

Featured Departments:

Mechanical and Mechatronics Engineering
Engineering Science and Biomedical Engineering
Chemical and Materials Engineering
Civil and Environmental Engineering
Electrical, Computer, and Software Engineering



Kia ora kou tou.

It is my pleasure and privilege to welcome you to our 2025 Final Year Project Display Day.

The Final Year Project represents a significant milestone in our Bachelor of Engineering degree. These yearlong research projects draw upon the knowledge and expertise that the students have attained during their degree, applied to solve real-world problems. The Final Year Project Display Day is always an exciting time to see engineering theory come to life.

The projects provide an important opportunity for students to realise their capacity and build confidence in their skills as independent learners. We put a strong emphasis on getting our students career-ready once they graduate, so it is great to see the range of industry sponsors who continue to get involved with the projects each year.

I hope you will join us in proudly celebrating everything that our students have achieved this year.



ASSOCIATE PROFESSOR RICHARD CLARKE Manukura Auaha | Dean of Engineering and Design Waipapa Taumata Rau | University of Auckland



About the Final Year Project



The Final Year Project, formerly recognised as the Part IV Research Project, is a compulsory unit of our Bachelor of Engineering (Honours) degree. This involves final year Engineering students spending the bulk of the year — usually in pairs on a research project supervised by engineering academics. This degree component requires the submission of a research portfolio that includes a final report, a conference presentation, and technical demonstrations. In essence, it assesses a student's ability to utilise their knowledge of both theory and practice.

A variety of topics will be showcased by each department, and in some cases, a student's project may entail solving a real problem proposed by an engineering company. Because these projects are considered as learning experiences to encourage students to tackle problems the same way engineers do in their professional career, we encourage as much industry participation as possible.

We ensure that this is the case by inviting industry professionals each year, not just as sponsors and cosupervisors, but also to review and judge the projects. Prizes are also awarded to outstanding projects of each department.

The practical demo and display/ exhibition component of the Final Year Project is what you will be seeing today.

Engineering departments featured at today's event in the order of floor level:

- Mechanical and Mechatronics Engineering
- Engineering Science and Biomedical Engineering
- · Chemical and Materials Engineering
- Civil and Environmental Engineering
- Electrical, Computer, and Software Engineering

Mechanical and Mechatronics Engineering: Level 2

Acoustics

Booth No.	Project ID	Title
1	11	Predicting speech communication inequity in our learning spaces
2	12	Improving accuracy of acoustic virtual reality for replicating speech perception in real world
3	35	Capturing speech audibility in classrooms through machine learning techniques
4	36	Improving music listening for those with hearing impairment using machine learning
5	38	An e-textile based wearable musical instrument for sonic interaction design
6	46	Sound absorption of porous asphalt road surfaces
7	51	Bringing metamaterials into homes: Subjective testing of metamaterial systems
8	23	Deployable Helicoid Antenna for Nanosats (pre-allocated)
9	13	Let drones speak clearly - improving intelligibility of speech played from drones
10	14	Let drones hear clearly - optimising microphone array for enhancing audio recording quality from drones
11	50	Musical Acoustics: The Ultimate Instrument Microphone
12	34	Multi-modal sensory tool development with e-textiles and digital craft
13	37	Real-time transcriber glasses for the hearing impaired

Aero-Fluid-Hydrodynamics

Booth No.	Project ID	Title
14	15	[Preallocated] Frisbee aerodynamics
15	16	[Preallocated/Cross-departmental EngSci] Aerofoil optimisation for low Reynolds number aerodynamics
16	18	Understanding Riverbed Hydrodynamics: CFD and Water-Flume Investigations of Porous Media Effects on Turbulent Flow
17	31	Aerodynamic Interaction of AC40 Yachts in Race Conditions
18	43	Cycling aerodynamics: effect of turbulence on skin-suit aerodynamic performance
19	44	On-bike air velocity measurement device development (with Cycling New Zealand)
20	45	Aerodynamic optimisation of a state-of-the-art VTOL system
21	108	Blown away: Bus wakes vs Bystanders
22	53	Tidal energy for powering New Zealand aquafarms
23	56	Anti-gravity phenomena under action of high-frequency vibrations

Supervisor	Students
Yusuke Hioka	An Le (ale894), Victoria Isabella Reyes (vrey355)
Yusuke Hioka	Hamish MacGibbon (hmac000), Nicole Muir (nmui629)
Justine Hui	Hugo Doughty (hdou141), James Ochtman-Corfe (joch423)
Justine Hui	Matthew Chandler (mcha916), Jonathon Vroegop (jvro723)
Justine Hui	Jinsol Hong (jhon302), John Yang (syan575)
Michael Kingan	Eric Park (epar324), Nathan Pereira (nper812)
Andrew Hall	Abdul Wasay Bhatti (abha515), Cory Browne (cbro970)
Guglielmo Aglietti	Evita Land (elan654), Hannah Waller (hwal810)
Yusuke Hioka	Kevin Shi (zshi950)
Yusuke Hioka	Rad Atienza (rati168), Josh Daken (jdak197)
Andrew Hall	Jon Johnson (jjoh386), Matthew Thorn (mtho539)
Justine Hui	Coco Chen (cche590), Shaun Cole-Baker (scol592)
Justine Hui	Harper Lass (hlas140), Khaghan Worsnop Anderson (kwor256)

Supervisor	Students
Michael MacDonald	Sam Huddart (shud653), Leonie Stauder (Ista245)
Michael MacDonald	Joshua Carvajal (jcar457), Heath Spicer (hspi730)
Michael MacDonald	Rishank Arora (raro927), Matthew Leith (mlei947)
Stuart Norris	Nicholas Frewin (nfre696), Hamish McLaren (hmcl104)
Michael Kingan	Stein Mandjes (sman821), Hannah Tomlinson (htom376)
Michael Kingan	Benedictus Anindityo (bani991), Hadrian Weatherall (hwea404)
Michael Kingan	Ben Schoeman (bsch478), Benjamin Wilson (bwil199)
Nicholas Kay	Leo Poliko (Ipol945), Carlos Rojas (croj656)
Vladislav Sorokin	Haz Case (hcas166), Luke Vopel (Ivop935)
Vladislav Sorokin	Patrick Eir (peir231), James Heuthorst (jheu165)

Booth No.	Project ID	Title
24	66	Design and Experiment of an Adaptive Darrieus-Savonius Hybrid Blade for Vertical Axis Wind Turbines
25	54	Sensors and telemetry for a wave energy device
26	55	Self-powered acoustic device for offshore applications
27	68	Investigation of Drag Reduction Systems on Electric FSAE Vehicles
28	17	Optimal cup lip design for cleanly pouring liquids

Biomechatronics

Booth No.	Project ID	Title
29	61	Repair my iHunch! Design and control of a pneumatic medical device for spinal mobilization
30	89	Tactile texture perception studied with 3D printing
31	26	A systematic review and development of bioimaging systems for cancer research
32	71	In Vitro Soft-robotic Testing of Intragastric Balloons
33	72	Digital Twin-Based Sensing and Control System for a Soft Gastric Actuator
34	88	Machine-learning to understand the visibility of cyclists
35	25	A systematic review and development of sensors network for biomedical applications (Preallocated)
36	90	Microcontroller-based LED device to measure visual sensitivity to small changes in light intensity
37	2	Tactile processing of form and motion on the fingertip: Device and experimental design [Preallocated]
38	3	Real-time clinical monitoring with the Atmel SAM3X8E ARM Cortex-M3 [Preallocated]
39	62	GenAl chat to build a real-time 'digital twin' of surgical patients throughout their care journey
40	63	Building 'causal Al' models to optimise personalised healthcare

Design & Systems Engineering

Booth No.	Project ID	Title
41	10	Can Engineering belong in the world of art?
42	41	Maori and Pasifika Engineering Design
43	47	Hold Down and Release Mechanism [preallocated]
44	24	Additive Manufacturing selection filter app
45	86	3D printed aerospike rocket nozzles
46	64	Al 'digital stylist' for promoting NZ fashion and sustainability
47	107	Blood, Sweat and Solutions: Achieving Period Equity at UoA

	Supervisor	Students
L	Lihua Tang	Luka Borland-Lye (Ibor456), Anastasia Mulcahy (amul898)
\	Vladislav Sorokin	Toby Hutcheson (thut228), Bede Mitchell (bmit575)
\	Vladislav Sorokin	John Chen (sche889), Zane Morris (zmor550)
	Daniel De Mel	Alex McGivern (amcg964), Hamza Sheira (hshe607)
N	Michael MacDonald	Doug Sparks (dspa715), Benjamin Taylor (btay539)

Supervisor	Students
Andrew McDaid	Hannah Jamieson (hjam725), Akshima Marwah (amar686)
Luke Hallum	Jayson Lacadin (jlac176), Jenned Dean Lomboy (jlom736)
Maran MM	Yulong Liu (yliu607), Bilal Memon (bmem662)
Peter Xu	Monisha Kannan (mkan207), Tamara Land (tlan145)
Peter Xu	Leo Sbai (Isba911), Jason Sue (jsue777)
Luke Hallum	David Kung (dkun736), Finian Orr (forr815)
Maran MM	Yuchun Jiao (jjia775)
Luke Hallum	Sequoia Osborne (sosb464), Nalini Sun (nsun051)
Luke Hallum	Caleb Mackle (cmac558), Caleb Wedgwood (cwed105)
Luke Hallum	Tiger Fong-Fitzpatrick (tfon095), Daniel Sengers (dsen440)
Andrew McDaid	Orton Chung (ochu377), Upinder Johal (ujoh041)
Andrew McDaid	Mark Charlton (mcha603), Alex Sit (asit048)

Supervisor	Students
Olaf Diegel	Micah Hasselbach (mhas697), Brampreet Singh Khaira (bkha758)
Stephen Kavermann	Rokko Lassey (rlas885), Dominic Swann (dswa069)
Guglielmo Aglietti	Marcus Bycroft (mbyc339), Liam Knight (lkni810)
Olaf Diegel	Felix Clark (fcla735), Jasper Koid (jkoi952)
Olaf Diegel	James Gray (Icar392), Andre Ramljak (aram319)
Andrew McDaid	Joshua Ovely (jove751)
Justine Hui	Camerin Boyes (cboy574), Lujane Shabbir (Isha772)

Booth No.	Project ID	Title
48	42	Medical Device Design for Women's health by Women
49	85	Development and Qualification of a Power System for an Integrated Cubesat Platform [CDP]

Drone Technology

Booth No.	Project ID	Title
50	19	Passively Deforming Wings for UAV Gust Rejection
51	20	Impact of surrounding structures on coaxial rotor thrust
52	21	Low-Cost UAV-based Wind Sensing
53	39	Mechanism Development and Low-Level Control for Aerial Weed Cutting
54	40	Machine Learning for Perception and Autonomy for Aerial Weed Cutting

Dynamics and Control

Booth No.	Project ID	Title
55	52	Water Motion Energy Harvesters: Mapping NZ's geographical features and optimizing designs
56	73	CDP - Hydraulic Shock Absorption in Dams and Spillways
57	74	Vibration and Sound Attenuation Using Metamaterials through Machine Learning-Enabled Design
58	4	Energy Harvesting Backpack
59	8	Energy harvesting from human traffic
60	67	Investigation of Regenerative Braking Usage in Torque Vectoring FSAE Vehicles
61	69	Upgrading Tachometer Calibration System
62	80	Does Generative AI "Understand" Threshold Concepts in Engineering?
63	97	Low cost track friction measurement methods for FSAE
64	9	Harvesting energy from the ocean using triboelectric

Industry 4.0 Smart Manufacturing Systems

Booth No.	Project ID	Title
65	27	Smart Factory Interconnectivity with Industry 4.0 Technologies
66	48	Cloud-based Machining via OPC UA
67	76	WeldWatch: Real-Time Quality Monitoring for Legacy Welding Machines
68	77	SmartLog Navigator: Revolutionizing Log Transportation at SEQUAL
69	95	Bridging the Gap: Enabling Cognitive Digital Twins with Generative AI for Automatic Process Understanding

Supervisor	Students	
Stephen Kavermann	Celeste Allan (call416), Jessamyn Freyberg (jfre568)	
Benjamin Taylor	Anthony Atia (aati106)	

Supervisor	Students
Nicholas Kay	Manusha Kariyawasam (mkar102), Alvin Lee (alee585)
Nicholas Kay	David de Vaal (ddev582), Cooper Hart (char458)
Nicholas Kay	Matt Crosby (mcro307), Logan Teirney (Itei471)
Karl Stol	Ben Murray (bmur430), Ryan Townsend (rtow291)
Karl Stol	Ivan Hsu (ihsu296), Matthew Potter (mpot192)

Supervisor	Students
Andrew Hall	Nerissa Eddy (nedd598), Niels Grosmann (ngro887)
Lihua Tang	Travis Gower (tgow829)
Lihua Tang	Zongxi Li (zli150), Jayden Sin (jsin587)
Lihua Tang	Eros Knight (jkni370), Chloe Wright (cwri387)
Kean Aw	Clayton Wake (cwak916), Gabriel Yap (gyap609)
Daniel De Mel	Vincent Bailie (vbai808), Macgregor Jones (mjon396)
Peter Xu	Camilla Dominique Hilario (chil939), Prakhya Mathur (pmat659)
Hazim Namik	Xingjian Sun (xsun322), Dave Walton (dwal914)
Daniel De Mel	Jean Du Plessis (jdup494), Chris Pen (kpen526)
Kean Aw	Caleb Megchelse (cmeg058), Ben Plesner (bple181)

