

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	Ruawharo 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
Aviation Studies				
190.104	15 credits	S1	I	PN
Principles of Navigation I		S2	I	PN
An introduction to navigational principles, including the form of the Earth, direction on the Earth, aeronautical charts, operating avionics, payload and fuel planning and flight planning. This paper includes a study of the operational requirements for visual flight, and the application of the flight navigating principles and procedures to aircraft operations. This is part 1 of a two part paper				
190.105	15 credits	*	*	*
Aviation Support Studies (Met)				
Visual Aviation: A study of the integration of the art theory and practice for flight operations and flight standards.				
190.106	15 credits	*	*	*
Aviation Physics				
An introduction to basic mechanics (statics and dynamics); DC electrical circuit theory; AC circuit theory and an introduction to fluids (statics and dynamics); elementary heat and thermodynamics. The paper provides candidates with preparatory knowledge for aerodynamics and aircraft systems.				
190.107	15 credits	S1	I	PN
Human Performance		S2	I	PN
The application of information processing strategies for improving performance in learning, problem-solving, decision-making, interpersonal interrelations, coping in situational anxiety and mental rehearsal. In addition, the paper will include an introduction to aviation medicine.				
190.108	15 credits	*	*	*
Aviation Support Studies (Law)				
Visual Aviation Law: An introduction to the aviation law as it applies to national systems. This paper enables pilots to use operational procedures and facilities required by civil aviation and air traffic control organisations.				
190.109	15 credits	S1	I	PN
Aviation Studies		S2	B1	SP
An introduction to the interaction of components in the aviation system, including human resources, aircraft, airports and airways systems.				

Paper No./Title	Credits	Sem	Mode	Loc
190.110	30 credits	*	*	*
Introduction to Flying				
An integrated flight practicum with topics in aviation law, meteorology, navigation/flight planning, aircraft technical knowledge, human factors and flight radio-telephone, leading to the CAA PPL examination.				
190.111	15 credits	S1	I	PN
Introduction to Flying I		S2	I	PN
An integrated flight practicum with topics in aviation law, meteorology, aircraft technical knowledge, human factors and flight radio-telephone, leading to the CAA PPL examination.				
190.112	15 credits	S1	I	PN
Introduction to Flying II		S2	I	PN
An integrated flying practicum covering cross-country navigation, instrument flying culminating in a Private Pilot Licence (PPL) issue flight test. Ground subjects covered include cross-country navigation, introduction to New Zealand meteorological conditions, navigation aids and their uses for Visual Flight Rules (VFR) pilots, and human factors, including aeronautical decision-making and flight instruments.				
190.116	15 credits	S1	B1	SP
Introduction to Management in Aviation		S1	B1	TH
This paper provides an overview of management concepts in the aviation industry. It introduces various functional areas such as Human Resource Management, Marketing, Strategic and Operational Management, International Business and Aviation Economics.				
190.117	15 credits	S1	B1	SP
Introduction to Human Factors		S1	B1	TH
The application of information processing strategies for improving performance in learning, problem-solving, decision-making, interpersonal interrelations, coping in situational anxiety and mental rehearsal.				
190.118	15 credits	S1	I	PN
Aeroscience I		S2	I	PN
An introduction to mathematical principles and basic physics as they relate to aerodynamics and aircraft systems. The topics in this paper include manipulation of algebraic formulae; elementary geometry; graphs, vectors; kinematics; momentum; angular velocity; equilibrium; and work, energy, and power.				

Paper No./Title	Credits	Sem	Mode	Loc
190.119 Aeroscience II	15 credits	S1 S2	I I	PN PN
An introduction to mathematical principles and basic physics as they relate to aerodynamics and aircraft systems. The topics in this paper include differential calculus; statistics for risk analysis; elementary heat and thermodynamics; electromagnetism; DC electrical circuit theory and an introduction to hydrostatics.				
190.120 Aeronautical Legislation	15 credits	S1 S2	I I	PN PN
This paper includes the integration of theory and practicum for Aviation legal systems, including visual flight rules and instrument flight rules. This is an integrated paper.				
190.121 Aeronautical Meteorology	15 credits	S1 S2	I I	PN PN
A consideration of the meteorological hazards in aviation, such as airframe icing, turbulence, thunderstorms, reduced visibility and the organisation of meteorological data acquisition and forecasting systems. This paper includes the application of meteorological considerations for operations under visual and instrument flight rules. This is an integrated paper.				
190.122 Introductory Air Safety Investigation	15 credits	S1 S1 S1	B1 B1 E	SP TH PN
This is the first paper in a series of three. The aim of these papers is to prepare students to take part in aircraft accident investigations. They will also be of benefit to those who need to understand the investigation process, such as managers of airlines and regulatory authorities. This first paper deals with the methodology of on-site investigation.				
190.123 Aircraft Systems	15 credits	S1 S2	I I	PN PN
A study of the electrical, mechanical, hydraulic systems and instrumentation as they apply to a light aircraft. Develop aircraft propulsion systems, the theory of aircraft piston engines, their performance and control. A study of aircraft fluid powered mechanisms with an introduction to aircraft avionics systems. This is in integrated paper.				
190.124 Aircraft Performance	15 credits	S1 S2	I I	PN PN
The study of flight mechanics for single-engine aircraft, including propeller theory, aircraft performance management and operational performance requirements. This paper will also include single-engine visual, instrument and night flight operations. Corequisites will include mastery performance in aeroplane manoeuvring, flight handling, operating the engines and calculating weights and balances for single-engine aircraft. This is an integrated paper.				
190.125 Rotorcraft	15 credits	S2	I	AL
This introductory paper deals with construction methods, maintenance procedures and safety precautions pertaining to common rotorcraft types found in New Zealand. Specific topics covered are theory of flight, structures, landing gear systems, rotor systems, control systems, fuel systems, hydraulic systems, power transmission systems, environmental systems and weight and balance control. Students will undertake field trips to reinforce the theory with practical demonstrations and work exercises. The paper meets some of the academic requirements for the award of a rotorcraft maintenance rating.				
190.126 Avionics and Compass Systems	30 credits	S1	I	AL
This paper provides an introductory study of simple aircraft avionics. It will include circuits, batteries, DC and AC generation systems, DC and AC motors, electrical system hardware, pitot-static systems, vacuum systems, gyroscopes, gauges and instruments, servomechanisms, communications equipment, radio antennas, solid state devices, PLC's, component handling, direct and remote reading compasses and compass compensation methods. Students will undertake field trips to reinforce				

