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Cover image:
Confocal micrograph of fluorescently labelled HeLa cells.
Nuclei are labelled in blue, tubulin in green and actin fibres in red.

Courtesy of:
Kevin Mackenzie
Microscopy and Histology Core Facility
Institute of Medical Sciences
University of Aberdeen
http://www.abdn.ac.uk/ims/microscopy-histology
**Course Summary**
This course will consider the biochemical responses to acute exercise and the adaptations that occur in response to repeated bouts of exercise. In addition, the effect of exercise on nutritional requirements and the effects of diet on exercise performance will be examined. The course will investigate the energetics of muscle activity, the sources of energy available to muscle, the metabolism of carbohydrates, protein and lipids, the control and integration of the metabolic response to exercise and the biochemical mechanisms involved in the fatigue process. The effects of exercise on energy balance and body composition, nutritional demands of high level training as well as the roles of diet and exercise in a healthy lifestyle will be studied. The relevance of dietary recommendations for athletes and the use of dietary supplements and other ergogenic aids will be reviewed.

**Course Aims & Learning Outcomes**
To provide students with core knowledge appropriate to the study of the biochemical responses and adaptations to physical exercise and to study nutritional requirements and the effects of diet on exercise performance. Specifically, to:

1. Provide a basic understanding of the concepts of energy metabolism and nutrition in the exercising human.
2. Give an overview of the main energy sources available to the contracting skeletal muscle and overview of whole body energy balance comparing the resting and exercising individual.
3. Describe the control mechanisms that regulate and integrate the metabolic response to exercise to co-ordinate the supply of energy.
4. Discuss the biochemical factors responsible for fatigue in exercise of different intensities and durations.
5. Consider how the metabolic response to exercise is modified by a program of training.
6. Consider how diet can affect exercise performance.
7. Discuss some practical strategies for achieving an optimal diet for training and competition.

**Course Teaching Staff**
**Course Co-ordinator(s):**
Professor Alison Jenkinson (ext. 7539) **a.jenkinson@abdn.ac.uk**

**Other Staff:**
- Dr Derek Ball (DB), Medical Sciences
- Prof Alexandra Johnstone (AJ), RINH
- Dr Michael Scholz (MES), Medical Sciences
- Dr Derek Scott (DS), Medical Sciences
- Dr Sylvia Stephen (SS), RINH
- Ms Karen Taylor (KT), RINH
- Dr Frank Thies (FT), RINH
Assessments & Examinations

Students are expected to attend all lectures, laboratory classes, and tutorials, and to complete all class exercises by stated deadlines. Random attendance registers will be taken in selected lectures. It is imperative that any reasonable excuses for the late handing in of work are made to the course organizer (Prof Alison Jenkinson) before the deadline date. Otherwise the work will not be marked and the class certificate, which is required to sit the examination, may be withheld.

The minimum performance acceptable for the granting of a class certificate is attendance at all of the practical classes, and presentation of all set course work. A valid class certificate is required to sit for the degree examination.

The course assessment consists of:

- Continuous assessment: 30% of the total course assessment is based on material to be submitted during the course – laboratory reports (8% each, submission dates 10am on 14th February and 12 noon on 18th March), dietary analysis assignment (8%, submission date 10am on the 25th February and a problem-solving assessment (6%, submission date 14th March).
- Written Examination: 70% of the course assessment is based on one three hour written paper. The student has to answer four questions to be chosen from six optional questions.

The degree examination is held in April/May, with the re-sit examination in June/July.

Class Representatives
We value students’ opinions in regard to enhancing the quality of teaching and its delivery; therefore, in conjunction with the Students’ Association we support the Class Representative system.

In the School of Medicine, Medical Sciences and Nutrition we operate a system of course representatives, who are elected from within each course. Any student registered within a course that wishes to represent a given group of students can stand for election as a class representative. You will be informed when the elections for class representative will take place.

What will it involve?
It will involve speaking to your fellow students about the course you represent. This can include any comments that they may have. You will attend a Staff-Student Liaison Committee and you should represent the views and concerns of the students within this meeting. As a representative you will also be able to contribute to the agenda. You will then feedback to the students after this meeting with any actions that are being taken.