Supervisor	Students
Xun Xu	Benjamin Mueggenburg (bmue669), Zac Perkin (zper240)
Xun Xu	Shivam Sharma (shsa784), Youngsung Song (yson942)
Jan Polzer	Corey Davey (cdav498), Tane Mather (tmat537)
Jan Polzer	Ronak Lal (rlal223), Kieran Munro (kmun542)
Jan Polzer	Ashni Cumarasundaram (acmu767), Ashlen Kaur (akau519)

Mechanics of Materials and Manufacturing Processes

Booth No.	Project ID	Title
70	49	The Influence of Defects on the Compressive Failure of Thickness Carbon Fibre Composites.
71	65	Assessment and performance of CFRP torsional structures in an FSAE setting
72	81	Development of basalt fibre-reinforced biopolymer composite materials
73	82	Production of waste Low density polyethylene (LDPE)-sand composite bricks
74	83	Development of Sandwich Panels Made of Discarded Bottle Caps Core and Polypropylene or Aluminium Skins
75	84	Improving the performance of rotomoulded products through reinforcement
76	94	Fire-resistant Building Panels; Manufacturing and Characterisation of High-Performance Sustainable Composites
77	98	Stretchable and flexible biocarbon-based strain sensors for human motion monitoring or robotic applications
78	99	Composites manufacture from waste polymer blend and halloysite with plasma jet modification
79	100	Manufacturing and Characterisation of Extruded Microfibrillar Composite Films
80	101	Recycling Polypropylene/Thermoplastic Polyurethane Syringes, Sharps Pail, and Sterile Wrap
81	103	Engineering High Performance Recycled PET/PP Blends
82	104	Industrial design and process optimisation of short fibre-reinforced waste thermoplastic composites manufactured with novel plasma treatments
83	105	Developing high performance Glass Fibre-Filled Thermoplastic Composites from Recycled Plastics
84	106	Innovative Recycling of Nitrile Gloves and HIPS for a Sustainable Future
85	96	Suspension instrumentation on torque vectoring FSAE cars for load case refinement
86	6	Smart Leaf

Robotics

Booth No.	Project ID	Title
87	28	Reinforcement Learning Control of a Multi-Fingered Robotic Manipulator
88	29	Reinforcement Learning based Navigation for Autonomous Drones
89	70	Evaluation of Vision-Language-Action Models for Robot Skill Learning in Product Assembly Tasks - Pilot Study B
90	79	Mitigating the Effects of Backlash on Localisation and Position Control
91	91	Intuitive Human-Robot Collaborative Assembly
92	92	Evaluation of Vision-Language-Action Models for Robot Skill Learning in Product Assembly Tasks - Pilot Study A
93	93	Autonomous mobile manipulator

Supervisor	Students
Tom Allen	Grace Li (gli879), Veronique Simmonds (vsim962)
Tom Allen	Daniel Hall (dhal592), Vraj Sheth (vshe779)
Krishnan Jayaraman	Ronan Doran (rdor864), Glen Smith (sgle239)
Krishnan Jayaraman	Joshua Anderson (jand435), Nathan Smith (nsmi265)
Krishnan Jayaraman	Liam Devaroyan (Idev977), Lucy Lea (Ilea551)
Krishnan Jayaraman	Liam Aylward (layl021), Jacob Beard (jbea641)
Nam Kyeun Kim	Vivek Patel (vpat454), Parul Sharma (psha951)
Arcot Somashekar	William Dawson (wdaw282), Ben McCarthny (bmcc168)
Arcot Somashekar	Ben Kestle (bkes910), Joshua Lay (jlay925)
Arcot Somashekar	Oscar Bright (obri513), Declan Kelly (dkel069)
Arcot Somashekar	Eli Brown (ebro916), Zach Judkins (zjud875)
Johan Verbeek	Tim Stumbles (tstu330), Patrick Whyte (pwhy885)
Johan Verbeek	Ishraq Bhuiyan (ibhu708), Solomon Tapu (stap794)
Johan Verbeek	Hannah Grimsey (hgri733), Raphael Viloria (rvil430)
Johan Verbeek	Max Franklin (mfra874), Scott Greenough (sgre962)
Daniel De Mel	Corin Lilley (clil193), Jaundre Pienaar (jpie939)
Kean Aw	Tiernan Phillips (tphi219), Ivan Santiago (isan182)

	Supervisor	Students
Не	enry Williams	Adrian Rosioru (aros181), Alex Soncodi (ason999)
Не	enry Williams	Julie Jeong (jjeo268), James Zeng (jzen379)
Pe	eter Xu	Taro Nishida (tnis156), Cole Tetro (ctet293)
На	azim Namik	Jacob Capes (jcap486), Leon Gorter (lgor800)
Υι	uqian Lu	Pang Haoyu (hpan677), Leon Plesner (lple994)
Υι	uqian Lu	Callum Coyne (ccoy098), Albie Thomas (atho957)
Υι	uqian Lu	Akeeshan Sivakumar (asiv325), Reinhard Voorhoeve (rvoo320)

Booth No.	Project ID	Title
94	102	[Industry sponsored] Application of Robotics to automate the assembly of Cold Formed Steel framing
95	7	Body powered prosthetic hand

Space Systems

Booth No.	Project ID	Title
96	5	Asteroid-Mining anchoring mechanism for M-type NEO asteroids [Preallocated]
97	58	Solar sailing attitude control
98	59	Spacecraft Collision Avoidance by Variable Area Device
99	60	Space Objects Orbit Determination via SatPing Device
100	87	Development, Qualification, and Integration Structures and Deployment Pod for CubeSats

Thermodynamics

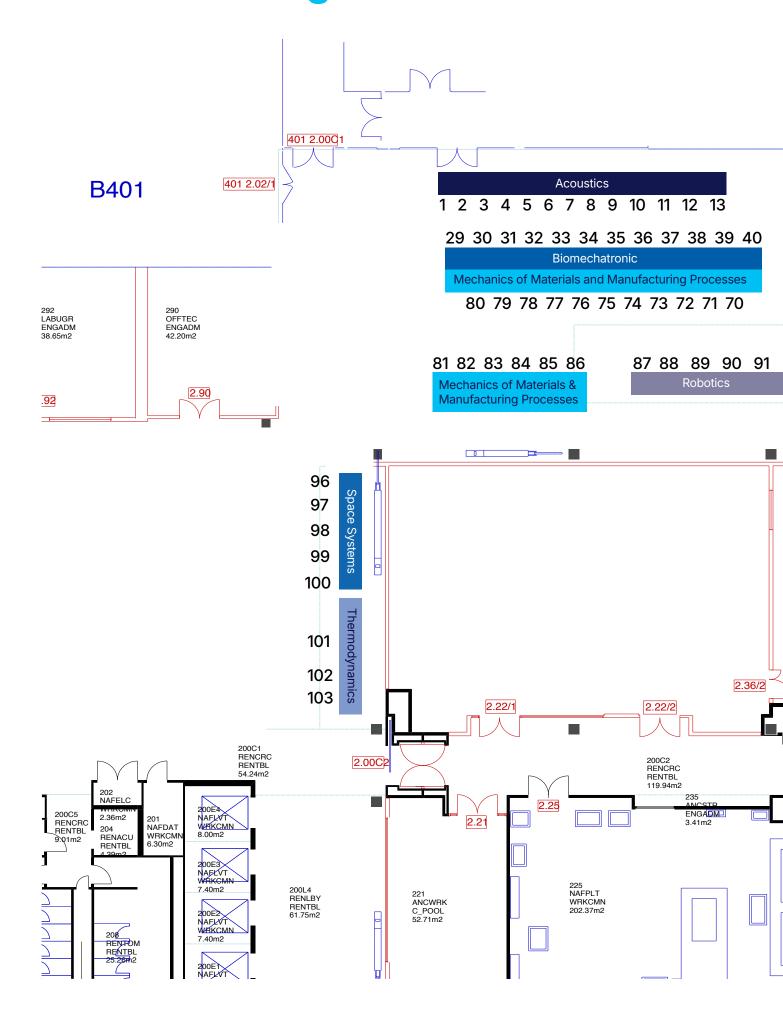
Booth No.	Project ID	Title
101	30	Thermal Pollution of the Waikato River
102	32	FSAE Heat Exchanger Optimisation
103	33	Turbulent Heat Transfer in Crossflow

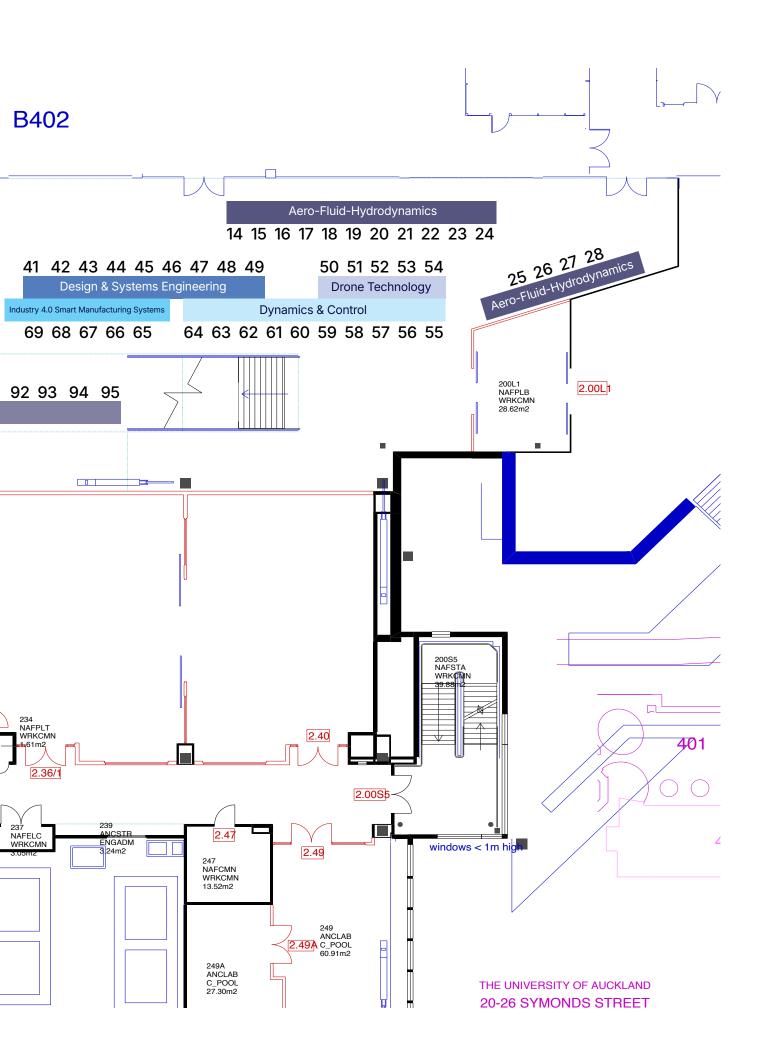
Supervisor	Students
Yuqian Lu	Thomas Cranefield (tcra715), Sam Gunn (sgun399)
Kean Aw	Chris Neville-Dowler (cnev969), Charlie Williams (cwil659)

Supervisor	Students
Guglielmo Aglietti	Drishti Murara (dmur978), Ryan Ruscoe (rrus670)
Roberto Armellin	Dillon Brymer (dbry264), Keane Fong (kfon579)
Roberto Armellin	Ryan Johnson (rjoh461), Riya Kumar (rkmu767)
Roberto Armellin	Lucas Cowley (Icow338), Kyle Duck (kduc498)
Benjamin Taylor	Matias Mufarech Woyke (mmuf367), Will Southee (wsou903)

Supervisor	Students
Stuart Norris	Jake Chen (jehc291), Prem Kumar Tamilselvam (ptam469)
Stuart Norris	Frank Lin (xlin174), Benjamin Taylor (btay928)
Stuart Norris	Georgia Burrows (gbur861), Georgia Westerlund (gwes658)