Paper No./Title	Credits	Sem	Mode	Loc
the theory with practical demonstrations and work exercises to gain an appreciation of maintenance procedures and safety issues.				
190.141 Aircraft Engineering	15 credits	S1	I	AL
This paper provides an introduction to aviation hardware, products and technical practices associated with aircraft maintenance. Topics covered will include definitions and abbreviations, general maintenance standards, aviation publication systems, aircraft drawings, metrology, ground handling equipment and hand tools aircraft standard hardware, gasses and compounds and workshop practices. Built into the paper are field trips and practical demonstrations designed to give the candidate an appreciation of safe maintenance procedures in the aircraft maintenance environment.				
190.142 Aircraft Materials	15 credits	S1	I	AL
An introduction to the properties of metal alloys, factors affecting the selection of aircraft materials, heat treatment and testing of aircraft materials and metal working processes. Emphasis is given to identification of materials, cause and identification of defects, corrosion control, non-destructive testing, aircraft welding, fabrication techniques and maintenance of plastics and modern composite materials.				
190.143 Aeroplane Engineering I	15 credits	*	*	*
An introduction to basic aeroplane systems typical in general aviation. Topics dealt with are aeroplane structures, landing gear systems, control systems, fuel systems, hydraulic systems, environmental systems and weight and balance control, aircraft ground handling, maintenance procedures and safe working practices. Practicum activities will integrate theory and practice.				
190.151 Aircraft Systems I (Part 2)	15 credits	*	*	*
A study of the electrical, mechanical, hydraulic systems and instrumentation as they apply to a light aircraft. An introduction to aircraft propulsion systems, the theory of aircraft piston engines, their performance and control. A study of aircraft fluid powered mechanisms with an introduction to aircraft avionics systems.				
190.152 Aircraft Performance I (Part 2)	15 credits	*	*	*
A study of flight mechanics for single-engine aircraft, including propeller theory, aircraft performance management and operational performance requirements. This paper will also include single-engine visual, instrument and night-flight operations. Corequisites will include mastery performance in aeroplane manoeuvring, flight handling, operating the engines and calculating weights and balances for single engine aircraft.				
190.154 Principles of Navigation II	15 credits	S1 S2	I I	PN PN
An introduction to navigational principles, including the form of the earth, direction on the earth, aeronautical charts, operating avionics, payload and fuel planning and flight planning. This paper includes a study of the operational requirements for visual flight and the application of flight navigating principles and procedures to aircraft operations.				
190.164 Aeronautical Science (AME)	15 credits	*	*	*
An introduction to the mathematics and physics required to satisfactorily complete the technical papers of the BAv(AM) degree.				
190.182 Introduction to Aeroplane Performance	30 credits	*	*	*
This paper introduces the use of, interpretation and adherence to civil aviation law and publications and advanced aircraft performance and pilot command handling skills to a professional licence mastery level. It also expands on 'airmanship' and situational awareness required in the flying environment and engine handling characteristics as experienced				