Training
Training for class representatives will be run by the Students Association. Training will take place within each half-session. For more information about the Class representative system visit www.ausa.org.uk or email the VP Education & Employability vped@abdn.ac.uk. Class representatives are also eligible to undertake the STAR (Students Taking Active Roles) Award with further information about this co-curricular award being available at: www.abdn.ac.uk/careers.

Problems with Coursework
If students have difficulties with any part of the course that they cannot cope with alone they should notify the course coordinator immediately. If the problem relates to the subject matter general advice would be to contact the member of staff who is teaching that part of the course. Students with registered disabilities should contact Mrs Jenna Reynolds (medsci@abdn.ac.uk) in the School Office (based in the IMS, Foresterhill), or Mrs Sheila Jones (s.jones@abdn.ac.uk) in the Old Aberdeen office associated with the teaching laboratories, to ensure that the appropriate facilities have been made available. Otherwise, you are strongly encouraged to contact any of the following as you see appropriate.

- Course student representatives
- Course co-ordinator
- Convenor of the Medical Sciences Staff/Student Liaison Committee (Prof Gordon McEwan)
- Personal Tutor
- Medical Sciences Disabilities Co-ordinator (Dr Derryck Shewan)

All staff are based at Foresterhill and we strongly encourage the use of email or telephone the Medical Sciences Office. You may have a wasted journey travelling to Foresterhill only to find staff unavailable.

If a course has been completed and students are no longer on campus (i.e work from second semester during the summer vacation), coursework will be kept until the end of Freshers’ Week, during the new academic year. After that point, unclaimed student work will be securely destroyed.

Course Reading List

- Jenkendrup A and Gleeson M, Sport Nutrition, Human Kinetics Champaign 2004
Further lists may be provided by the staff teaching on the course.

**Lecture Synopsis**

**Lecture 1. Nutrition and exercise. An overview – Professor Alison Jenkinson**

Purine nucleotides and phosphocreatine - Dr M Scholz

**Lecture 2. Free energy.**
Sources of energy for muscular contraction: role of ATP. The muscle adenylate pool and adenine nucleotide loss. The myokinase reaction.

**Lecture 3. The creatine kinase reaction.**
Purine nucleotide metabolism. Deamination and reamination in the purine nucleotide cycle. Fatigue in very high intensity exercise.

**Carbohydrate metabolism - Dr M Scholz**

**Lecture 4. The reactions of aerobic and anaerobic glycolysis.**
Regeneration of NAD. Regulation of glycolysis.

**Lecture 5. Gluconeogenesis and glycogen synthesis.**
Carbohydrate metabolism in different tissues. Hormonal factors influencing metabolism.

**Lipid metabolism and oxidative phosphorylation - Dr M Scholz**

**Lecture 6. Lipid structure and fat storage.**

**Lecture 7. Free Radical Biochemistry – Prof A Jenkinson**
Free radicals, antioxidants and muscle change in exercise.

**Lectures 8-9. Carbohydrate and Exercise 1 & 2**
Optimising glycogen stores before and after exercise. Carbohydrate replacement during exercise.
Metabolism of proteins and amino acids - Dr M Scholz

Lecture 10. Amino acids, protein structure and protein turnover

DNA and the control of protein synthesis. Transcription and translation. Control of gene expression.

Lecture 12. The electron transport chain and oxidative phosphorylation.

Lecture 13. Nutritional Assessment and Dietary Reference Values - Ms K Taylor
The different methodologies of assessing nutritional status will be explored. What are the UK dietary reference values? How were they derived, what do they mean? Examples of DRVs for different nutrients

Lecture 14. Dietary assessment – Dr A Johnstone
Different tools for assessing dietary intake at population and individual level will be looked at. Advantages and disadvantages of each method will be discussed. The student will also be able to put this into practice during the Dietary analysis practical.