MECH: Building 405. Level 2 Atrium





Engineering Science and Biomedical Engineering: Level 3

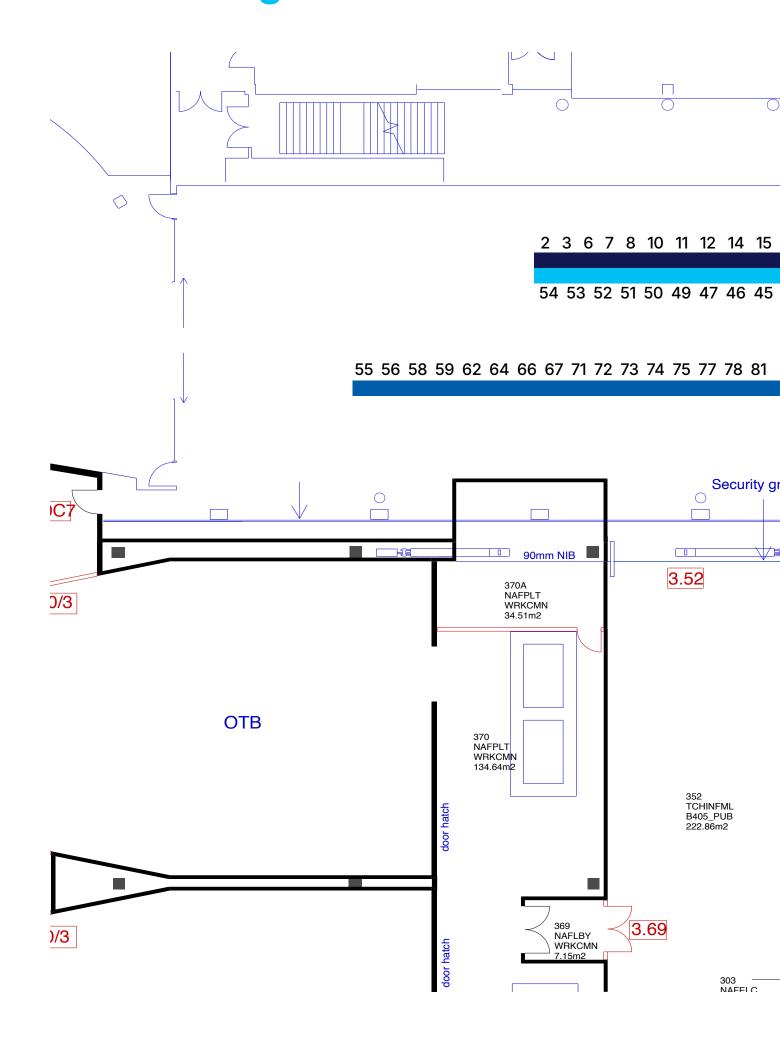
Project ID	Title Title
2	Predicting pressure drop of two-phase geothermal fluid due to contraction across sharp-edge orifice plate
3	Intelligent AR Rehabilitation for Post-Stroke Spatial Neglect
6	Make a face
7	Press the flesh
8	Improving Paediatric Skeletal Models for Better Clinical Outcomes
10	Identifying low back pain using wearable sensors
11	Looking for MRI brain biomarkers of ADHD
12	Is barefoot running good for you?
14	Al-Enhanced Identification of Ablation Targets for Improved Atrial Fibrillation Treatment
15	From Natural Description to Simulation: Al tools for Geothermal Engineering
16	Making waves: tracking the dynamic physiological metrics in the gut
17	High efficiency fabrication of conducting polymer 3D sensors
19	Machine learning-based aerofoil optimisation for low Reynolds number aerodynamics
21	Investigating the Predictive Consistency of Human Cardiac Action Potential Models
24	Small newborn sheep, what contributes to their growth?
26	Validating and calibrating statistical models of early-stage breast cancer treatment for clinical use in New Zealand
27	FarmAssist : A chat bot to help farmers with their surveillance videos
28	Beating heart disease - non-contact imaging for cardiovascular disease
29	Clear Photos from Shaky Videos: Depth Estimation and Layer Separation for Smartphone Cameras
31	Scheduling Times and Rooms for University Courses.
32	Finding Consumer Valuations
35	Creating a Python Library for Placental Blood Flow Modeling
36	Reconstructing 3D heart motion using 2D MRI displacement encoding and decoding
37	Quantifying breast shape, volume, and composition
41	Building Digital Ecosystems for Hospitals
42	A software and hardware model of circulatory impedance
43	Scheduling of Wind-Assisted Cargo Vessels
44	Scheduling of Kiwifruit Scanning for Zespri

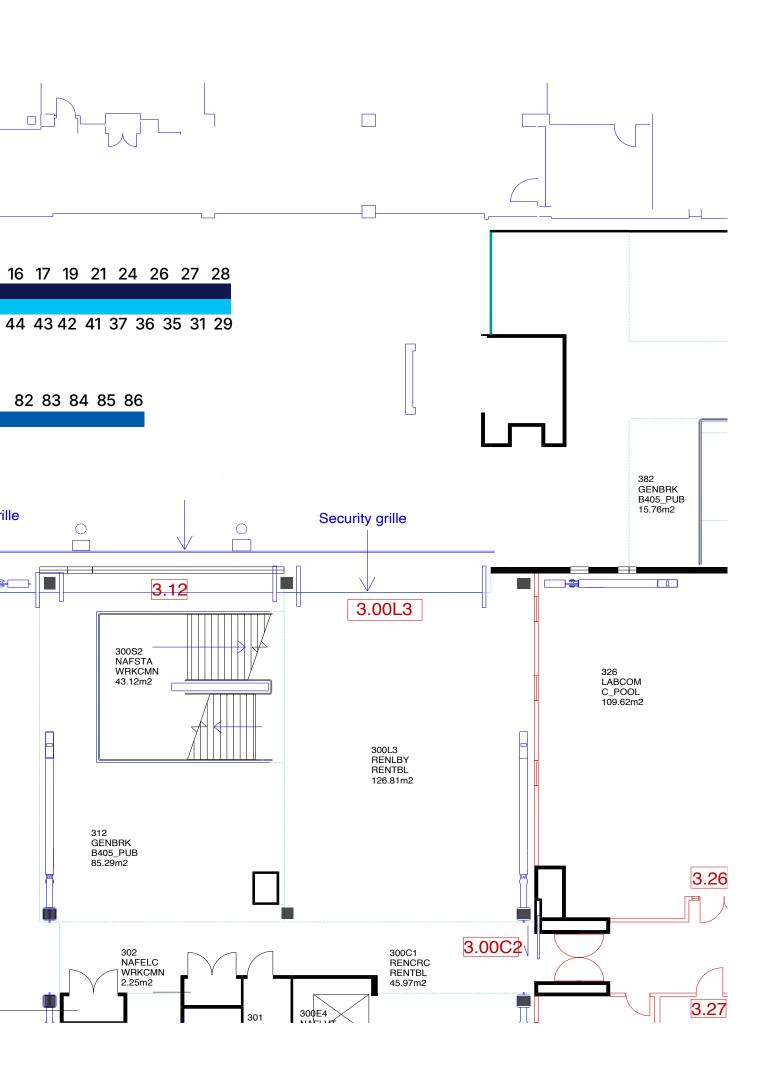
Supervisor	Students
Sadiq Zarrouk	Samuel Morris Mandell (smor466), Riley Smith (rsmi405)
Alan Wang	Blake Stevens (bste227), Michael Yap (myap419)
Poul Nielsen	Conrad Hart (char451), Andy Wu (awu757)
Poul Nielsen	Ashley Jubelag (ajub760), Shannon Macdonald (smac208)
Julie Choisne	Yuhui Cao (ycao891), Josh Zou (jzou037)
Thor Besier	Zack Levy (zlev455), Emily Mcclame (emcc153)
Justin Fernandez	Claire Kim (ikim318), Pradyun Setti (pset775)
Justin Fernandez	Aidan Kozyniak (akoz236), Isaac Morris (imor995)
Jichao Zhao	Angus Edwards (aedw781), Harding Gong (hgon509)
Oliver Maclaren	Siying Huang (shua369), Zhi Hui Celina Kan (zkan888)
Peng Du	Belinda Mov (bmov040), Samantha Young (syou851)
Peng Du	Sean Dixon (sdix761), Nikhil Patel (npat661)
Ru Nicholson	Celine Bui (gbui042), Amanda Tze Min Lee (alee598)
Kenneth Tran	Rishi Singh (rsin853), Daniel Zhang (dzha091)
Alys Clark	Laknavi Jayamanne (ljay300), Elaina Yang (yyan609)
Hayley Reynolds	Louie Curnow (Icur551)
Jagir Hussan	Alex Foster (afos743), Amy Huxford (ahux742)
Prashanna Khwaounjoo	Aryan Patel (apat260), Samuel Sale (ssal500)
Oliver Maclaren	Rohan Dhingra (rdhi934), Sunny Wang (ywan669)
Thomas Adams	Kaleb Pickerill (kpic348), Miles Scherer (msch213)
Thomas Adams	John Hayes (jhay778), Richmond Walker (rwal584)
Sahan Jayatissa	Jude Beullens (jbeu659), Jordan Blennerhassett (jble832)
Martyn Nash	Madison Don (mdon720), Gayatri Ganesh (ggan104)
Thiranja Babarenda Gamage	John Shea (jshe819), Emily Wan (ewan264)
Michael O'Sullivan	Adara Burns (abur477), Tamsin Mills (tmil236)
Andrew Taberner	Tejas Samant (tsam267), Allen Shen (ashe538)
Andrew Mason	Sophia Lazor (slaz724), Jessica Mooney (jmoo185)
Andrew Mason	Hanna Chan (hcha460), Ethan Po (epo272)

Project ID	Title
45	Image Processing to Improve Traffic Flows through Roadworks with Stop/Go Traffic Lights for Fulton Hogan
46	The Chaotic Neuron Model
47	Predicting Chaotic Time-series with Artificial Neural Networks & Machine Learning
49	Shoulder system identification
50	Connecting brain cells to brain trauma through machine-learning based bioinstrumentation
51	Traffic Congestion Charges in New Zealand
52	Exploring the opportunities of vertical take-off and landing aircraft for New Zealand's remote communities
53	Analysis of Behaviour in a VR Meditation Application
54	Computer Modelling the Flow of Calcium in a Networks of Aggressive Brain Cancer Cells
55	Develop Al Models to Predict Water Level Data
56	Groundfish Survey Design
58	Stomach Structures: Shaping Digestion Dynamics
59	Membrane folding wing for future ultra-light aircraft
62	Enhancing JADE
64	Testing New Zealand Inflow Models
66	Pricing storage in the New Zealand electricity market
67	Machine learning and computational biomechanics to improve predictions of aortic dissection
68	An ECG electrode for deployment everywhere
71	Implementing machine learning and physics-based constraints for tracking skin surface deformation
72	Amplifying Insights: Machine Learning for Brain Disease Prediction with aMRI
73	Comparison of Astrocytes & Retinal Astrocytes on Chip
74	Subject-Specific Foot Orthotics- FEM approach
75	Al driven brain biomechanics model for diagnosis and prognosis of brain concussion
77	Digital Ecosystems to Empower Flood Mitigation
78	Linking Computer Vision and Virtual Reality to create a Novel Football Experience
81	Modelling the dynamics of growth hormones
82	[Cross-Dept.] Detection System for Neurodegenerative Diseases using Machine Learning
83	Simulation of complex particle-like interactions in self-organised systems
84	Systematic time-series feature engineering for explainable machine learning models
85	Non-Destructive Quality Control of Lithium-Ion Batteries Using Scanning Acoustic Microscopy and Machine Learning
86	Machine learning-based prediction of fluidic permeability in bone tissue scaffolds

Supervisor	Students
Andrew Mason	Juan Cantalapiedra (jcan156), Chris Young (cyou708)
Charles Unsworth	Andrew Davy (adav689), Sanat Singh (sisn749)
Charles Unsworth	Jeremy Ballard (jbal127), Michael Rubie-Wong (mrub457)
Bryan Ruddy	Jared Chan (jcha995), Bismarck Crawley (bcra404)
Vickie Shim	Bryan Chen (bche504), Nina Ose (nose718)
Andrea Raith	Shaheer Hussain (shus898), Nathan Travis (ntra521)
Andrea Raith	Jordan Hedges (jhed195), Alex Jobbins (ajob412)
Mark Billinghurst	Scarlet Hur (yhur838), Robin Joo (rjoo837)
Charles Unsworth	Brooklyn Bowden (bbow388)
Thomas Adams	Elijah Hayward (ehay055), Mahin Panchia (mpan900)
Thomas Adams	Saahil Patel (spt157), Kun Er Zhang (kzha198)
Leo Cheng	Kenny Liao (klia768), Brendan Yip (byip761)
lain Anderson	Fred Kim (gkim635)
Andy Philpott	Oliver McKinnon (omck525), Ethan Wingfield (ewin169)
Andy Philpott	Shahed Ismael (sism468), Wendy Liou (flio924)
Andy Philpott	Dominic Domazet (ddom259), Sam McFadzean (smcf586)
Vinod Suresh	Jasmine Ha (jha889), Shayka Patnaik (spt006)
Massi Hesam	Vicki Chow (vcho409), Sophie Rose (sros848)
Thiranja Babarenda Gamage	Arjun Singh (asin735), Patrick Zhang (pzha670)
Eryn Kwon	Daniel Contractor (dcon652), Roy Skog (rsko389)
Charles Unsworth	Kyle Anderson (kand947), Esha Banerjee (aban598)
Maedeh Amirpour	Seyorn Aruna Girinathan (saru086), Peter Eaglen (peag224)
Vickie Shim	Edwin Schaufelberger (esch344), Ryan Zhuang (rzhu424)
Michael O'Sullivan	Eric Feng (efen510), Aditya Tendulkar (aten037)
Michael O'Sullivan	Rahul Kanji (rkan067), Haveesha Perera (hper755)
Andreas Kempa-Liehr	Gabrielle Dumble (gdum526), Ariki Tana (atan512)
Andreas Kempa-Liehr	Joseph Storey (jsto890)
Andreas Kempa-Liehr	Ed Allison (eall491), Sam Lowe (slow759)
Andreas Kempa-Liehr	Alex Ouyang (aouy006), Bradley Shen (bshe902)
Andreas Kempa-Liehr	Leroy Lu (Ilu996), Jonathan Phou (jpho728)
Maedeh Amirpour	Hannah Huddleston (hhud717), Cindy Leung (cleu918)