Paper No./Title	Credits	Sem	Mode	Loc	Paper No./Title	Credits	Sem	Mode	Loc
over a range of likely scenarios and conditions. As the ability to absorb new information at a greater rate develops, the student will be gradually introduced to multi-task performance in the management of the aircraft. A study of meteorology and its application to aircraft commercial operations is also included.					190.154 Principles of Navigation 2, however, the practicum component covers ground and flight events requiring helicopter competencies. (BAv – HTP (Helicopter)).				
190.184	30 credits	*	*	*	190.197	15 credits	*	*	*
Instrument Rating (Aeroplane)					Instructional Design for Flight Instruction				
This paper is designed to cover the theoretical and practical requirements for the operation of aeroplanes under Instrument Flight Rules in both normal and emergency situations. The paper covers both single and two crew operations with extensive use being made of cockpit procedures trainers. Emphasis is placed on the use of autopilot and flight director systems. The paper covers the theoretical and practical requirements for the issue of the CAA instrument rating.					This paper covers the principles and techniques used for the design and implementation of aviation training and education. Students will be introduced to behavioural and cognitive models of learning and will apply these to norm-based and criterion-referenced learning outcomes. Specific examples of mastery-based teaching methods will be used, including programmed instruction and computer-based learning.				
190.188	30 credits	*	*	*	190.198	30 credits	*	*	*
Introduction to Aeroplane Handling					Human Factors for Flight Instruction				
An introduction to the principles of flight as they apply to normally aspirated single-engine piston aircraft safe operation and the management of normal and non-normal procedures and situations. This paper will include the identification of the aircraft's control surfaces and systems, ground and air operating procedures and the motor skill requirements necessary for taxiing, take-off, circuits and landing the aircraft competently and safely. Basic voice procedures, radio phraseology and terminology for a pilot to communicate with other aircraft and air traffic control are included.					This paper is designed to sensitise the flight instructor to the human factors effect that he or she will have in a learning situation with ab initio students, particularly in airborne situations. The paper will review pilot-based human factor outcomes and relate these to ways of inculcating the constructs through formal learning. Additional studies will include the nature of organisational and systemic error, the management of risk and intercultural effects on flight deck performance.				
190.189	15 credits	*	*	*	190.199	15 credits	S1	I	PN
Basic Gas Turbine Operations					Flight Instruction Assessment				
A study of the principles of operation and construction of aircraft gas turbine engines, including identification and rectification of abnormal operation. Students will practice engine starting, shutdown, and normal and emergency procedures in simulated environments (such as in the Hawker Pilot Trainer HPT flight training device). The paper is designed to meet the theoretical requirements for CAA examination leading to the award of a Gas Turbine Rating.					Students will be introduced to the assessment of both theoretical and performance-based knowledge. Basic assessment principles including formative and summative assessment will be introduced with applications of these principles to teaching and evaluation. Students will be required to design and implement a variety of test and observational devices in ground and airborne situations.				
190.190	30 credits	*	*	*	190.201	15 credits	S1	I	PN
Special Topic					Aircraft Systems II (Part I)		S2	I	PN
190.191	30 credits	*	*	*	190.203	15 credits	S1	I	PN
Introduction to Helicopter Handling					Air Traffic Control/Aviation Law	S2	I	PN	
This paper introduces students to the principles of flight as they apply to normally aspirated single-engine piston helicopter aircraft and the management of safe normal and non-normal procedures and situations. The paper will include the identification of the helicopter's control surfaces and systems, ground and air operating procedures and the motor skill requirements necessary for hovering, take-off, circuits and landing the helicopter competently and safely. Basic voice procedures, radio phraseology and terminology for a pilot to communicate with other aircraft and air traffic control are included.					The integration of theory and practice for Flight Operations and Flight Standards. This paper will enable pilots to use the operational procedures and facilities required by civil aviation and air traffic control organisations. Students will be introduced to international aviation systems, including the Covenants of the International Civil Aviation Organisation (ICAO).				
190.192	30 credits	*	*	*	190.204	15 credits	S1	I	PN
Introduction to Helicopter Performance					Flight Planning and Advanced Navigation (Part I)		S2	I	PN
This paper introduces the use of, interpretation and adherence to civil aviation law and publications and advanced aircraft performance and pilot command handling skills, to a professional licence mastery level. It also expands on 'airmanship' and situational awareness required in the helicopter flying environment and engine handling characteristics as experienced over a range of likely scenarios and conditions. As the ability to absorb new information at a greater rate develops, the student will be gradually introduced to multi-task performance in the management of the helicopter. A study of meteorology and its application to helicopter commercial operations is also included.									
190.194	30 credits	*	*	*	190.205	15 credits	S1	I	PN
Helicopter Principles of Navigation II					Crew Resource Management	S2	I	PN	
This integrated paper includes a study of the operational requirements for visual flight and the application of flight navigating principles and procedures. The academic content is parallel to the aeroplane paper					The development of practical competencies in pilot judgement and crew resource management which enhance decision-making, effective interpersonal communication styles, leadership attributes and team concepts. This paper is based on the requirements of the European Civil Aviation Conference (ECAC) and the International Civil Aviation Organisation (ICAO) for professional flight crew licences.				
					190.206	15 credits	S1	I	PN
					Aerodynamics		S2	I	PN
					Part I of a two-part in depth study of aerodynamic and flight mechanics principles. The paper will include aspects of fluid statics and dynamics; low and high-speed aerodynamics, propeller theory, performance, stability and control of aircraft at subsonic and supersonic flight speeds.				
					190.207	15 credits	S2	B1	SP
					Aviation Psychology		S2	B1	TH
					A detailed consideration of the application		S2	E	PN
					of psychological principles to flight deck per		S2	I	PN
					formance, including a range of topics from psycho-physiology to perceptual and cognitive processes.				