Metabolic responses to exercise – Dr D Ball

Lecture 15. Integrated metabolic response to high intensity exercise.
Depletion of creatine phosphate and effects of creatine supplementation. Anaerobic thresholds and onset of blood lactate accumulation.

Integration of fat and carbohydrate oxidation. Responses to environmental and nutritional factors.

Lecture 17. Hormonal and metabolic control mechanisms.
Regulation of the response to exercise, feeding and fasting. Local control and integration of responses in different tissues.

Lecture 18. Fatigue mechanisms

Factors influencing the metabolic response to diet and exercise - Dr D Ball, Prof A Jenkinson, Dr F Thies, Dr D Scott

Lecture 20-22. Lipoproteins, Exercise and Diet
These lectures will discuss the transport of endogenous and exogenous fats within the body, highlighting the crucial roles of lipoproteins. The effect that exercise has on lipoprotein metabolism, which may underlie some of health benefits of exercise will also be covered. Finally, the effect of alterations in nutritional intake on lipoprotein metabolism will be discussed.

Lecture 23. Fat.
Metabolism during exercise and adaptations to a high fat diet.
Lecture 24.  Protein I
Effects of exercise on protein metabolism.

Lecture 25.  Protein II
Effects of additional protein consumption.

Fluid balance: the need for water - Dr D Ball

Lecture 26.  Fluid balance: the need for water I
Lecture 27.  Fluid balance: the need for water II.
The reasons behind waters important role in exercise performance. Euhydration, hypohydration, hyperhydration and exercise performance. Fluid consumption before, during and after exercise.

Lecture 28.  Micronutrient physiology - Dr D Scott
Lecture 29.  Gastrointestinal function and exercise - Dr D Scott
Lecture 30.  Adaptations to training.

Lecture 31.  Dietary supplements: antioxidants, creatine, and other ergogenic aids - Prof A Jenkinson
Supplements and ergogenic aids are in widespread use by athletes. This lecture will discuss some of those most commonly in use and their role in the diet of the sports person.

Lecture 32.  Dietary Supplements - Prof A Jenkinson
Lecture 33.  Diet, exercise and a healthy lifestyle - Prof A Jenkinson
The effects of diet and exercise are considered separately and jointly in the development and maintenance of a healthy lifestyle.

Practical/Lab/Tutorial Work

Practical Classes

1. Metabolic response to exercise
2. Metabolic response to exercise
3. Dietary Assessment
4. Exercise and metabolic rate
5. Exercise and metabolic rate
6. Exercise and metabolic rate

Reports on the laboratory practical work highlighting the main methods employed and the key findings should be written. These should not exceed 1500 words and should be submitted online through MyAberdeen/Turnitin by 10 am on Monday 14th February (practicals 1 & 2) and 12 noon on Monday 18th March (practicals 4-6). The dietary assessment practical
submission is due by 10 am on Thursday 25\textsuperscript{th} February. There will be an additional research debate session on Thursday 28\textsuperscript{th} March. Details of this will be discussed during the course.

**Tutorials**
A problem-solving tutorial is organised for Thursday 7\textsuperscript{th} March. This will provide you with the necessary skills which are required for the completion of the 4\textsuperscript{th} assignment on this course (Problem Solving - which will be completed on Thursday 14\textsuperscript{th} March).

The problem-solving assessment feedback and answers will be discussed at the final lecture (Friday 29\textsuperscript{th} March).

A tutorial is also organised for the last teaching session (Monday 22\textsuperscript{nd} April) when there will be a further opportunity to ask questions about the material covered during this course.
**University Policies**

Students are asked to make themselves familiar with the information on key institutional policies which been made available within MyAberdeen ([https://abdn.blackboard.com/bbcswebdav/institution/Policies](https://abdn.blackboard.com/bbcswebdav/institution/Policies)). These policies are relevant to all students and will be useful to you throughout your studies. They contain important information and address issues such as what to do if you are absent, how to raise an appeal or a complaint and how seriously the University takes your feedback.

These institutional policies should be read in conjunction with this programme and/or course handbook, in which School and College specific policies are detailed. Further information can be found on the University’s Infohub webpage or by visiting the Infohub.