ESB: Building 405. Level 3 Atrium



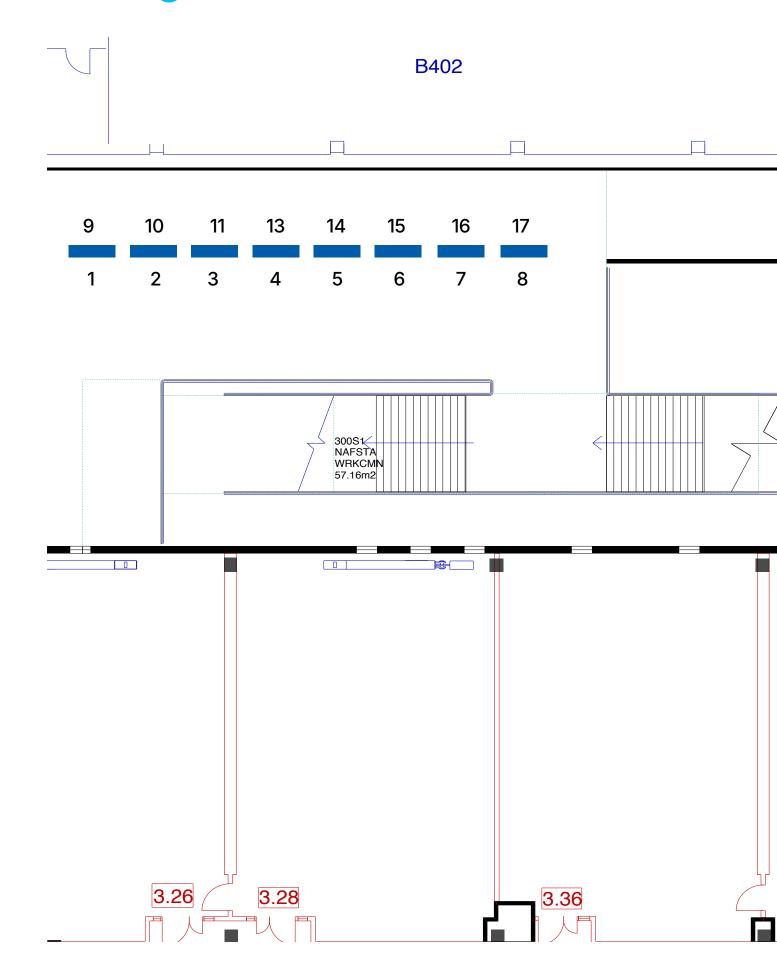


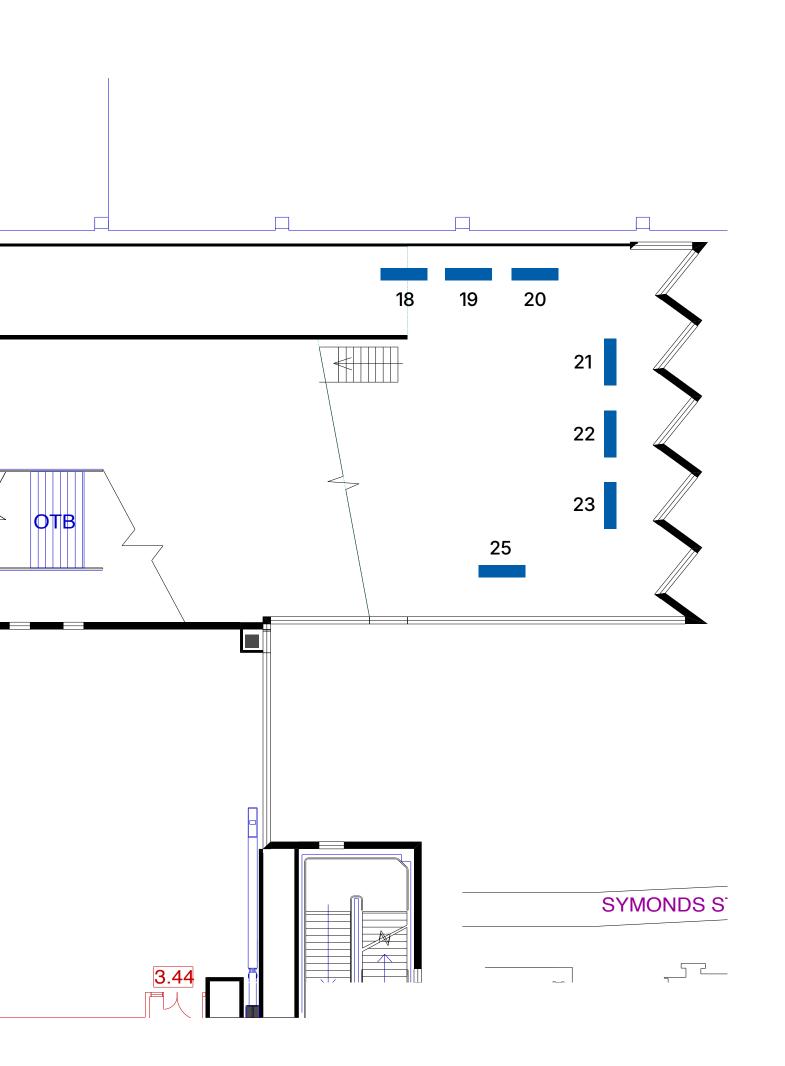
Chemical and Materials Engineering: Level 3

Project ID	Title		
1	Bioprocessing Winery Waste for Sustainable Biopolymer Production		
2	CFD and experimental optimization of the alginate electro-spraying process		
3	Correlating Temperature with Greenhouse Gas Composition		
4	Sustainable Extraction of Microplastics from Seawater Using Deep Eutectic Solvents		
5	Extraction of Value-Added Components from NZ Seaweeds Using Deep Eutectic Solvents		
6	Energy harvesting devices using biological or biodegradable materials		
7	Controlling the mechanical properties of alginate hydrogels to suit cartilage tissue engineering		
8	New insights into cartilage-on-bone mechanics		
9	Advanced electrode materials for aqueous metal-air batteries		
10	Design and development of Seawater Battery Cell		
11	Suitable Electrochemical Testing for Epoxy-Based Anticorrosion Coatings		
13	Plant safety inspection system using deep learning (YOLOv5)		
14	Residential Energy Resilience		
15	Exploring the biomechanical rationale for partial facetectomy in the management of lumbar stress injuries using computational modelling		
16	Development of a microfluidic sensor for detecting heavy metals		
17	Dynamic Hydrogen Production Modelling		
18	Dynamic Modelling of Packed Bed Reactors		
19	Energising New Zealand's Strong and Waste Sheep Wool [Cross Dept]		
20	Application of Deep Eutectic Solvent (DES) for efficient green hydrogen production		
21	Development of a prototype hand-held low-temperature spray dryer		
22	Kānuka Biochar to Activated Carbon		
23	Exploring Internal Structural Changes in Muscle Satellite Cells During Long-Term Expansion Across Multiple Animal Species.		
25	Nanoscale magnetically patterned films		

Supervisor	Co-supervisor	Students
Shan Yi		Shaan Greenwood (sgre310), Muhammad Razeen Izzat Mohd Zainudin (mmoh440)
Meng Wai Woo	Jenny Malmstrom	Flynn Howarth (fdaw891), Lauren Wong (lwon347)
Ashton Partridge	Meng Wai Woo	Joshua Cochrane (jcoc707), Samuel Don (adon697)
Kaveh Shahbaz		Emma Sivakumar (esiv562), Vithu Sivanesan (vsiv217)
Kaveh Shahbaz		Azura Iqbal (aiqb560), Phoebe Qian (pqia624)
Jenny Malmstrom		Blake Jowsey (bjow251)
Jenny Malmstrom		Raffa Mohamed Faizal (fmoh877), Hirushi Perera (hper164)
Ashvin Thambyah		Lucy Liu (Iliu847), Jack Slatter (jsla488)
Shanghai Wei		Jack Main (jmai193), Lachie Ryan (Irya633)
Shanghai Wei		Phoebe O'Sullivan (posu052), Violet Speed (wspe185)
Wei Gao		Gauri Arora (ggau682), Ronina Meredith (rmer309)
Wei Yu	Brent Young	Bryan Park (bpar445), Shibo Xu (sxu635)
Isaac Severinsen	Brent Young	Sara Ng (sng370), Jacob Xie (jxie360)
Reza Arjmandi	Ashvin Thambyah	Prue Catton (pcat497), Tom Dupper (tdup312)
Ashton Partridge	Meng Wai Woo	Lilou Johnson (ljoh545), Joshua Shetty (jshe875)
Isaac Severinsen	Brent Young	Nathan Barber (nbar268), Rajin Morar (rmor281)
Isaac Severinsen	Brent Young	James Crawford (jcra732), Rishita Narayan (rnar348)
Hasini Wijayaratne	Jingjing Liu	Freya Coulson (fcou803), Zoe Shields (zshi286)
Jingjing Liu	Kaveh Shahbaz	Pravin Balaras (pbal041), Shiven Naidoo (snai993)
Meng Wai Woo	Hasini Wijayaratne	Rushil Kumar (rkmu500), Jeremy Okada (joka775)
Saeid Baroutian		Diya Chilluvuri (dchi723), William Masefield (wmas447)
Jake Oh		Zach Alajas (fala146), Sreeram Murugaiyen (smur931)
Jenny Malmstrom		Sunho Kim (skim682), Eddy Li (eli884)

CHEMMAT: Building 405. Level 3 Terraces





Civil and Environmental Engineering: Level 4

Water

Project ID	Title
2	Determining the Living-roof potential in the Auckland Region -
3	Determining the equivalent Curve Number Living-roof in the Auckland Region
4	Impact of Urban Light Pollution on Living-roof performance
130	The use of AI in flood modelling
176	Hydraulic Shock Absorption in Dams and Spillways
13	Experimental investigation of gravel barrier breaching at river mouths
66	The entrainment and movement mechanism of a smart sediment particle
67	Scour around artificial reefs
127	A comparison of urban beach responses to storms in Auckland
128	Wave conditions and coastal change: A satellite's-eye view
62	Seismic Resilience of the National Electricity Grid [UG]
137	Recovery from an Alpine Fault Earthquake and Aftershocks [UG]
151	Development of a Solid Waste Network Model for Vulnerability Assessment [UG]
177	Hydrodynamic Modelling of Historic Floods [UG]
78	Adopting flood modelling developed in New Zealand to Tonga
79	Rainfall reconstruction in the Pacific using CHRS
80	Investigate the impact of sedimentation on Pahurehure Inlet
89	Leakage location in water distribution systems based on internal flow sensors
90	Development of defects in rigid sewer pipes in Auckland
91	Smart Sensors for Detecting Problems in Sewer Pipes
92	Development of defects in flexible sewer pipes in Auckland
210	Caracterising leakage behaviour in service pipes

Transportation

Project ID	Title
125	Modelling of Pavement Response to Wireless IPT Pad Integration: A Sensitivity Study
163	The effect of asphalt mix voids on Wireless Charging EV pads in road pavements
164	Evaluating U-Bolt Load Capacity for Safe Lifting of Reinforcing Steel Cages

Supervisor	Students
Asaad Shamseldin	Holly Bliss, Sama Kattaya
Asaad Shamseldin	Seoyoung Cho, Dae Kim
Asaad Shamseldin	Fiona Qi, Madelyn Qian
Asaad Shamseldin	David Pham, Nathaniel South
Asaad Shamseldin	Isaac Tetro
Bruce Melville	Alysa Lai, Max Leotta
Bruce Melville	Subhan Meher, Ishaan Sharma
Bruce Melville	Rushit Pandya, Jack Underwood
Colin Whittaker	Zirui Guo, Hank Lin
Colin Whittaker	Yue Yang, Claire Zhao
Conrad Zorn	Alexander Eldridge, Benjamin Young
Conrad Zorn	Ken O'Connor, Chris Tims
Conrad Zorn	Danielle Gomez, Linda Jiao
Conrad Zorn	Rachel Kwon, Hanyi Lee
Kilisimasi Latu	Oscar Clark, Ben Holland
Kilisimasi Latu	Gabriel Leaso, Boston Tofa
Kilisimasi Latu	Methmika Abeyratne, Yash Phutane
Kobus van Zyl	Seo-jeen Hwang, Roger Yang
Kobus van Zyl	Yuqing Dou, Guolong Jia
Kobus van Zyl	Gurman Singh Hanspal, Hoang Ngo
Kobus van Zyl	Kevin Wang, Samuel Wang
Kobus van Zyl	Benjamin Freeman, Thomas Manson

Supervisor	Students
Doug Wilson	Minjae Kim, So-Yeon Lee
Doug Wilson	Christina Liu, Tony Shu
Doug Wilson	Tiaho Minhinnick, Charles Rankin
Dodg Wilson	riano minimion, chanco tantin