Paper No./Title	Credits	Sem	Mode	Loc
190.209 Helicopter Aerodynamics and Systems	15 credits	*	*	*
This paper includes an in-depth study of helicopter aerodynamics, technical knowledge and systems including gyroscopic, horizontal and vertical movement, hovering automotive flight and stability, transmission systems, power plants, ancillary systems as they apply to the flight dynamics of advanced air transport helicopters.				
190.211 Aviation Strategic Management	15 credits	S2	B1	SP
An examination of the primary issues shaping strategic management in the aviation industry. The approach is multi-disciplinary, with emphasis on the economic analysis of the effects of market deregulation and their impact on managerial practice.				
190.212 Special Topic	30 credits	S1	I	AL
190.215 Heavy Aeroplane Performance	15 credits	S1	E	PN
An analysis of fundamental performance considerations and compliance requirements for CAR Part 121 'A' performance aeroplanes, focussing on the relationship between aircraft performance and flight planning in an airline context.				
190.216 Aviation Human Factors	15 credits	S2	B1	SP
The paper provides an overview of the basic concepts of human factors in aviation, human performance, and issues relating to judgement and decision-making in this high risk environment. Communication and other aspects of social psychology in various aviation environment are also explored.				
190.217 Instruction and Learning in Aviation	15 credits	S1	B1	SP
An examination of the complex interaction of learning factors as they apply to ground and airborne instruction and the application of instructional strategies which maximise learning outcomes.				
190.220 Managing Aviation Systems	15 credits	S1	B1	SP
A study of the management of aviation systems such as airports, airlines, airways civil aviation authorities and aviation organisations. Topics include the management processes of planning, the provision and maintenance of systems and the auditing of systems effectiveness.				
190.221 Advanced Support Studies	15 credits	S1	I	PN
A study of the global climate and of regional climates at the levels at which modern jet aircraft fly and at lower levels. It includes a discussion of the sources and interpretations of climate data. The emphasis is on aspects of climate that effect flight. Advanced topics in aviation meteorology include environmental effects of aviation and the principles of weather radar.				
190.222 Basic Air Safety Investigation	15 credits	S2	B1	SP
This is the second paper in a series of three. The aim of these papers is to prepare students to take part in aircraft accident investigations. They will also be of benefit to those who need to understand the investigation process, such as managers of airlines and regulatory authorities. This second paper completes the study of the methodology of on-site investigation and deals with the specialised matters of survivability in accidents and the analysis of collisions.				
190.224 Environmental Impacts of Aviation	15 credits	S2	B1	SP
Advanced study of the environment of aviation, the impacts of aviation on the environment and the methods for reducing				

Paper No./Title	Credits	Sem	Mode	Loc
190.225 Introduction to Research Methods in Aviation	15 credits	S1	B1	SP
This paper presents an introduction to the unique theories and methods of research in the aviation industry. A range of both quantitative and qualitative methodologies is explored, and various techniques for aviation research are examined. Specific research methods are explored related to flight crew selection, aviation psychology, accident investigation and aviation training. The paper introduces basic research techniques, including the use of common statistical and data analysis approaches.				
190.226 Measurement of Human Factors in Aviation	15 credits	*	*	*
This paper provides an overview of the methods involved in the measurement of human factors in aviation. The paper will introduce specific measurement techniques relating to aviation, including the assessment of crew resource management behaviours, accident investigation and organisational culture. Particular focus will be placed on recent developments in relation to the safety auditing procedures which now form an essential aspect of aviation management.				
190.233 Airspace Systems	15 credits	*	*	*
The coordination of flight information services and alerting services. The application of the AFTN network and the transfer of information and aircraft between the various air traffic services. The four-week practicum for this paper covers an Air Traffic Control Supervisor/Managers programme.				
190.235 Air Transport Cockpit Systems	15 credits	*	*	*
This paper introduces modern Air Transport Operations including cockpit technology and systems. The practicum for this paper will demonstrate significant aspects of Air Transport Operations.				
190.237 Air Transport Cockpit Systems	15 credits	S1	I	PN
This paper introduces modern Air Transport Operations including cockpit technology and systems. The practicum for this paper will demonstrate significant aspects of Air Transport Operations.				
190.240 Air Power	15 credits	S2	E	PN
Air Power Studies provides an overarching examination of the characteristics of air power and a grounding in the history, development and literature of air power issues and the opportunity to examine the application of air power within a student's personal aviation experience and, where applicable, professional aviation experience.				
190.241 Propulsion Technology	30 credits	*	*	*
This paper provides the maintenance principles and practices pertaining to both piston and gas turbine engines. Specific topics are engine theory, engine construction, ignition systems, fuel systems, lubrication systems, starting systems, engine controls, fire protection, propellers, engine boosting, compressor stalling, engine testing, preservation and trouble shooting. The paper will include engine performance and performance monitoring. Students will undertake field trips to reinforce the theory with practical demonstrations and work exercises. The paper meets some of the academic requirements for the award of piston and gas turbine engine maintenance ratings.				