The information included in the institutional area for 2018/19 includes the following:

- Absence
- Academic Appeals & Complaints
- Assessment (Common Grading Scale)
- Codes of Practice on Student Discipline (Academic and Non-Academic)
- Class Certificates
- Exam Results
- Transcripts
- MyAberdeen
- TurnitinUK
- Feedback
- Communication
- Aberdeen Graduate Attributes
- The Co-Curriculum
<table>
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<tr>
<th>Grade</th>
<th>Grade Point</th>
<th>% Mark</th>
<th>Category</th>
<th>Honours Class</th>
<th>Description</th>
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</table>
| A1    | 22          | 90-100 | Excellent    | First         | • Outstanding ability and critical thought  
• Evidence of extensive reading  
• Superior understanding  
• The best performance that can be expected from a student at this level |
| A2    | 21          | 85-89  | Excellent    | First         | • Outstanding ability and critical thought  
• Evidence of extensive reading  
• Superior understanding  
• The best performance that can be expected from a student at this level |
| A3    | 20          | 80-84  | Excellent    | First         | • Outstanding ability and critical thought  
• Evidence of extensive reading  
• Superior understanding  
• The best performance that can be expected from a student at this level |
| A4    | 19          | 75-79  | Excellent    | First         | • Outstanding ability and critical thought  
• Evidence of extensive reading  
• Superior understanding  
• The best performance that can be expected from a student at this level |
| A5    | 18          | 70-74  | Excellent    | First         | • Outstanding ability and critical thought  
• Evidence of extensive reading  
• Superior understanding  
• The best performance that can be expected from a student at this level |
| B1    | 17          | 67-69  | Very Good    | Upper Second  | • Able to argue logically and organise answers well  
• Shows a thorough grasp of concepts  
• Good use of examples to illustrate points and justify arguments  
• Evidence of reading and wide appreciation of subject |
| B2    | 16          | 64-66  | Very Good    | Upper Second  | • Able to argue logically and organise answers well  
• Shows a thorough grasp of concepts  
• Good use of examples to illustrate points and justify arguments  
• Evidence of reading and wide appreciation of subject |
| B3    | 15          | 60-63  | Very Good    | Upper Second  | • Able to argue logically and organise answers well  
• Shows a thorough grasp of concepts  
• Good use of examples to illustrate points and justify arguments  
• Evidence of reading and wide appreciation of subject |
| C1    | 14          | 57-59  | Good         | Lower Second  | • Repetition of lecture notes without evidence of further appreciation of subject  
• Lacking illustrative examples and originality  
• Basic level of understanding |
| C2    | 13          | 54-56  | Good         | Lower Second  | • Repetition of lecture notes without evidence of further appreciation of subject  
• Lacking illustrative examples and originality  
• Basic level of understanding |
| C3    | 12          | 50-53  | Good         | Lower Second  | • Repetition of lecture notes without evidence of further appreciation of subject  
• Lacking illustrative examples and originality  
• Basic level of understanding |
| D1    | 11          | 47-49  | Pass         | Third         | • Limited ability to argue logically and organise answers  
• Failure to develop or illustrate points  
• The minimum level of performance required for a student to be awarded a pass |
| D2    | 10          | 44-46  | Pass         | Third         | • Limited ability to argue logically and organise answers  
• Failure to develop or illustrate points  
• The minimum level of performance required for a student to be awarded a pass |
| D3    | 9           | 40-43  | Pass         | Third         | • Limited ability to argue logically and organise answers  
• Failure to develop or illustrate points  
• The minimum level of performance required for a student to be awarded a pass |
| E1    | 8           | 37-39  | Fail         | Fail          | • Weak presentation  
• Tendency to irrelevance  
• Some attempt at an answer but seriously lacking in content and/or ability to organise thoughts |
| E2    | 7           | 34-36  | Fail         | Fail          | • Weak presentation  
• Tendency to irrelevance  
• Some attempt at an answer but seriously lacking in content and/or ability to organise thoughts |
| E3    | 6           | 30-33  | Fail         | Fail          | • Weak presentation  
• Tendency to irrelevance  
• Some attempt at an answer but seriously lacking in content and/or ability to organise thoughts |
| F1    | 5           | 26-29  | Clear Fail   | Not used for Honours | • Contains major errors or misconceptions  
• Poor presentation |
| F2    | 4           | 21-25  | Clear Fail   | Not used for Honours | • Contains major errors or misconceptions  
• Poor presentation |
| F3    | 3           | 16-20  | Clear Fail   | Not used for Honours | • Contains major errors or misconceptions  
• Poor presentation |
<p>| G1    | 2           | 11-15  | Clear Fail/ Abysmal | -         | • Token or no submission |
| G2    | 1           | 1-10   | Clear Fail/ Abysmal | -         | • Token or no submission |
| G3    | 0           | 0      | Clear Fail/ Abysmal | -         | • Token or no submission |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Place</th>
<th>Subject</th>
<th>Session</th>
<th>Lecturer</th>
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<tbody>
<tr>
<td>Mon 14 Jan</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Physiology, biochemistry, nutrition and exercise: an overview</td>
<td>Lecture</td>
<td>AMJ</td>
</tr>
<tr>
<td>Tue 15 Jan</td>
<td>15:00-17:00</td>
<td>FHLT</td>
<td>Review of exam performance/What will you do after your degree?</td>
<td>Lecture</td>
<td>DAS/GTAM</td>
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<tr>
<td>Wed 16 Jan</td>
<td>12:00-13:00</td>
<td>1:143/144</td>
<td>Purine nucleotides and phosphocreatine</td>
<td>Lecture</td>
<td>MES</td>
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<tr>
<td>Fri 18 Jan</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Purine nucleotides and phosphocreatine</td>
<td>Lecture</td>
<td>MES</td>
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**Week 26**

