test + Grasple Assignment	Inspirational Guest Lecture on Solar Energy (Electrical Sustainable Energy) (by Dr. Robin Vismara) + Lecture 1.3 Assignment (python)	If statements and Loops + Python Assignment	Study skills and assignment support	Definite integral, Computation rules and Evaluating integrals
Week 1.4	Fundamental theorem of calculus and integration by parts: Piecewise continuous functions, Integration by parts + Grasple Assignment	Mathematical applications of circuit theory using Python + Lecture 1.4 Assignment (python)	Functions, bugs and debugging in Python + Python Assignment	Exam preparation	
Week 1.5	Exam Week				

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Week 1.6	Complex numbers 1: Definition of complex numbers, Arithmetics, Quadratic equations, Complex plane, Polar form + Grasple Assignment	Inspirational Guest Lecture on Bioelectronics and Health Applications (by Dr. Dante Muratore) + Lecture 1.6 Assignment (SystemVerilog FSM)	Modules and Libraries, Organizing your code and 2D plotting + Python Assignment	Exam reflections, student health and wellbeing, team bonding and assignment support	
Week 1.7	Complex numbers 2: Complex exponential function, Roots of (complex) numbers, Sinusoids, Fundamental theorem of algebra + Grasple Assignment	Engineering Ethics: Using AI/chatGPT in engineering, IEEE and NSPE standards (w/ Dr. Steffen Steinert) + Lecture 1.7 Ethics Assignment	Introduction to NumPy, NumPy Arrays, Array Operation + Python Assignment	Ethical implications of EE: role playing and assignment support	
Week 1.8	Differential Equations: Differential equations, Initial-value problems, Direction fields, Equilibrium solutions, Solving first-order DEs with constant coefficients + Grasple Assignment + In-person python assignment (WebLab Drebbelweg PC Hall 1)	Inspirational Guest Lecture on Superconducting Technologies in Quantum Computing (by Dr. Fabio Sebastiano) and in Astronomy (by Dr. Akira Endo) + Lecture 1.8 Assignment (python)		Study skills revisted and assignment support	
Week 1.9	Second order, linear differential equations: Linearly independent solutions, Characteristic equation, Nonhomogeneous equations + Grasple Assignment	EE networks: local and professional EE associations and opportunites for enhancing your career (w/ student guests)		Exam preparation	
Week 1.10	Exam Week				