Paper No./Title	Credits	Sem	Mode	Loc
190.242 Aircraft Structures and Systems Technology	15 credits	S1	I	PN
This paper provides the maintenance principles and practices associated with modern transport aircraft. Specific topics covered are the theory of modern aircraft construction, control systems, hydraulic systems, landing gear, pneumatic systems, pressurisation systems, air-conditioning systems, fuel systems, oxygen systems, ice and rain protection, reliability fundamentals, aircraft structural maintenance concepts, preservation and systems trouble shooting. Students will undertake field trips to reinforce the theory with practical demonstrations and work exercises. This paper meets some of the academic requirements for the award of Group 5 & 6 Aeroplane Maintenance Ratings.				
190.243 Air Law (AME)	30 credits	S1	I	AL
This paper covers the regulatory requirements relating to the maintenance and operation of aircraft. Specific topics are the ICAO and CAA Rules system, aircraft type certification, aircraft maintenance engineer licensing, company approvals, inspection authorisations, maintenance responsibilities of the air transport aircraft operator. The approved maintenance firm, quality assurance, maintenance recording, routine and unscheduled maintenance requirements, airworthiness directives, aeronautical stores control, defect control, and certification of release to service.				
190.244 Inspection and Supervision	15 credits	*	*	*
This paper covers inspection and supervision practices specifically relating to licensed engineers during the course of their employment in a maintenance organisation. Specific topics will include development and control of company expositions, responsibilities of accountable managers, staff supervision, inspection techniques and practices, time management, maintenance planning, production, employment relations, problem-solving, teamwork, asset control, job costing and budgets.				
190.245 Military Systems, Technology and Maintenance Practices	30 credits	S2	I	AL
This paper covers military specific philosophies and practices relating to the maintenance of military aircraft and equipment. Specific topics will include military exclusive technology such as weapons, explosives, avionics, maintenance organisational control, maintenance programmes and planning, supervision and certification requirements, modification and design control, maintenance of ageing military aircraft, battle readiness and battle damage assessment, control of contracted maintenance, integration of maintenance with other armed services, maintenance records and technical administration, stores control and manufacturer's service information. Students will undertake field trips to defence establishments to reinforce the theory with practical demonstrations and work exercises. The paper addresses the differences relating to employment in the military maintenance environment at trade, supervisor and management levels.				
190.246 Avionic Systems Technology	30 credits	S1	I	AL
This paper covers avionics equipment and maintenance practices relating to modern aircraft. The subject is intended to provide basic knowledge preparing students for airline specific avionics type rating courses after qualification as a licensed aircraft maintenance engineer. Topics specifically covered include electrical systems, servo mechanisms, oxygen systems, radio navigation aids, automatic flight control systems, digital techniques, solid state devices, inertial navigation systems, radio theory, antennae and feeders, radio and radar systems and handling static sensitive devices. Students will undertake field trips to reinforce the theory with practical demonstrations and work exercises.				
190.247 Principles of Mechanical Overhaul	30 credits	*	*	*
This paper covers overhaul principles and practices pertaining to aircraft powerplants, airframe components, propellers, gearboxes, transmissions and rotors. Specific topics covered include stripping, cleaning, viewing, processing, assembly and testing of mechanical				

Paper No./Title	Credits	Sem	Mode	Loc
components. Also included are topics pertaining to workshop design, overhaul documentation and data, specialised overhaul equipment, inspection and repair processes, damage limits, defect reports, strip reports, causes of wear and damage, metrology and overhaul documentation. Students will undertake field trips to reinforce the theory with practical demonstrations and work exercises.				
190.248 Avionic Workshop Technology	15 credits	S1	I	AL
This paper covers principles and practices pertaining to the overhaul and workshop maintenance of electrical, instrument, radio and radar equipment. Specific topics covered include test and measuring equipment, electrical machines, instruments, servomechanisms, digital techniques, solid state devices, autoflight equipment, navigation equipment, radio equipment and radar equipment. Also included are topics pertaining to workshop design, overhaul documentation and data, specialised overhaul equipment, inspection and repair processes, damage and test limits, defect reports, strip reports, causes of wear and damage and overhaul documentation. Students will undertake field trips to reinforce the theory with practical demonstrations and work exercises.				
190.249 Aircraft Maintenance Management	30 credits	S1 S2	I E	AL PN
This paper is designed to provide the student with knowledge appropriate to the management of an aircraft maintenance organisation. Topics specifically covered include maintenance programme design, maintenance of ageing aircraft, maintenance requirements for aircraft operating under EROPS and ETOPS, maintenance concessions, development of modifications and major repairs, approved data, design organisations, technical services, examination and testing of engineers for company approvals, reliability control programmes, defect analysis and reporting, aircraft importation and export, bogus parts control, MSG2 and MSG3 structural maintenance programmes, maintenance watch, the aircraft maintenance requirements under NZCAA Rule Part 145, 135, 125, 121, 43 and customer services. Students will undertake field trips to reinforce the theory with practical demonstrations and work exercises.				
190.251 Aircraft Systems II (Part 2)	15 credits	S1 S2	I I	PN PN
A study of the electrical, mechanical and hydraulic systems as they apply to multi-engine aircraft. The paper will include further studies of aircraft propulsion systems, including gas turbine technology. The paper will introduce advanced aircraft avionics; environmental control; instrumentation for sophisticated aircraft. Basic study of the structure for heavy aeroplanes will be undertaken.				
190.254 Flight Planning and Advanced Navigation (Part 2)	15 credits	S1 S2	I I	PN PN
The development of practical flight planning competencies, including route planning, fuel planning, load planning and flight plan amending for instrument flight operations, and for long distance heavy transport operations. The use of in-flight navigation techniques, in-flight emergency considerations, manual navigation, instrument flight management, search and rescue techniques, electronic flight planning and an appreciation of future air navigation systems included.				
190.256 Aerodynamics (Part 2)	15 credits	S1 S2	I I	PN PN
An in-depth study of the aerodynamic and flight mechanics principles. The paper will include aspects of fluid statics and dynamics; low- and high-speed aerodynamics, propeller theory, performance, stability and control of aircraft at subsonic and supersonic flight speeds.				
190.259 Turbo-prop/jet Flight Systems and Operations	30 credits	*	*	*
This integrated paper introduces jet turbine ground and flight operations and covers both the theoretical and practical aspects of turbine powered flight.				

