

Prescriptions and Schedule of Papers for 2007

Mode of Delivery

*	= Not available in 2007
B1, B2, B3	= Available as a block course
E, E1, E2	= Available extramurally
F1	= Face to face teaching
I, I1, I2, I3, I4, I5, I6, I7, I8, I9, I10, I11, I12, I13, I14, I15, I16, I17, I18, I19, I20, I21, I22, I23, I24, I25, I26, I27, I28, I29, I30, I31, I32, I33, I34, I35, I36, I37, I38, I39, I40, I41, I42, I43, I44, I45, I46, I47	= Available internally

Semesters

S1	Semester One
S2	Semester Two
S3	Summer School
S12	Double Semester

Locations

AG	Auckland Geographic Area
AL	Massey Albany
CG	Christchurch Geographic Area
CH	Christchurch
EM	Employers and Manufacturers Assc
HK	Hokowhitu Campus
HW	Hawkes Bay
MA	Military Stds Inst. Auckland
NT	Email/Internet
PG	Papua New Guinea Geographic Area
PN	Massey Palmerston North
RU	Ruawhoro Campus
SP	Singapore Aviation Academy
TH	Thailand Aviation Academy
TN	Tonga Geographic Area
WG	Wellington Geographic Area
WL	Massey Wellington

Paper No./Title	Credits	Sem	Mode	Loc
Decision Science				
204.200	15 credits	*	*	*
Decision Science				
An introduction to applications of deterministic and stochastic decision-making methods. Topics covered include linear programming, simulation, queues, decision analysis and project management. Most examples and assignment problems will be spreadsheet-oriented.				
204.201	15 credits	S1	E	PN
Linear Programming				
Formulating models for real world problems in mathematical terms. Solving models using the Simplex Algorithm, its variations, and the duality theorem. Gauging the value of solutions using sensitivity analysis. Specific algorithms for finding solutions to special types of problems such as the Transportation Problem and the Assignment Problem. Some advanced formulation techniques, including use of integer variables, and solution of linear programs using computer packages.				
204.301	15 credits	*	*	*
Optimisation				
Many optimisation problems require more advanced tools than are taught in 204.201. This course introduces such tools as integer programming, nonlinear optimisation, heuristic problem-solving, and stochastic optimisation techniques, including simulated annealing and genetic algorithms. Students will solve a range of real-world problems using computers to implement these algorithms.				
204.302	15 credits	*	*	*
Operations Research Applications				
Operations Research is the quantitative component of the efficient management of the flow of people, products, and information. A selection of real-world problems in traffic modelling, inventory management, timetabling, scheduling and related areas is used to illustrate the application of a range of practical tools for optimization. Case studies and examples are based on the research interests and experience of the contributing staff.				
204.380	15 credits	S2	I	PN
Project				
204.701	15 credits	*	*	*
Advanced Heuristics in Decision Science				
Theory and practice for advanced techniques in approximate solution of combinatorial optimisation problems. An introduction to local search. Heuristic design principles. Recent metaheuristic strategies such as Tabu Search and Genetic Algorithms. Applications.				

Paper No./Title	Credits	Sem	Mode	Loc
204.702	15 credits	*	*	*
Advanced Decision Science Applications				
Topics from: Modelling and solution methods for plant location and network design problems; mathematical programming; Lagrangian relaxation methods.				
204.743	15 credits	*	*	*
Studies in Optimisation				
Topics selected from advanced theory and computational procedures for optimisation, including decomposition and non-convex programming; advanced network optimisation; nonlinear optimisation; graph algorithms.				
204.790	15 credits	S1	I	PN
Special Topic				
204.791	15 credits	S2	I	PN
Special Topic				
204.792	30 credits	S12	I	PN
Special Topic				
204.798	30 credits	S12	I	PN
Research Report				
204.897	60 credits	S1	I	PN
Thesis (Year 1)				
		S12	I	PN
		S2	I	PN
204.898	60 credits	S1	I	PN
Thesis (Year 2)				
		S12	I	PN
		S2	I	PN
204.899	120 credits	S12	I	PN
Thesis				
204.900	120 credits	S12	I	PN
PhD Decision Science				