Project ID	Title	
105	Investigating the Impacts of Natural Disasters on Human Mobility Using Mobile Phone Visitation Data	
107	Exploring Spatiotemporal Neighborhood Dynamics Through Social Media Analytics and House Price Data	
118	Agent-Based Simulation of Children's Journeys to School: Exploring Travel Behavior, Safety, and Policy Implications	
120	Simulation of a Platoon-Based Multi-Lane Merging System for Enhanced Efficiency and Safety	
191	Evaluating feasibility of wireless charging for electric buses: A case study of Auckland	
192	Evaluating pedestrian safety in urban road networks	
197	Safety and Efficiency of Autonomous Vehicles in Unsignalised Intersection	
209	Evaluating feasibility of wireless charging for electric buses: A case study of Delhi	
217	Evaluating safety of electric vehicles in urban road networks	
121	Fear of Violence Against Women (VAW) and Safety Works	
122	Evaluate the public transport network changes for Auckland through an equity lens	
123	Road safety of pedestrians around public transport terminals	
126	Public Transport Journey Experience of Marginalized Population Groups	
208	Examining first mile journeys from an equity lens	

Environmental

Project ID	Title		
181	Student Defined Project: Environmental Engineering		
182	Student Defined Project: Environmental Engineering		
183	Student Defined Project: Environmental Engineering		
211	Student-defined project: Environmental Engineering		
219	Student-defined project: Environmental Engineering		
200	Surface water quality of dairy farming impacted awa		
73	Indoor air quality impacts on office occupant health and well-being		
74	Temperature in offices - occupant health and well-being		
186	Organic and Inorganic Contaminants in Pahurehure Inlet 2 in Drury		
201	Stabilisation of contaminated sediments in Pahurehure Inlet 2		
202	Nanobubbles for treating contaminated sediments in Pahuhure Inlet 2		
133	Future-proofing Aotearoa's Resilience: Integrating Technological and Natural Hazard Risk		
134	Future-proofing Aotearoa's Resilience: Integrating Technological and Natural Hazard Risk		
135	Rising Waters, Resilient Homes: A multi-faceted approach towards housing resilience in Aotearoa New Zealand's Flood-Prone Areas		

Supervisor	Students
Minh Kieu	Kunwoo An, Nathan Kim
Minh Kieu	Danny Chen, Andrew Zhang
Minh Kieu	Kan Leung, Ethan Wang
Minh Kieu	Tianwei Austin Cao, Alex Phun
Prakash Ranjitkar	Shiliang Cai, Dylan Xu
Prakash Ranjitkar	Corin Fenwick-Rose, Hassaan Mohammad
Prakash Ranjitkar	Atmar Ahmadzai, Adhil Nishat
Prakash Ranjitkar	Vivek Patel, Hamish Prasad
Prakash Ranjitkar	Garry Shoker, Rui Zheng
Subeh Chowdhury	Angel Bernard, Azana Bhatia
Subeh Chowdhury	Jamie Cels, Christopher McLellan
Subeh Chowdhury	Parbh Chahal, Matthew Kim
Subeh Chowdhury	Humayra Azam, Fale'aka Bloomfield
Subeh Chowdhury	Wen Bin Liang, Jorja Rosser

Supervisor	Students
Ajit Sarmah	Kendric Cher, Benji Williamson
Ajit Sarmah	Neo Stuart, Annie Tan
Ajit Sarmah	Kristin Bian, Annalisa Leupolu
Ajit Sarmah	Logan Hunt, David Telefoni
Ajit Sarmah	Nathan Garrow, Jedi Prachayanukul
Cody Mankelow	Tania Al Baytee, Kartik Banerjee, Tyler Treadwell
Kim Dirks	Grace Ding, Edward Joseph
Kim Dirks	Bhavya Jasti, Bhanu Raveenthiran
Naresh Singhal	Nicholas Chin, Anmol Pandey
Naresh Singhal	Bridget Han, Carmen Su
Naresh Singhal	Niki Nakao, Linda Rehm
Sandeeka Mannakkara	Japjot Gill, Jessica Lu
Sandeeka Mannakkara	Jasmine Cho, Sonia Jiang
Sandeeka Mannakkara	Ujval Gupta, Thareen Jayawardena

Project ID	Title	
171	Rising Waters, Resilient Homes: A multi-faceted approach towards housing resilience in Aotearoa New Zealand's Flood-Prone Areas	
221	Rising Waters, Resilient Homes: A multi-faceted approach towards housing resilience in Aotearoa New Zealand's Flood-Prone Areas	
124	Analysing the suitability, effect and cost of storm water device use for urban storm water management in the Auckland region	
199	Development of holistic resource management framework for use of pumice for engineering	
225	Development of holistic resource management framework for use of pumice for engineering	
158	Improving the Stability of Enzymes for CO ₂ Capture	
159	Enhancing the Efficiency of Enzymes for CO ₂ Conversion	

Geotechnical

Project ID	Title
154	Geophysical and Geotechnical Investigations of Northwestern Auckland
155	Assessing soil liquefaction potential and severity using geophysical data
156	Modelling the sedimentary basins of the Southland Region
160	Effect of antecedent soil moisture conditions on infiltration characteristics of clayey soil slope
162	Effect of slope geometry on infiltration characteristics of clayey soil slope
165	The importance of transient seepage analysis in slope stability calculations
81	Back-analysis of paleoliquefaction of pumiceous volcanic-ash soil materials using undrained
82	Effect of surface inclination and irregularity on seismic response of deposits
83	On the angle of repose of granular materials (Part 2)

Construction Management

Project ID	Title	
108	Develop a digital data collection tool for construction process monitoring	
109	Machine learning in earthquake building damage assessment	
110	Ai-aided rapid damage assessment post-disaster	
94	Quantifying the Benefits of Social Procurement for Infrastructure Projects	
95	Machine-Learning Based Traffic Volume Prediction	
96	Selection Criteria of Suppliers for Sustainable Infrastructure Procurement	
215	A Game-Theoretic Analysis of Green Investment Strategies for Sustainable Infrastructures	
86	How can we better engage with children from Kura Kaupapa Māori?	

	Supervisor	Students
	Sandeeka Mannakkara	Mio Kamiya, Georgia McLeish
	Sandeeka Mannakkara	Jason Lu, Tran Nguyen
	Tumanako Fa'aui	Jae Yong Jeon, Jaden Solanki
purposes	Tumanako Fa'aui	Moses Hafoka, Johnny Mayerhofler
purposes	Tumanako Fa'aui	Navim Zanzabil-Molla
	Wei-Qin Zhuang	Julie Chhour, Jenny Nguyen
	Wei-Qin Zhuang	Nada Elebiary, Samiya Hossain

	Supervisor	Students
	Andrew Stolte	Alex Hanoush, Xavier Sullivan
	Andrew Stolte	Juan Wang, Sam Xu
	Andrew Stolte	Jay Chen, Andrew Zong
	Arezoo Rahimi	Qiaochu Wei, Ziyang Zhou
	Arezoo Rahimi	Justin Shen, Sunny Syem
	Arezoo Rahimi	Zile Wang
cyclic triaxial test results	Rolando Orense	Vincent Choi, Braxton Hamilton-Sami
	Rolando Orense	Yuxin Ma, Ming Zhangmingzhou
	Rolando Orense	Yadon Kruger, Micah Newman

Supervisor	Students
Alice Chang-Richards	Yi Ding, Gordon Xiang
Alice Chang-Richards	Jeffrey Fu, Zion Su
Alice Chang-Richards	Dominic Ryan, Josh Sutton
Hongyu Jin	Jackson Clarke, Daniel Logan
Hongyu Jin	Yichen Ding, Yimin Wu
Hongyu Jin	Juyeong Kim, Luis Kwon
Hongyu Jin	Vincent Chen, Adam El-Khatib
Nona Taute	Tayla Bristowe, Ariana George

Project ID	Title
87	Evaluating social procurement opportunities in geothermal development: Is social procurement profitable?
88	The Fast-Track Consenting Process: Does it allow proper sustainability and should social procurement be required?
214	Social procurement in a NZ pumice economy
166	MINORITY REPORT - Classifying Wellington Building Stock for resilience
173	Automated building damage detection and quantification using Al
174	Industry needs analysis on robotic inspection of infrastructure in New Zealand
175	Knowledge reuse in offsite design and construction
190	Construction management
213	Exploring the state-of-the-art infrastructure robotics

Structural

Project ID	Title
138	Walls, Columns, and Earthquakes: Classifying Building Safety in the Capital
139	Shaking Tall Buildings: How Cost Effective is Base Isolation?
140	Pulling back the curtainwall – Understanding prevalence and vulnerabilities of NZ curtainwall
142	The influence of pounding between adjacent unreinforced masonry structures during earthquakes
150	Modelling the seismic behaviour of the St Matthew-in-the-city church
153	Exploring the feasibility and limitations of small-scale shake table tests
131	Developing a Concept for Low-Damage Mass Timber Buildings with Eccentric Braced Frames
115	Development of teaching tools to demonstrate actions in simple, semi-rigid and rigid connections.
116	Determining the influence of intersecting plate angles on the seismic performance of double sided fillet welds
117	Understanding Steel Beam Behaviour Project 2
220	Development of Design examples using FaST software
98	Carbon Assessment for Designing a Raft Slab
99	Upfront Carbon tradeoffs for Base Isolation
104	Understanding Steel Beam Behaviour
114	Practice-oriented techniques for modelling floor diaphragms strengthened using fibre reinforced composites in frame buildings
119	Effect of service conditions on the bond of FRP to concrete
167	Determination of specific characteristics of NZ produced LVL using novel test methods

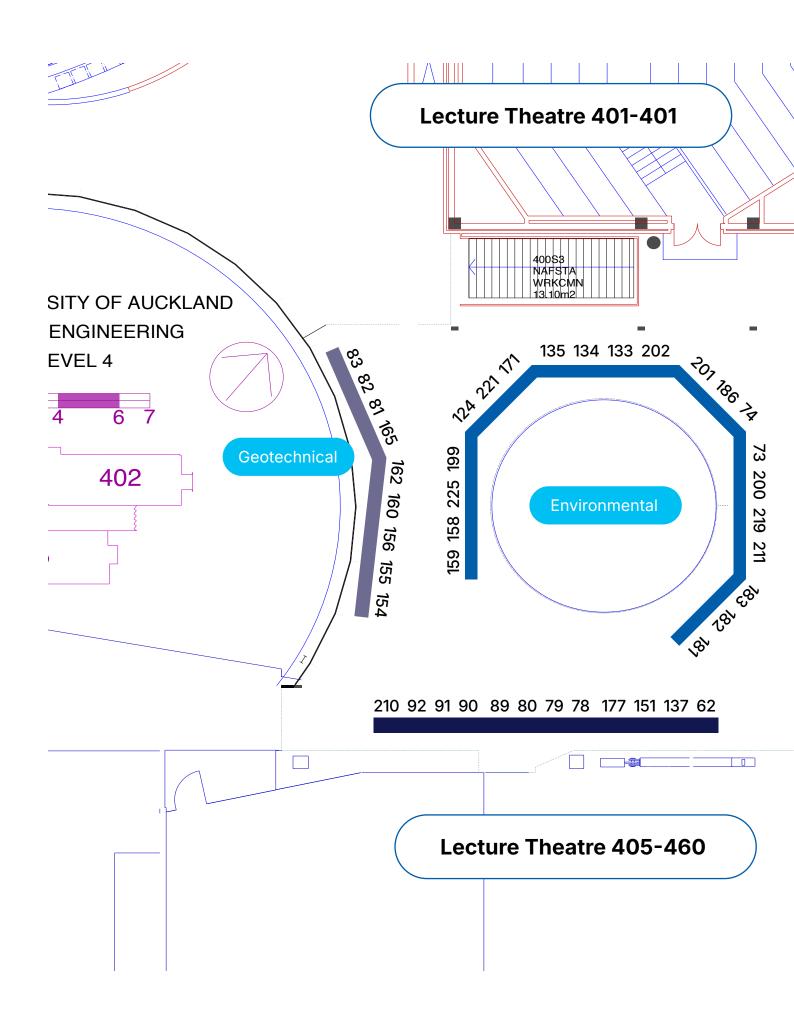
Supervisor	Students
Nona Taute	Dongqi Fan, Xingyu Mu
Nona Taute	Harley McDowell, Lewis Rose
Nona Taute	Rishav Sharma, Mario Yugovich
Theuns Henning	Sean Wong, Reina Zhang
Yang Zou	Mengrang Wang, Anthony Zheng
Yang Zou	Omer Abdelmonim, Ahmed Al-Essa
Yang Zou	Ishan Parmar, Tarunjot Tiwana
Yang Zou	Max Angland, Damon Erasmuson
Yang Zou	Anav Ramsing, Rahul Sanon