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190.260 Cabin Crew Management I A study of aviation cabin crew management that focuses on the evolution of the service and safety roles of the professional Flight Attendant. The course covers a wide range of relevant topics including social changes, service development and delivery, international cross-cultural issues in passenger management, and management techniques for distressed, violent, abusive or special needs passengers.	15 credits	*	*	*
190.263 Safety Management for Cabin Crew The application of human factors to operational cabin crew performance, including cabin safety hazards. Emphasis will be given to preventing, preparing for and dealing with in-flight emergencies and post-crash emergency management.	15 credits	*	*	*
190.272 Helicopter, Flight Planning and Advanced Navigation This integrated double-semester paper is specifically designed for students undertaking the second-year helicopter option of the B Av–ATP. The student must meet the same academic Navigation and Flight Planning requirements as fixed wing pilots are required to meet in papers 190.204 and 190.254. The practicum component requires the student to apply this knowledge and demonstrate the related in-flight competencies in helicopters.	30 credits	*	*	*
190.277 Flight Systems – Tactical Flight Operations This integrated paper studies the use of the aircraft as a highly manoeuvrable platform for the implementation of operational requirements. The practicum includes competencies in formation flying and tactical navigation.	15 credits	*	*	*
190.279 Flight Systems – Performance Manoeuvre and Aerobatics This integrated paper enables aeroplane pilots who already hold a minimum licence of PPL (A) to understand the underlying principles and to become competent in advanced flight manoeuvres including maximum rate performance, spinning and aerobatics.	15 credits	*	*	*
190.280 Special Topic	15 credits	*	*	*
190.281 General Aeroplane Systems This paper is a study of aircraft technical knowledge as it applies to the aircraft's electrical systems, mechanical systems, hydraulic and avionics systems. The focus of this 'procedural knowledge' will be on its competent and safe application to the mastery of the cockpit's instruments and systems. The study will also include the theory and practical use of various aircraft piston engines and their performance and control in varying conditions and under changing workloads and conditions. The key objective will be to educate the student to expeditiously identify actual or potential problems that may be evidenced on the ground or in the air and competently resolve them.	15 credits	*	*	*
190.283 Aviation Law This paper examines the application of aviation law beyond the initial professional licence issue. The paper meets the requirements for the NZ Civil Aviation Authority Air Transport Pilot Licence (ATPL) qualification and introduces the student to international aviation systems, including the International Civil Aviation Organisation (ICAO). A special emphasis is placed on the responsibilities and accountabilities of aviation personnel and management systems under the CAA Rules regime.	15 credits	*	*	*
190.284 Commercial Navigation This paper covers the principles of air navigation, including map reading, use of aeronautical charts, technical and practical flight planning including fuel and payload management. It also includes planning for diversions,	30 credits	*	*	*

Paper No./Title	Credits	Sem	Mode	Loc
planning alternative routes due to weather and managing non-normal procedures and engine failures en route. The paper is designed to enable students to apply flight navigation principles and procedures to aircraft operations at a professional licence level of competency. Corequisite mastery is the operation of a single-engine aircraft to a professional licence standard in visual flight cross-country navigation activities by both day and night.				
190.286 Helicopter Performance This integrated paper requires the student to achieve a professional licensing level (ATPL-H) of helicopter systems and helicopter aerodynamics and their application to helicopter air transport operations. The practicum requires students to demonstrate multi-task management and command skills and advanced performance applied-handling to a professional Licence mastery level, in a helicopter while adhering with civil aviation law and publications.	30 credits	*	*	*
190.287 Pilot Human Factors This is a study of the interaction of humans and aviation systems in the context of the pilot as a systems manager. Included in the study are the contributions of psychology, sociology, physiology and management in the identification of optimal human performance in complex technological systems. Attention will be paid to the pilot as an individual performer and the pilot as a team performer in multi-crew contexts. The paper of study is designed to enhance each student's ability to clearly identify problem situations (both system or interpersonal), arrive at a series of possible solutions, evaluate the possible solutions in order to choose the best possible alternative and implement a safe and expeditious course of action. Historical events will be used in case studies as a means of identifying the causes of error in aircraft accidents.	15 credits	*	*	*
190.288 Advanced Aircraft Handling This paper covers the theory and practice of aircraft operations to an advanced level. The emphasis of this paper is on knowledge and skills in relation to handling the aircraft itself. The student will explore the dynamics of flying the aircraft to the boundaries of its performance envelope. Various standard flying techniques will be analysed and alternative techniques evaluated. The student will also fly various performance parameters set by the manufacturer and confirm these by appropriate test flights. The practicum element of this paper can be undertaken in either single-or multi-engine aircraft.	30 credits	S1 S2 S3	I I I	PN PN PN
190.289 Operating Multi-Engine Aircraft A detailed consideration of the theory and practice of operating multi-engine piston aircraft. This paper studies the construction, systems and operation of a light twin-engine aircraft with an emphasis on the establishment of safe operating practices and covers the requirements for the initial issue of a multi-engine type rating. Normal and emergency operating procedures are practised extensively in the multi-engine procedure trainer and on light twin-engine aircraft.	30 credits	*	*	*
190.290 Flight Instructor Management This paper covers the management and administrative aspects of a flight instructor's role such as report writing and written assessment, management of logbooks and student scheduling, powers of authorisation and authorisation procedures and the responsibilities of supervision of students. This paper is intended to prepare new instructors for the responsibilities they would have if they were to assume a sole instructor position following their initial period under supervision. The paper will also include basic marketing techniques which focus on how to develop customer service skills, meet deadlines and effectively use telecommunication systems as part of a customer support service.	30 credits	*	*	*