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<th>Subject</th>
<th>Session</th>
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<tbody>
<tr>
<td>Mon 21 Jan</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Carbohydrate metabolism</td>
<td>Lecture</td>
<td>MES</td>
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<td>Wed 23 Jan</td>
<td>12:00-13:00</td>
<td>1:143/144</td>
<td>Carbohydrate metabolism</td>
<td>Lecture</td>
<td>MES</td>
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<tr>
<td>Fri 25 Jan</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Lipid Metabolism</td>
<td>Lecture</td>
<td>MES</td>
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**Week 27**

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<th>Session</th>
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<tr>
<td>Mon 28 Jan</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Free radical biochemistry</td>
<td>Lecture</td>
<td>AMJ</td>
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<tr>
<td>Tue 29 Jan</td>
<td>14:00-18:00</td>
<td>ZB11</td>
<td>Practical Class (Metabolic response to exercise)</td>
<td>Practical</td>
<td>MES</td>
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<tr>
<td>Wed 30 Jan</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Carbohydrate and exercise 1</td>
<td>Lecture</td>
<td>MES</td>
</tr>
<tr>
<td>Thu 31 Jan</td>
<td>09:00-17:00</td>
<td>RINH, FH</td>
<td>Rowett visit – body composition and dietary assessment</td>
<td>Practical</td>
<td>SS/KT</td>
</tr>
<tr>
<td>Fri 1 Feb</td>
<td>12:00-13:00</td>
<td>1:147</td>
<td>Dietary assessment</td>
<td>Lecture</td>
<td>AJ</td>
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**Week 28**

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<tbody>
<tr>
<td>Mon 4 Feb</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Metabolism of proteins and amino acids</td>
<td>Lecture</td>
<td>MES</td>
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<tr>
<td>Tue 5 Feb</td>
<td>09:00-18:00</td>
<td>CR2</td>
<td>Practical Class (Metabolic response to exercise)</td>
<td>Practical</td>
<td>MES</td>
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<tr>
<td>Wed 6 Feb</td>
<td>12:00-13:00</td>
<td>1:143/144</td>
<td>Metabolic responses to exercise</td>
<td>Lecture</td>
<td>DB</td>
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<tr>
<td>Thu 7 Feb</td>
<td>09:00-17:00</td>
<td>Practical Class (Dietary Assessment)</td>
<td>Practical</td>
<td>SS/KT</td>
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<td>Fri 8 Feb</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Metabolism of proteins and amino acids</td>
<td>Lecture</td>
<td>MES</td>
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**Week 29**