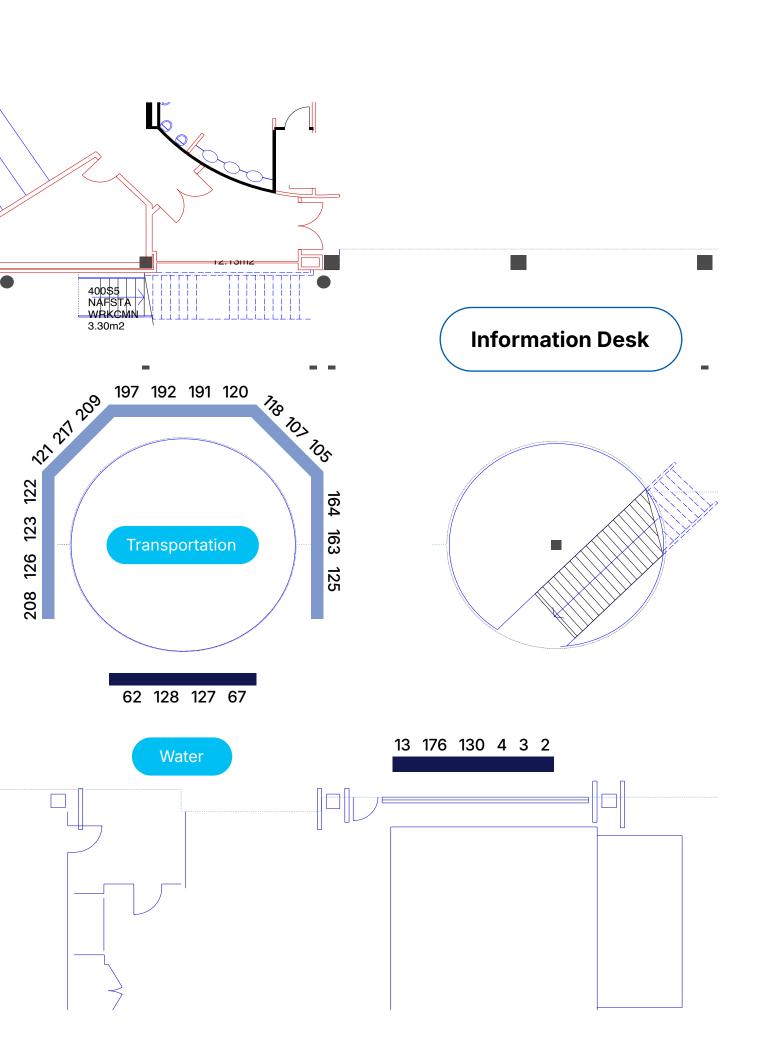
Supervisor	Students
Alex Shegay	Daniel Bae, Eijaz Mohamad Ali
Alex Shegay	Dhaivat Desai, Mohanshu Vaidya
Alex Shegay	Taryn Sundararaj, Joanne Zhang
Anastasios Giouvanidis	Jindy Meng, Cici Xuan
Anastasios Giouvanidis	Kevin Kim, Cheonglim O
Anastasios Giouvanidis	Bevan Jones, Brennan Webb
Ashkan Hashemi	Josh Colwell, Tippi Law
Charles Clifton	Winnie Leckey, Ken Lertjirawong
Charles Clifton	Taine Naera, Leitutolu Rasmussen
Charles Clifton	Nikheel Lal, Jaye Mitchell
Charles Clifton	Abraham Chaudhry, Akash Kanamala
Charlotte Toma	Dilshan Perera, Mohammed Tariq
Charlotte Toma	Ava Asadi, Melika Rabbani Khah
Charlotte Toma	Daniel Harold, Brooklyn Holding
Enrique del Rey Castillo	Paul Jung, Sean Kim
Enrique del Rey Castillo	Cole Fitzgerald, Krish Jaggi
Gary Raftery	Patrick Pang, Kevin Yang
	Alex Shegay Alex Shegay Alex Shegay Anastasios Giouvanidis Anastasios Giouvanidis Anastasios Giouvanidis Ashkan Hashemi Charles Clifton Charles Clifton Charles Clifton Charles Clifton Charles Clifton Charlotte Toma Charlotte Toma Charlotte Toma Enrique del Rey Castillo Enrique del Rey Castillo

Project ID	Title
168	Reinforcement of holes in LVL with screws and assessment of properties
169	Durability of Timber bridges in New Zealand
170	Asset management of Timber bridges in NZ and overseas
100	Seismic vulnerability of Pacific Island churches
101	Design and Fabrication of Small-Scale Masonry Prototypes for Shake Table Testing
102	Making concrete for artifical reefs using mussel shells, pumice, and sugar cane
76	Characterising the Expected Seismic Performance of Bridges in the State Highway Network
77	Design, modelling, fabrication and testing of steel beams
145	Behaviour of low damage designed structures in earthquakes
146	Effect of earthquakes on multi-storey clustered structures
147	Effect of coir on wave transmitting behaviour of soil and structures
148	Pounding behaviour of a bridge with different support conditions and slenderness in earthquakes
149	Numerical modelling of the interaction between buildings and surroundings during earthquakes
187	Optimization of Cross Laminated Timber (CLT) slab effective width in composite T beams
111	Can you build a concrete cricket bat?

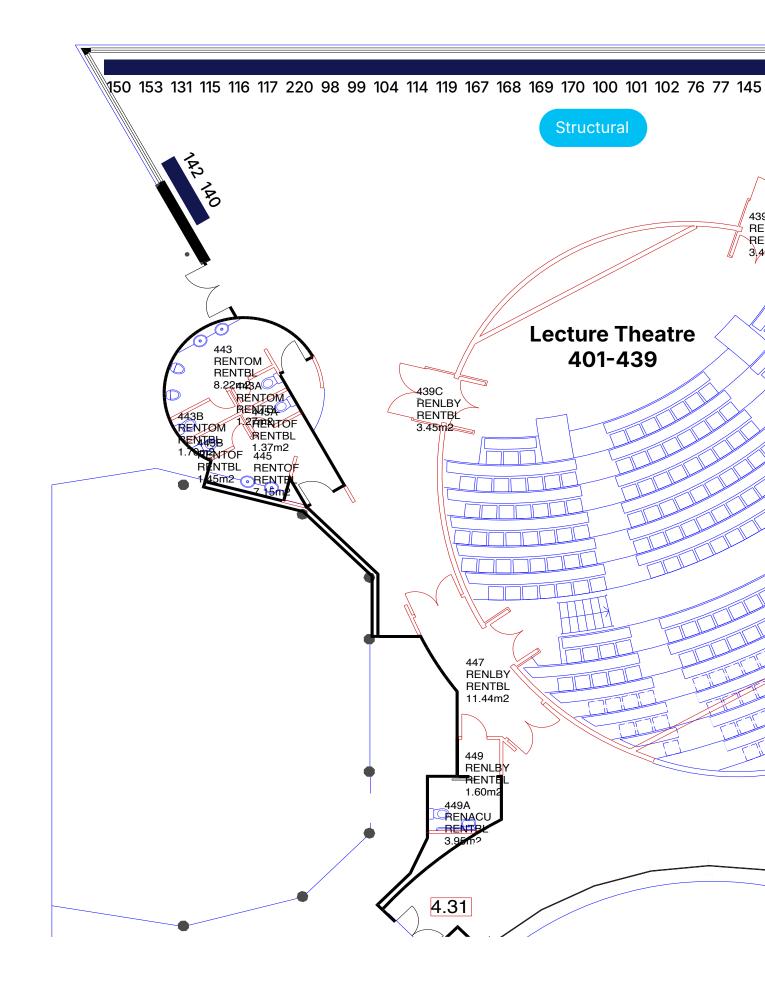
Supervisor	Students
Gary Raftery	Connor Mackay, Dean Palmer-Neels
Gary Raftery	Charlotte Hall, Tom McCondach Burke
Gary Raftery	Haoyu Zhang, Allen Zheng
Jason Ingham	Dahlin Hall, Faith Kalekale
Jason Ingham	Mighty Chaikajonsak, Henry Chap
Jason Ingham	Joshua Anandarajah, Nathan de Kriek
Lucas Hogan	Zara Groos, Holly Wenham
Lucas Hogan	Joshua De Frere, Jacob Preston
Nawawi Chouw	Chit Snow, Calvin White
Nawawi Chouw	Christine Lu, Michel Zhou
Nawawi Chouw	Lishan De Silva, William Shen
Nawawi Chouw	Huaye Guo, Hardy Zheng
Nawawi Chouw	Jessie Hao, Muze Li
Pierre Quenneville	Simon Hay, Harjap Singh
Rick Henry	Fergus Foster, Michael Land

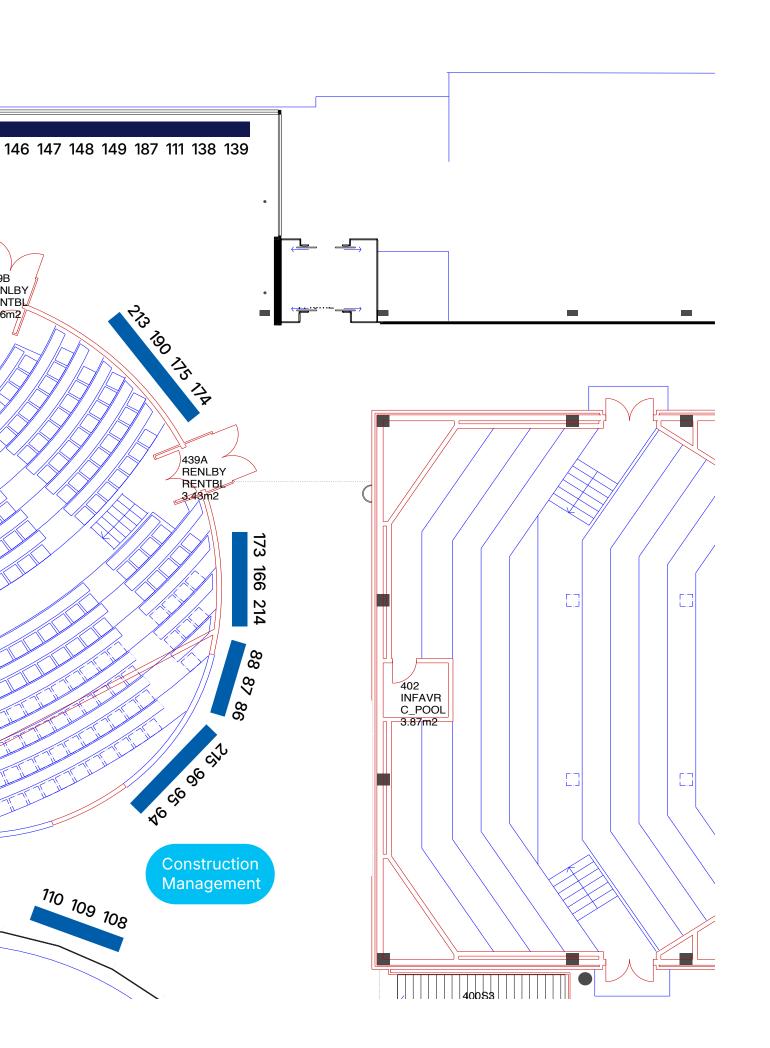
CIVIL: Building 405. Level 4 Atrium





CIVIL: B401. Level 4 Neon Foyer and Hall





Electrical, Computer, and Software Engineering: Level 5, 6, 7

AI & Machine learning

Project No.	Project Title
7	Bayesian AI models for the inverse problem of electrocardiography
12	Dyslexia support tools. Applying LLMs for dyslexic text correction.
32	Data Augmentation and Transcript Generation for Mild Cognitive Impairment
90	Developing an Interactive Application for Fostering Intercultural Competence
137	How DeepSeek and competing models can improve industrial manufacturing control?
43	Reconfigurable Neural Processing Unit (NPU) for Energy-Efficient AI at the Edge
44	Deploying TinyML on FPGA using Softcore Processors
82	Energy Efficient Machine Learning Solutions: The Case of Undervolting Adaptive Platforms
84	Adaptive Hardware Accelerator for Capsule Networks on Heterogeneous Platforms
117	Evaluating Synchronous Languages as a Path to Safer Autonomous Driving
5	Learning to Overtake via Reinforcement Learning based Control of an Autonomous Formula SAE Car (F1Tenth)
100	Empathic Virtual Agent for Cognitive Load Management in VR Driving Simulation
101	VR User Profiling and the Security / Privacy concerns in association
115	Automating clinical trials using NLP and synchronous programming
119	A digital twin of an autonomous car using Google bittide

Control Systems

	Project No.	Project Title
14 Intelligent Control for Multi-Area Power Systems		Intelligent Control for Multi-Area Power Systems
	130	Motion detection of Bees Using Electrostatic Sensors
132 CO ₂ Monitoring in Beehives		CO ₂ Monitoring in Beehives
	133	Parallelising Cell Models on FPGAs
	136	Sensor Interfaces

Embedded Systems

Project No.	Project Title	
36	Developing a Decentralized N-modular Cold Redundancy Architecture for the Onboard Computers of the Ko Au Nanosatellite	
64	Designing a heterogeneous multiprocessor on chip for mixed reactive and data dominated real- time systems	



ECSE Project Details
https://ecse-p4p.digitaledu.ac.nz

Students	Display Lab
Anthony Feng , Mark Wang	Embedded Systems (405.760, Lab)
Charlie Pellett , Lewis Pratt	HASEL (405.662, Lab)
Oscar Church , Sebastian Torres	HASEL (405.662, Lab)
Jessica Jiang , Amanda Lowe	MDLS (405-559)
Ethan Lu, Yash Patel	Embedded Systems (405.760, Lab)
Pratham Chhabra, Kristelle Sampang	Embedded Systems (405.760, Lab)
Talha Ashraf , James West	Embedded Systems (405.760, Lab)
Bahar Khalilnejad , Josiah Sterling	Embedded Systems (405.760, Lab)
Roni Jagini , Michael Stanley	Embedded Systems (405.760, Lab)
Sai Kiran Kamat , Charanjeet Santhanam Viswanathan	Embedded Systems (405.760, Lab)
Eason Jin , Charles Leng	Robotics (405.652, Lab)
Tianyi Hu , Jack Wang	MDLS (405-569)
John Moore , Chris Valenzuela	MDLS (405-559)
Nimit Parekh , Hamish Patel	Embedded Systems (405.760, Lab)
Tom Liu , Chris Min	Embedded Systems (405.760, Lab)