Paper No./Title	Credits	Sem	Mode	Loc
190.291	15 credits	S1	E	PN
Special Topic		S2	B1	SP
		S2	B1	TH
		S2	E	PN
190.292	15 credits	S1	E	PN
Special Topic		S2	B1	SP
		S2	B1	TH
		S2	E	PN
190.293	15 credits	*	*	*
General Helicopter Systems				
This paper is a study of helicopter technical knowledge as it applies to the aircraft's electrical systems, mechanical systems, hydraulic and avionics systems. The focus of this 'procedural knowledge' will be on its competent and safe application to the mastery of the helicopter's instruments and systems. The study will also include the theory and practical use of various helicopter piston engines and their performance and control in varying conditions and under changing workloads and conditions. The key objective will be to educate the students to expeditiously identify actual or potential problems that may be evidenced on the ground or in the air and competently resolve them.				
190.294	15 credits	*	*	*
Airline Navigation				
A study of the application of the principles of navigation to modern airline operations on both domestic and international routes. The paper covers the use and limitations of contemporary navigational systems, including GNSS and GPS. It also introduces an understanding of the effect of upper winds and jet streams and their influence on aircraft fuel conservation and management. The paper specifically covers operations in high latitudes and the Pacific and South-East Asian region.				
190.295	30 credits	*	*	*
Airline Flight Planing				
A study of the principles of flight planning for turbo prop and turbo jet aircraft, including the theory and application of flight management systems. This paper examines the impact of the GNSS on flight planning and emphasises flight planning for optimum economy. Flight planning considerations for the South-East Asian and Pacific regions, including operations in volcanic areas and the impact of cyclonic weather conditions, are examined in detail.				
190.296	30 credits	*	*	*
Helicopter Handling				
This integrated paper requires the student to achieve initial air transport pilot licensing competencies. The paper involves basic helicopter flight handling competencies and introduces students to the principles of flight as they apply to normally aspirated single-engine piston helicopter aircraft and human factors including the management of safe normal and non-normal procedures and situations. The paper will include the identification of the helicopter's control surfaces and systems, ground and air operating procedures and the motor skill requirements necessary for hovering, take-off, circuits and landing the helicopter competently and safely.				
190.297	30 credits	S2	I	PN
Aerobatic Aircraft Handling for Flight Instructors				
This paper covers the theory and aircraft handling for basic and advanced aerobatic manoeuvres. Designed to provide flight instructors with advanced aircraft handling techniques, it covers aerobatics, advanced stalling and spinning. Special emphasis is placed on the recognition of and recovery from abnormal attitudes in both visual and instrument flight. The practicum element of the paper will involve up to five hours of aerobatic flight.				
190.298	30 credits	*	*	*
Advanced Turbo-Prop and Jet Handling				
This paper covers the theoretical and practical considerations of the handling and operation of turbine powered aircraft. The paper is designed as a bridge between the operation of a multi-engine piston powered general aviation aircraft and the more advanced types in airline				

Paper No./Title	Credits	Sem	Mode	Loc
operation. The paper covers the theoretical and practical considerations of the handling and operation of turbine-powered aircraft. Students will be required to respond to non-normal and emergency procedures as well as apply crew-resource management skills in their flight deck performance.				
190.299	15 credits	S1	E	PN
Aviation Special Topic		S1	I	PN
		S2	E	PN
		S2	I	PN
190.301	15 credits	S1	I	PN
Flight Instructor Human Factors				
A study of the application of human factor issues such as decision-making, interpersonal relations, communication styles and personality characteristics as they affect flight deck performance in the instructional environment.				
190.302	15 credits	S1	B1	SP
Check and Training for Airlines		S1	B1	TH
This paper is designed for experienced pilots wishing to develop their knowledge in airline check and training concepts.				
190.306	15 credits	S2	B1	SP
Airline Strategic Management		S2	B1	TH
A review of the current state of strategic management in the airline industry. The approach is both multidisciplinary in focus and international in scope. Attention will be focused on the Asia-Pacific region, as the potential location of the world's largest aviation market.				
190.307	15 credits	S1	B1	SP
Airport Planning		S1	B1	TH
A study of demographic, environmental and economic considerations which apply to the design and evaluation of airport facilities.				
190.308	15 credits	S2	B1	SP
Airport Operational Management		S2	B1	TH
An examination of the management of airport systems, such as air-side and land-side facilities, technical and support services which contribute to the operational effectiveness of modern airports. The paper will further examine the relationship between airport authorities and the local community.				
190.309	15 credits	S1	B1	SP
Design of Airways and Air Traffic Systems		S1	B1	TH
An examination of air traffic and air navigational systems and the principles which apply to their operational infrastructure, including the development of visual and instrument flight procedures.				
190.310	15 credits	*	*	*
Computer-Based Learning for Aviation				
This paper is concerned with developing practical skills for designing computer-based lessons in an aviation context.				
190.312	15 credits	*	*	*
Advanced Navigation Systems				
This paper examines the integrated communications, navigation, surveillance (CNS) and air traffic management (ATM) system endorsed by the ICAO Tenth Air Navigation Conference in 1991 and commonly referred to as the Future Air Navigation System (FANS).				
190.313	15 credits	S2	B1	SP
Advanced Aviation Human Factors		S2	B1	TH
This paper explores the role and potential of multi-crew systems in the aviation environment. Emphasis is placed on the effect of stress in the context of individual and group performance in the aviation environment. Issues related to				