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<tbody>
<tr>
<td>Mon 11 Feb</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Nutritional assessment and dietary reference values</td>
<td>Lecture</td>
<td>KT</td>
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<tr>
<td>Wed 13 Feb</td>
<td>11:00-12:00</td>
<td>1:143/144</td>
<td>Carbohydrate and exercise 2</td>
<td>Lecture</td>
<td>MES</td>
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<tr>
<td></td>
<td>12:00-13:00</td>
<td>1:143/144</td>
<td>Oxidative phosphorylation</td>
<td>Lecture</td>
<td>MES</td>
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<td>Thu 14 Feb</td>
<td>10:00-15:00</td>
<td>ZB06</td>
<td>Practical Class (Exercise and metabolic rate)</td>
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<tr>
<td>Fri 15 Feb</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Metabolic responses to exercise</td>
<td>Lecture</td>
<td>DB</td>
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**Week 30**

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<tr>
<td>Mon 18 Feb</td>
<td>12:00-13:00</td>
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<td>Metabolic responses to exercise</td>
<td>Lecture</td>
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<td>Wed 20 Feb</td>
<td>12:00-13:00</td>
<td>1:143/144</td>
<td>Metabolic responses to exercise</td>
<td>Lecture</td>
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<tr>
<td>Thu 21 Feb</td>
<td>10:00-15:00</td>
<td>ZB06</td>
<td>Practical Class (Exercise and metabolic rate)</td>
<td>Practical</td>
<td>MES</td>
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<tr>
<td>Fri 22 Feb</td>
<td>12:00-13:00</td>
<td>1:147</td>
<td>Lipoproteins</td>
<td>Lecture</td>
<td>FT</td>
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**Week 31**

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<tr>
<td>Mon 25 Feb</td>
<td>12:00-13:00</td>
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<td>Lipoproteins and Exercise</td>
<td>Lecture</td>
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<td>Wed 27 Feb</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Lipid metabolism in exercise</td>
<td>Lecture</td>
<td>AMJ</td>
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<tr>
<td>Thu 28 Feb</td>
<td>10:00-15:00</td>
<td>ZB06</td>
<td>Practical Class (Exercise and metabolic rate)</td>
<td>Practical</td>
<td>MES</td>
</tr>
<tr>
<td>Fri 1 Mar</td>
<td>12:00-13:00</td>
<td>1:147</td>
<td>Lipoproteins, Exercise and Diet</td>
<td>Lecture</td>
<td>FT</td>
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**Week 32**

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<th>Subject</th>
<th>Session</th>
<th>Lecturer</th>
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<tr>
<td>Mon 4 Mar</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Fat</td>
<td>Lecture</td>
<td>AMJ</td>
</tr>
<tr>
<td>Wed 6 Mar</td>
<td>12:00-13:00</td>
<td>1:032/33</td>
<td>Protein</td>
<td>Lecture</td>
<td>AMJ</td>
</tr>
<tr>
<td>Thu 7 Mar</td>
<td>09:00-13:00</td>
<td>1:147</td>
<td>Problem Solving Tutorial</td>
<td>Tutorial</td>
<td>AMJ</td>
</tr>
<tr>
<td>Fri 8 Mar</td>
<td>12:00-13:00</td>
<td>1:147</td>
<td>Protein</td>
<td>Lecture</td>
<td>AMJ</td>
</tr>
</tbody>
</table>
### Week 33