Students	Display Lab
Joel Henderson , Harry Mcgowan	Control & Signal Processing (405.722, Lab)
Jayti Pattni , Arnesh Sharma	Control & Signal Processing (405.722, Lab)
Paw Moo , Joshika Prasad	Control & Signal Processing (405.722, Lab)
Taeyeol Oh , Seoha Park	Control & Signal Processing (405.722, Lab)
Isabelle Shepherd , Roshan Wang	Control & Signal Processing (405.722, Lab)

Students	Display Lab
Nicholas Russell , Vinayak Verma	Embedded Systems (405.760, Lab)
Chittesh Jugan, Tai Martinez Grant	Embedded Systems (405.760, Lab)

Project No.	Project Title	
131	*Development and Qualification of a Power System for an Integrated Cubesat Platform	
134	RustOS: A real-time Rust operating system	
138	Self-organisation and Over-the-Air (OTA) software up-date systems for wireless sensor networks in IoT end-device layer	

Games & Education Aids

Project No.	Project Title	
1	How Can We Use Card Games to Teach Al Ethics?	
2	Physical coding blocks for robotics and software education	
11	Draw a software engineer. Investigating the engineering gender gap	
28	Improving the Course Evaluation Process	
74	Code Style Assessment	
77	Professor Turing, the "AI Teaching Assistant"	
87	Al body-tracking agent in Virtual reality to study embodiment	
98	STEM: Computing and Electronics Education for High School Classrooms	
123	Ambiguity by Design: Developing Critical Thinking Through Probeable Problems	
46	Communicating Computing Concepts	
4	How to Engage Young Girls in STEM?	
88	Improving pronunciation through visual feedback	
102	Strategies for reducing simulation sickness in VR Exergaming	
103	The Sounds of Safety - A VR Bicycle Simulation to Test the Effect of Soundscapes on Safety Perception	
109	Visualisation of multimodal data for lake health monitoring	

Green Energy Technologies

Project No.	Project Title	
17	Photovoltaic MPPT and PI control of Hybrid Energy Storage System in Microgrid System	
27	Spacing tables for emergency lighting with lenses	
60	Light Pollution Study In Indoor Farming	
97	Investigating Supercapacitor Reliability and Performance: Experimental Validation of Key Electrical Metrics	
127	Establishing Timing and Cybersecurity Testing Facilities for Digital Substations	

Human Computer Interactions

Project No.	Project Title	
21	AI-Powered Chatbot for Brain Health and Dementia Support	

Students	Display Lab
Miguel Torres	Control & Signal Processing (405.722, Lab)
William Brunton, Lucy Thwaites	Embedded Systems (405.760, Lab)
Riley Atkinson , Ben McMurtrie	Embedded Systems (405.760, Lab)

Students	Display Lab
Ashton Kirk , Ben Weng	MDLS (405-569)
Mardee Bayron , Pulasthi Lenaduwa	Embedded Systems (405.760, Lab)
Zion Suh , Gallon Zhou	MDLS (405-569)
Jaewon Kim , Vanessa Liu	MDLS (405-569)
Chulshin Kim , Allan Xu	Radio Systems (405.736, Lab)
Shubh Bhargava , Sahan De Silva	Radio Systems (405.736, Lab)
Jacky Kim , Melissa Sieu	MDLS (405-559)
Neha Desu , Wesley Key	Green Electronics (405.712, Lab)
Kay Tang , Hoanh Tong-Ho	Radio Systems (405.736, Lab)
Liam Parker , Victor Qiu	MDLS (405-559)
Jenny Nguyen , Shriya Singh	MDLS (405-569)
Deven Ranchhod , Fangping Wang	Control & Signal Processing (405.722, Lab)
Colin Li , Joshua Tan	MDLS (405-569)
Thisuka Matara Arachchige , Benjamin Qian	MDLS (405-559)
Rikki Noble), Reece Talopau	Embedded Systems (405.760, Lab)

Students	Display Lab
Ewan Bennie , Sahil Singh	Power Systems (405.628, Lab)
Daniel Aitken, Danika Money	Control & Signal Processing (405.722, Lab)
Damian Lee , Zebedee Wilson	Radio Systems (405.736, Lab)
Yunbo Hu, lain Ross	Green Electronics (405.712, Lab)
Aldonza Watt , Jiayi Zhao	Power Systems (405.628, Lab)

Students	Display Lab
Zach Celona, Fares Selwadi	Control & Signal Processing (405.722, Lab)

Proj	ect No.	Project Title
	24	Al-Enabled Virtual Assistant for Aged Care
	38	Co-Speech motion generation for Human-Robot Interaction
	83	Virtual Reality as a Culturally Safe Tool in the Clinical Assessment of Anxiety
	110	VR and psychophysiological monitoring to develop resilience in Health and Safety training

Image & Voice Processing

Project No.	Project Title
6	Universal Design for Personalized Automatic Speech Recognition
50	Sign Language Recognition on a Single Board Computer
73	Enhancing 3D Spatial Visualisation Skills with Al-Driven Question Analysis
80	Early detection of neurodegenerative diseases: Applying deep-learning based image classification techniques.
81	Trajectory Estimation of an underwater ROV using Benthic monocular footage
53	Extracting speech acoustics from the phase spectra
56	Data Augmentation for Robust Dysarthric Speech Recognition Using Disorder-Specific Error Patterns
89	Towards Objective and Al-Driven Intelligibility Assessment for Dysarthric Speech
91	Investigating the Impact of Spectrogram Parameters on Speech Technology Performance
92	Do Different Languages Speak Emotions Differently? Exploring Cross-Linguistic Emotion Recognition in Speech Al

Intelligent Systems & Industrial Informatics

Project No.	Project Title
18	Unlocking the Black Box: Enhancing Deep Neural Network Interpretability through Perception Visualization
62	Designing Dynamically Reconfigurable Discrete Industrial Automation Systems
63	Digital Twins and Machine Learning in Industrial Automation Systems Control
120	Vector Data Management in External Memory
139	Smart Power Grid: Multi-Agent Reinforcement Learning for Efficient Energy Management
26	Automated Vegetation Health Assessment Using Deep Learning and Multispectral Remote Sensing Data
108	Autonomous mobile buoy for monitoring the health of Lake Waikare
116	Battery-free health and location monitoring wearable for elderly care
122	Vector Data Management theoretical understanding and practical implications

Students	Display Lab
Andy Lee, Andrew Shin	Control & Signal Processing (405.722, Lab)
Joey Back , Jay Song	Robotics (405.652, Lab)
Jaehoon Oh , Cedric Yu	Radio Systems (405.736, Lab)
Minsung Cho , Anna Lin	MDLS (405-569)

Students	Display Lab
Shaurya Pathak , Zeno Simunic	HASEL (405.662, Lab)
Tony Huang , Jerry Yu	Robotics (405.652, Lab)
Marcellin Chan Mow , Tom Devonshire	MDLS (405-559)
Jackson Schofield	MDLS (405-569)
Michael Howell , Andrew Kim	Robotics (405.652, Lab)
Benjamin Carey , Will Griffiths	Control & Signal Processing (405.722, Lab)
Wilson Liang , Maahir Nafis	HASEL (405.662, Lab)
Omar Mourad, sarah rabah	HASEL (405.662, Lab)
Christopher Jensen , Ryan Saena	Control & Signal Processing (405.722, Lab)
Aurea Arlene Cheryl Saptaputra , Kimia Varasteh	Control & Signal Processing (405.722, Lab)

Students	Display Lab
Yul Ry Kim , Arisa Mori	Control & Signal Processing (405.722, Lab)
Wenxi Kang , Mike Shum	Embedded Systems (405.760, Lab)
Zhiyu He , Huaiwen Zhang	Embedded Systems (405.760, Lab)
Oliver Lin , James Sun	Radio Systems (405.736, Lab)
Xinbo Chen ,Teresa Zhang	Embedded Systems (405.760, Lab)
Yashna Kumar , Sally Paing	Control & Signal Processing (405.722, Lab)
Connor Dunn , Cromwell Pilacan	Embedded Systems (405.760, Lab)
Shariah Brunton , Olivia Selby-Brown	Embedded Systems (405.760, Lab)
Troy Mackenzie-Smee , Joshua Manners	MDLS (405-569)

Parallel & Cloud Computing

Project No.	Project Title
8	How much slack is in a GPU or multiprocessor schedule?
9	SAR algorithms on Neural Processing Units (NPU) for satellite applications
10	Sustainable high-performance computing through minimisation of data transfer
114	Developing a hardware-software framework for ensuring Māori data sovereignty
118	Telescope Scheduling

Power Electronics & Electronics Systems

Project No.	Project Title
16	Design and Control of an EV Charging and Energy Storage System Based on a GaN-Based Bidirectional DC-DC Converter
51	Investigation of a liquid-metal based thermal cooling method for an IPT system
65	Design and Optimization of High-Efficiency Amplifiers for Plasma Speaker Systems
96	Comparison of measurement techniques for parameter identification of MHz wireless power transfer systems
141	Design of a Supercapacitor Charging Circuit for Biomedical Applications
35	Investigating the reliability of digital systems operating under cryogenic conditions
49	A LED-based Wearable Photoacoustic Sensing Platform
59	Tuneable White Lighting with Wireless Power
71	Drone Motor and Dynomometer
129	Smart City IPT Demonstration Platform

Power Systems

Project No.	Project Title
15	Radial Multi-Terminal Direct Current System based Validation of DC Protection Strategies
104	Virtual Power Plants for Electricity Market Grid Flexibility Services
124	Harmonic Study on Solar Farm Integration in New Zealand
125	PacDSL: Logic Language Models for Protection, Automation and Control of Electrical Power Systems
126	Exploring AI and LLM Toolchains for Power System Resilience Technolgy Development

Radio Systems & Telecommunications

Project No. Project Title		Project Title
 Sunlink: Light-Based Wireless Communication Using Sunlight Sunlink II: Light-Based Wireless Communication Using Sunlight Non-Cooperative Validation of AIS Geolocations Using RF Signal Metrics 		Sunlink: Light-Based Wireless Communication Using Sunlight
		Sunlink II: Light-Based Wireless Communication Using Sunlight
		Non-Cooperative Validation of AIS Geolocations Using RF Signal Metrics

Students	Display Lab
Maxwell Ferguson , Alexander Pullen	MDLS (405-559)
Jessica Cho , Lara Lamont	MDLS (405-559)
Liyork Liao , Ezra Satrio	MDLS (405-559)
Jonathan Cilliers , Kalvin Huynh	Embedded Systems (405.760, Lab)
Euchan Chae , Yuichi Nishimura	MDLS (405-559)

Students	Display Lab
Ajaykrishna Amberkar , Ranveer Patel	Power Systems (405.628, Lab)
Daniel Kwon, Tai Wei Loh	Power Electronics (405.614, Lab)
Antonio Aranyos , Carlo Pagani	Green Electronics (405.712, Lab)
Imre Laan , Alan Pang	Power Electronics (405.614, Lab)
Krishay Kollipara	Power Electronics (405.614, Lab)
Caleb Hall , Campbell Wright	Green Electronics (405.712, Lab)
Luke Ryan , Enari Tevita	Radio Systems (405.736, Lab)
Michael Pham , Tianyi Xie	Radio Systems (405.736, Lab)
Arnav Kumar , Methulan Mohanathas	Green Electronics (405.712, Lab)
Tim Schoeman , Albert Sun	Green Electronics (405.712, Lab)

Students	Display Lab
David Levy , Sean Mullins	Power Systems (405.628, Lab)
Lan Li , Jinbo Shi	Power Systems (405.628, Lab)
Shah Hussain , Huasheng Zhi	Power Systems (405.628, Lab)
Jackson Lin , Raymond Tran	Power Systems (405.628, Lab)
Zhi Feng Chen , Harith Dumpala	Power Systems (405.628, Lab)

Students	Display Lab
Lachlan Chan , Enrique Jugo	Radio Systems (405.736, Lab)
Vivek Chauhan, Ryan Farrell	Radio Systems (405.736, Lab)
Oscar Brady , Wentao Dong	Radio Systems (405.736, Lab)

Project No.	Project Title	
58	Design and Characterization of Antenna Systems for Cubesats	
61 Exploration of Digital equity within New Zealand Schools		

Robotics

Project No.	Project Title
19	Autonomous Robotic Marine Biofouling Survey and Assessment
41	Robot Soccer System
67	Wearable daily assistant
68	Companion robot design
69	Robots in architecture

Signal Processing

Project No.	Project Title
33	Data Encryption using Compressive Sensing: Secure More with Less
52	Investigating speech communication inequity in our learning spaces
85	Multimodal Emotion Recognition using Visual LLM and Biosignal Data
86	Enhancing Collaborative Problem-Solving Through Adaptive Al Agents and Physiological Synchrony Modulation
93	Equanimity: A Virtual Reality Compassion Meditation with Breath Cues

