



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
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Biochemistry

122.102	15 credits	S2	I	AL
Biochemistry of Cells		S2	I	PN

The study of cellular processes at a molecular level, applicable to animal, plant and microbial systems: proteins, including enzymes; major processes of carbohydrate metabolism; the importance of ATP and proton gradients in metabolism. Applications of Biochemistry in Medicine and Biotechnology are included.

122.221	15 credits	S2	I	AL
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Biochemistry of Foods

Structure and function of proteins, carbohydrates, lipids, nucleic acids. Macro- and micro-nutrients. Energy content of food and energy expenditure in humans. Enzymes. Digestion, absorption and transport of nutrients. Energy-yielding metabolism and the basic principles in biosynthetic processes using gluconeogenesis and glycogen synthesis as examples. Integration and control of metabolism. Introductory nutrition and nutrition-related disorders.

122.222	15 credits	S2	I	PN
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Biochemistry for Technology

Structure and function of proteins, carbohydrates, lipids and nucleic acids; a study of enzymes and their properties with examples of industrial applications; an introduction to metabolism and metabolic pathways, including energy-yielding metabolism and selected biosynthetic processes; integration and control of metabolism; introductory nutrition or population ecology. Analytical biochemistry, including spectrophotometry and chromatographic techniques such as gas chromatography and high performance liquid chromatography.

122.231	15 credits	S1	I	AL
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Genes and Gene Expression

Structure of DNA. Replication, DNA repair and transcription. Regulation of prokaryotic gene expression. Technologies used in the study of genes and gene expression: plasmids, sequencing, restriction enzymes, libraries, PCR, Southern, northern and western analysis, expression vectors and the production of recombinant proteins. A practical course that illustrates concepts presented in the lectures.

122.232	15 credits	S2	I	PN
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Protein Biochemistry

How proteins are synthesised in the cell and directed to carry out their various roles. Topics will include protein biogenesis, targeting and post-translational modification, the relationship between protein structure and function, catalytic proteins, structural proteins, membranes and

Paper No./Title	Credits	Sem	Mode	Loc
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membrane proteins. Lectures will be complemented with a practical course focused on developing skills to investigate proteins.

122.233	15 credits	S2	I	AL
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Metabolic Biochemistry

Energy metabolism. Biosynthesis of carbohydrates and the metabolism of polysaccharides. Lipid metabolism. Nitrogen metabolism. Integration and regulation of carbohydrate, lipid and amino acid metabolism. Cellular communication systems.

122.322	15 credits	S1	I	PN
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Protein Structure and Function

Analysis of the relationship between structure and function of proteins and enzymes, including purification techniques, structural motifs, homology studies, protein families, site-directed mutagenesis, protein-ligand interactions and kinetic analysis of enzymes. Lectures will be complemented with a practical course focussed on developing skills to purify and characterise proteins.

122.327	15 credits	S2	I	PN
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Advanced Biochemistry

Contemporary topics in biochemistry within the areas of biological energy transduction, and animal or plant biochemistry. A laboratory course in advanced biochemical techniques.

122.342	15 credits	S2	I	AL
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Protein Biotechnology

Aspects of the structure-function relationships of proteins including folding, structural motifs, ligand binding, properties exploited in purification, analytical techniques, uses and applications of proteins in biotechnology.

122.382	15 credits	S2	E	PN
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Clinical Biochemistry

The biochemistry of human tissues with particular emphasis on disease detection. The practical course will include analytical methods and specialised techniques applied to clinical chemistry.

122.703	30 credits	S12	I	AL
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Gene Expression

Advanced studies of selected topics in gene regulation at transcriptional and post-transcriptional levels.



Paper No./Title	Credits	Sem	Mode	Loc
122.704	30 credits	S12	I	AL
Molecular Cell Biology		S12	I	PN
Advanced studies of selected topics in inter- and intra-cellular communication and transport.				
122.712	30 credits	S12	I	PN
Advanced Topics in Molecular Biology				
This paper will involve use of the current literature to critically examine the experimental systems used to advance knowledge in Molecular Biology.				
122.713	15 credits	S12	I	PN
Advanced Topics in Biochemistry				
The paper will involve use of the current literature to critically examine the experimental systems used to advance knowledge in Biochemistry.				
122.791	30 credits	S12	I	PN
Special Topic				
122.792	15 credits	S12	I	PN
Special Topic				
122.798	30 credits	S12	I	AL
Research Report		S12	I	PN
122.800	120 credits	S12	I	AL
MPhil – Biochemistry		S12	I	PN
122.897	60 credits	S1	I	AL
Thesis (Year 1)		S1	I	PN
		S12	I	AL
		S12	I	PN
122.898	60 credits	S1	I	AL
Thesis (Year 2)		S1	I	PN
		S12	I	AL
		S12	I	PN
122.899	120 credits	S12	I	AL
Thesis		S12	I	PN
122.900	120 credits	S12	I	AL
PhD in Biochemistry		S12	I	PN

Paper No./Title	Credits	Sem	Mode	Loc
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