Paper No./Title	Credits	Sem	Mode	Loc
communications, performance measurement in aviation, training and simulation and cross-cultural issues will be included.				
190.314 Legal Issues in Aviation	15 credits	S2	E	PN
General principles of law as applied in the context of the airline transport industry. The paper will focus on the application of law to flight crew, airline operations and civil aviation authorities in terms of both international conventions and treaties and of national legislation and law. Issues such as contractual and tortious liability will be considered.				
190.315 Flight Instruction Fundamentals I	15 credits	S12	I	PN
This paper will include principles and techniques for theory, simulator and flight instruction for primary visual flight and day operations, including a review of aircraft performance management requirements. The paper will incorporate the theoretical issues which underpin aviation science and aircraft systems. Students will be given handling experience in aerobatic-rated aircraft.				
190.316 Flight Instruction Fundamentals II	15 credits	S12	I	PN
This paper will include principles and techniques for theory, simulator and flight instruction for navigation, primary visual night and instrument operations, including a review of aircraft performance management. Students will be given experience in advanced navigational technologies such as Global Positions Systems (GPS), etc.				
190.317 Evaluation Methods in Aviation	15 credits	S2	B1	SP
The identification, development and analysis of tests and measures in aviation aptitude, achievement and licensing evaluation.				
190.320 Heavy Aeroplane Performance II	15 credits	S2	B1	SP
An analysis of operational performance considerations in normal, abnormal and emergency situations including the management of aircraft performance in extreme environmental conditions. The paper will focus on operations in an airline environment.				
190.321 Advanced Air Safety Investigation	15 credits	S1	B1	SP
This is the final paper in a series of three. The aim of these papers is to prepare students to take part in aircraft accident investigations. They will also be of benefit to those who need to understand the investigation process, such as managers of airlines and regulatory authorities. This final paper deals with the human factors which underlie many aircraft accidents, the analysis of accident data and the presentation of information in Accident Reports and Safety Recommendations.				
190.327 Managing Cultures in Aviation	15 credits	S1	B1	SP
A critical evaluation of theory and practice of management of cultures in aviation, incorporating: (a) an exploration of theoretical and practical aspects of cultural diversity and its effect on aviation industry in the global business environment; (b) an assessment and management of international, national, and organisational cultural dimensions and their shaping influence in various aspects of aviation operation, such as CRM training, the human-technology interface, communication, and safety investigation.				
190.330 Quality Systems and Aviation Safety Programme	15 credits	S1	I	AL
This paper is designed to provide the student with a comprehensive understanding of quality assurance and safety management as pertaining to the civil and military aviation maintenance and flight operations environments. Topics specifically covered include background to quality systems design, ISO 9000 quality management systems, quality assurance fundamentals, quality control, internal audit requirements,				

Paper No./Title	Credits	Sem	Mode	Loc
creation of procedures and work instructions, flow charting, statistical analysis, quality records, quality auditing techniques and practices, preventative and corrective action control, interpersonal skills for auditors, latent failure, James Reason model, creation of aviation safety programmes, safety analysis and reporting, and international aviation safety developments. Students will undertake practical safety and quality audits. This paper will provide students with the knowledge requirements for IRCA registration as a quality auditor or lead auditor.				
190.331 Quality Systems Practicum	15 credits	S2	I	AL
The design and implementation of a quality and safety management system for a CAANZ certified aviation organisation. It will include the development of a procedures-manual showing compliance with quality and safety standards.				
190.334 Air Transport Sector Operations	30 credits	*	*	*
This integrated paper enables the competencies developed during Line Oriented Flight Training (LOFT) to be applied to actual air transport operations during routine sector operations. The paper will cover the theory and practicum of all aspects of short-range air transport 'sector cycles' from pre-flight planning, briefing and preparation to post-flight reporting and de-brief, including involvement in transport flights.				
190.335 Flight Instruction – Helicopter	30 credits	*	*	*
This integrated paper includes the principles and techniques for theory, simulator and flight instruction for helicopters. The paper covers all aspects of helicopter systems and performance as they relate to instructional requirements. The practicum component of the paper includes ground briefing and helicopter flight time to achieve the competencies required to become a flight instructor. BAv-ATP (Helicopter).				
190.336 Flight Systems – Turbo-jet Operations	30 credits	*	*	*
190.339 Flight Systems – Air Transport Performance	15 credits	*	*	*
This integrated paper covers the competencies required during Line Oriented Flight Training (LOFT) in an operational environment while performing duties as a member of a multi-crew flight deck team.				
190.361 Cabin Crew Management II	15 credits	*	*	*
The role of the Senior Flight Attendant in achieving commercial goals and maintaining operational safety standards, leadership in changing times, influence of Cabin Crew culture and the remote working environment. The impact of different airline business models on cabin crew operations and the concepts of 'emotional labour' and 'emotional intelligence' in service-related industries.				
190.362 Aviation Health Awareness for Cabin Crew	15 credits	*	*	*
This paper investigates both short-and long-term occupational health issues facing cabin crew and legal and moral considerations with regard to crew and passenger health. The effects of airline economic policies and culture on safety and health are also examined.				
190.397 Special Topic	15 credits	S1	E	PN
This research-based paper is designed for intern students to pursue specialised research topics under the supervision of a Massey University School of Aviation academic advisor.				