Smart Phone & Tablet Applications

Project No.	Project Title	
23	AR tool to facilitate community participation in public space design	
25	Fall Detection-Enabled Risk Management for Indoor Activity Tracking	
30	An App for Active Listening and Cognitive Switching	
54	Secure, transparent, and anonymous voting systems by implementing Blockchain Technologies in the New Zealand ecosystem	
76	Measurement and encouragement of participation & engagement in classroom activities	

Software Development

Project No.	Project Title	
Generating Complex Software Systems with Large Language Models		
47	Physics-Guided Machine Learning for Predicting Cloud Movement to enable Laser Satellite Communications	
55	Leveraging Existing Mocks and Stubs to Automatically Generate Dependency Test Cases	
113 What rubbish?		
20	Defective Pallet Detection	

Students	Display Lab
Tihann Bergh , Anthony Garcia-Scholtz	Radio Systems (405.736, Lab)
Ciaran Carroll , Rebecca Fitzpatrick	Control & Signal Processing (405.722, Lab)

Students	Display Lab
Timothy Cashmore , Brayden Hamilton	Robotics (405.652, Lab)
Darren Ho, Thomas Yeh	Robotics (405.652, Lab)
Omar Bushnaq , Sujaanan Jeyaseelan	Robotics (405.652, Lab)
Akansha Aggarwal , Anyssa Mojica	Robotics (405.652, Lab)
Elijah Kahuroa-Stainton , Albert Paik	Robotics (405.652, Lab)

Students	Display Lab
Chushu Feng , Nurin Syahirah Samsuria	Control & Signal Processing (405.722, Lab)
Zoe Ries, Sasha Taylor	Control & Signal Processing (405.722, Lab)
Stephen Fang, Nicholas Lianto	MDLS (405-559)
Selin Akkaya), Moeka Nakane	MDLS (405-559)
Chanul Eriagama , Caleb Matthew	MDLS (405-569)

Students	Display Lab
Benjamin Hume, Quaid Sage	Control & Signal Processing (405.722, Lab)
Yi-Chen Hsiao , Woojin Jeon	Control & Signal Processing (405.722, Lab)
Ming Huang , Venxia Niu	Radio Systems (405.736, Lab)
Joshua Browne , Chris Kwon	Radio Systems (405.736, Lab)
Kevin Cheung , Hayley Smith	Radio Systems (405.736, Lab)

Students	Display Lab
Noah Hagar-Dent, Aaron Worsnop	HASEL (405.662, Lab)
Cameron Dean , Samuel Kurian	HASEL (405.662, Lab)
Jamie Lee , Flynn Teh	HASEL (405.662, Lab)
Daniil Vasan , Andy Zhang	Radio Systems (405.736, Lab)
Vihan Dishawal , Wilson Wu	Robotics (405.652, Lab)

Project No.	Project Title
39	Harvesting robot in Smart farm
40	Sign language expression robot
42	Healthcare robot system
70	Robotics to help people in space

Software Development Tools and Processes

Project No.	Project Title	
3	The Impact of Codebase Structure on Understanding Unfamiliar Projects	
22	Investigating inclusion of software engineering tools and practices	
34	Redesigning debuggers for usability	
72	A dependency view of software evolution	
99	Evaluating API Usability	
106	Understanding and Resolving Transitive Dependency Conflicts	
107	Ethical Machine Learning for Understanding Collaboration on Github	
111	Understanding figures and graphs in codes and standards	
112	Recognising plans in document sets	
135	Al-Enhanced Crisis Support Training: An Adaptive Learning Platform for Suicide Prevention in Older Adults	

Web tools and Application

Project No.	Project Title	
75	xploring alternatives to DSA for filtering candidates during recruitment	
78	Automated "matchmaking" of internship candidates and employers	
79	Al-driven CV evaluation and technical job application feedback system	
105	identifying undernutrition for healthy aging	
128	Automation in HCI high fidelity grading processes	

Wireless Power Technologies

Project No.	Project Title	
37	Improving Wireless-Power and Computer Vision Disease Recognition for Indoor Agricultural Drones	
66	Jtilizing Auxiliary Coils in EV WPT Systems	
94	Development of wireless energy storage modules for electric cars	
95	Design of wireless charging box for wearable devices	
140	Investigating Robust Wireless Communication Methods Appropriate for High-Power IPT Laboratory Equipment	

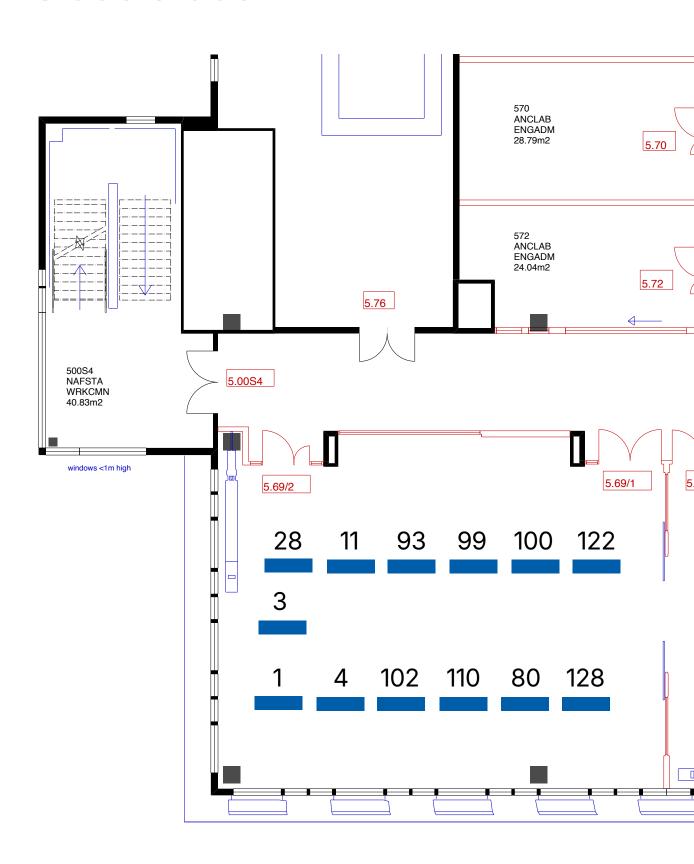
Students	Display Lab
Peter Cheong Seth Yoo	Robotics (405.652, Lab)
Rhys Mitchell , Saarthak Negi	Robotics (405.652, Lab)
Lojanan Sivanantharuban , Harsh Thorat	Robotics (405.652, Lab)
Ethan Chen , Joanne Hii	Robotics (405.652, Lab)

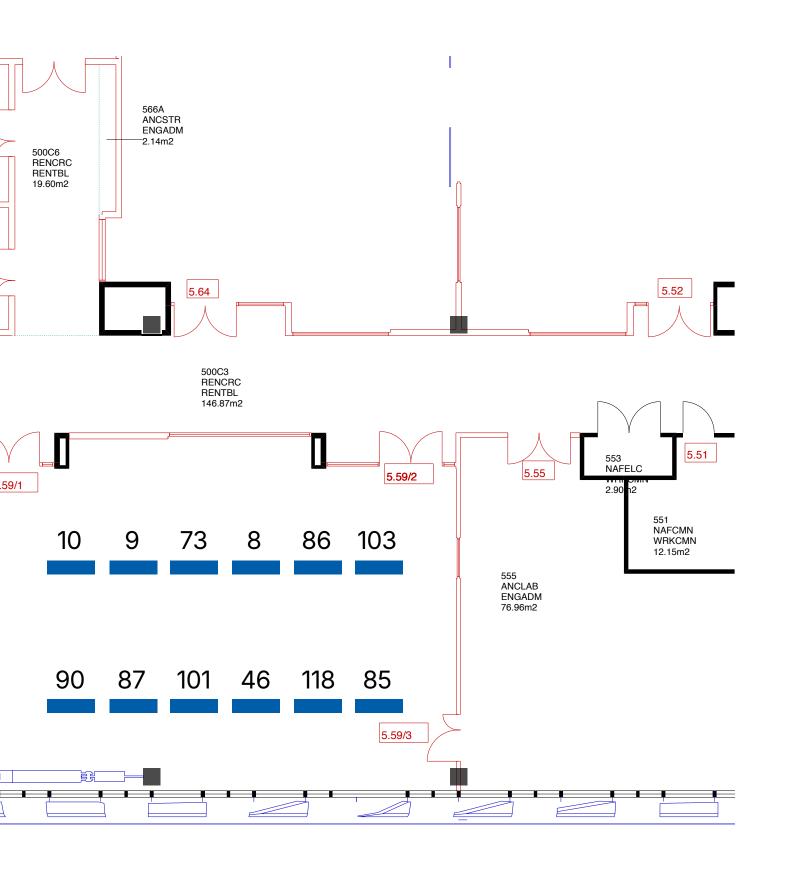
Students	Display Lab
Adam Bodicoat , Nate Williamson	MDLS (405-569)
Grace Kerr , Aarushi Parasrampuria	HASEL (405.662, Lab)
Teaghan Eveleigh , Yutaka Oishi	HASEL (405.662, Lab)
Randy Leean Dayrit, Joel Kendall	Control & Signal Processing (405.722, Lab)
Isaac Shipman , Vincent Tao	MDLS (405-569)
Alvari Kupari , Tony Yin	HASEL (405.662, Lab)
Jenny Wang , Audrey You	HASEL (405.662, Lab)
Liam Black , Ewan Gibbs	Radio Systems (405.736, Lab)
Rusiru Dharmasekhara , Tom Yalda	Radio Systems (405.736, Lab)
William Chong , Varshil Patel	Radio Systems (405.736, Lab)

Students	Display Lab
Sunny Setia , Daniel van der Spuy	Radio Systems (405.736, Lab)
Mehul Killa , Tony Tang	Radio Systems (405.736, Lab)
Alex Liang , Tony Lim	Radio Systems (405.736, Lab)
Xinlin Long , Ruotong Zhang	Control & Signal Processing (405.722, Lab)
Siyeon Kim , Sophie Park	MDLS (405-569)

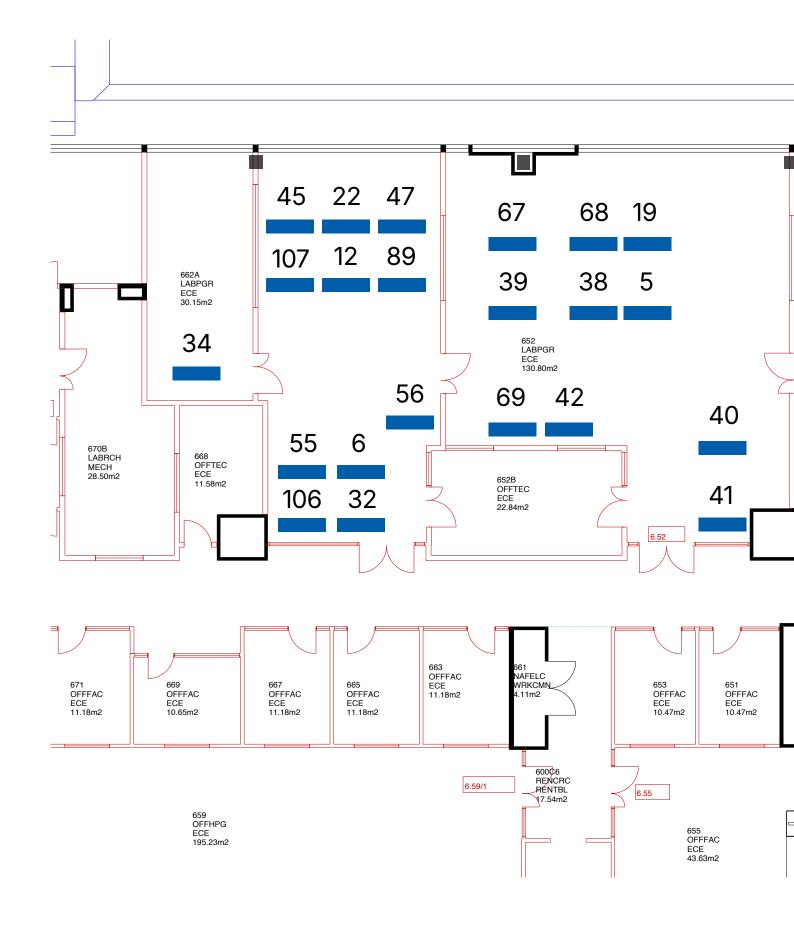
Students	Display Lab
Mekal Covic , Emanuel Phan	Power Electronics (405.614, Lab)
Asha Goddard , Regan Harris	Power Electronics (405.614, Lab)
Harrison Bound , Alex Kacprzak	Power Electronics (405.614, Lab)
Franz-Ruizhe Li , Yaoyao Zheng	Power Electronics (405.614, Lab)
Ronak Patel, John Phan	Power Electronics (405.614, Lab)

ECSE: Building 405. Level 5 MDLS 559 & 569





ECSE: Building 405. Level 6 614, 628, 652, 662, 662A





ECSE: Building 405. Level 7 712, 722, 736, 760, & 760C