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Event</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon 11 Mar</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Fluid balance: the need for water 1</td>
<td>Lecture DB</td>
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<tr>
<td>Wed 13 Mar</td>
<td>12:00-13:00</td>
<td>1:032/33</td>
<td>Fluid balance: the need for water 2</td>
<td>Lecture DB</td>
</tr>
<tr>
<td>Thu 14 Mar</td>
<td>09:00-18:00</td>
<td>CR3</td>
<td><strong>Problem Solving Assignment</strong></td>
<td>Lecture MES</td>
</tr>
<tr>
<td></td>
<td>13:00-18:00</td>
<td>IMS</td>
<td><strong>Hons Project Presentations</strong></td>
<td>Presentation AMJ</td>
</tr>
<tr>
<td>Fri 15 Mar</td>
<td>12:00-13:00</td>
<td>1:147</td>
<td>Micronutrient Physiology</td>
<td>Lecture DAS</td>
</tr>
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</table>

### Week 34

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Event</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon 18 Mar</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Dietary supplements: antioxidants, creatine and other ergogenic aids</td>
<td>Lecture AMJ</td>
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<tr>
<td>Wed 20 Mar</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Factors influencing the metabolic response to exercise</td>
<td>Lecture AMJ</td>
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<tr>
<td>Thu 21 Mar</td>
<td>12:00-13:00</td>
<td>1:147</td>
<td>Mock Exam</td>
<td>Exam MES</td>
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<tr>
<td>Fri 22 Mar</td>
<td>12:00-13:00</td>
<td>1:147</td>
<td>Gastrointestinal function and exercise</td>
<td>Lecture DAS</td>
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</table>

### Week 35

<table>
<thead>
<tr>
<th>Date</th>
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<th>Event</th>
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</thead>
<tbody>
<tr>
<td>Mon 25 Mar</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Dietary supplements</td>
<td>Lecture AMJ</td>
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<tr>
<td>Wed 27 Mar</td>
<td>12:00-13:00</td>
<td>1:032/33</td>
<td>Diet, exercise and a healthy lifestyle</td>
<td>Lecture AMJ</td>
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<tr>
<td>Thu 28 Mar</td>
<td>10:00-11:00</td>
<td>1:147</td>
<td>Debate Session</td>
<td>Lecture MES</td>
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<td></td>
<td>14:00-17:00</td>
<td>1:032/033</td>
<td>Debate Session</td>
<td>Lecture AMJ/MES</td>
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<tr>
<td>Fri 29 Mar</td>
<td>12:00-13:00</td>
<td>1:147</td>
<td>Problem Solving, and Exam Preparation</td>
<td>Lecture AMJ</td>
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</table>

### Week 39 - No Teaching - Revision Week

<table>
<thead>
<tr>
<th>Date</th>
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<th>Event</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon 22 Apr</td>
<td>12:00-13:00</td>
<td>1:032/033</td>
<td>Exam Preparation - Final questions</td>
<td>Tutorial MES</td>
</tr>
</tbody>
</table>

### Staff

- Dr D Ball (DB), Medical Sciences
- Prof A Jenkinson (AMJ), Medical Sciences, Course Co-ordinator
- Dr A Johnstone (AJ), RINH
- Dr M Scholz (MES), Medical Sciences
- Dr D Scott (DAS), Medical Sciences
- Dr S Stephen (SS), RINH
- Ms K Taylor (KT), RINH
- Dr F Thies (FT), RINH

### Venues

<table>
<thead>
<tr>
<th>Venues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foresterhill Lecture Theatre (FHLT)</td>
</tr>
<tr>
<td>Polwarth Building CR2 (Computer Room 2, Medical Library)</td>
</tr>
<tr>
<td>Polwarth Building Comp Rm 3 (Computer Room 3)</td>
</tr>
<tr>
<td>College Teaching Facility, Zoology (Zoo), Lab ZB06</td>
</tr>
<tr>
<td>1.032/33 Polwarth Building</td>
</tr>
<tr>
<td>1.154 Polwarth Building</td>
</tr>
<tr>
<td>1:M001 Polwarth Building</td>
</tr>
<tr>
<td>1:143 Polwarth 1st floor</td>
</tr>
<tr>
<td>Institute of Medical Sciences (IMS Level 7)</td>
</tr>
</tbody>
</table>