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UNIVERSITY OF
ABERDEEN

*SR2501- Exercise and Health
Course Handbook 2023-2024*



Undergraduate Medical Sciences

School of Medicine, Medical Sciences & Nutrition

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Course Summary

This course is designed to explore the relationship between exercise and health. The relationships will be investigated in some specific populations and finally, link these populations together to help find the best approach for any individual.

We will examine how we change as we grow from babies, through adulthood and then as we age. We will also look at patients with chronic diseases, athletes, and other specific populations. The epidemic of inactivity in the Western world will be discussed with health outcomes as a consequence. Social and economic barriers to physical activity, motivation for exercise and behavioural models for lifestyle change will be developed, with examples of how exercise should be promoted. Potentially positive and negative aspects of exercise will also be explored.

Course Aims & Learning Outcomes

The specific objectives of SR2501 are to:

- Examine the relationship between fitness and health
- Understand the effect of exercise on health outcomes in disease
- Understand the behavioural factors which limit exercise participation and adherence to programmes
- Explore the health promoting effect of exercise in diverse groups of the population
- Examine the relationship between exercise and immune function.

Course Teaching Staff

Course Coordinator(s):

Dr Jenny Gregory (JG) (ext. 7549) j.gregory@abdn.ac.uk

Other Staff:

- Dr Jenny Gregory (JG), Medical Sciences (Course Coordinator)
- Dr Isabel Crane (IC), Medical Sciences
- Dr Arimantas Lionikas (AL), Medical Sciences
- Dr Kathryn Martin (KM), Medical Sciences
- Dr Heather May Morgan (HMM), Institute for Applied Health Sciences
- Dr Nicola Mutch (NM), Medical Sciences
- Dr Christine Roberts (CR), University Sport and Exercise Team (SET)
- Dr Fiona Saunders (FS) Medical Sciences
- Dr Michael Scholz (MS), Medical Sciences
- External lecturer: Gillian Souter, HMP Peterhead

Assessments & Examinations

Students are expected to attend all lectures, laboratory classes, and tutorials, and to complete all class exercises by stated deadlines. The minimum performance acceptable is attendance at 75% of the lectures, seminars, practical classes, and presentation of all set course work, written and oral.

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 & 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 the medical sciences office, (medsci@abdn.ac.uk) (based in the Polwarth Building, Foresterhill) 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 (Professor 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 the second half session during the summer vacation), coursework will be kept until the end of Fresher's Week, during the new academic year. After that point, unclaimed student work will be securely destroyed.

Course Reading List

Recommended Texts:

Exercise Physiology: energy, nutrition & human performance, WD McArdle, FI Katch, VL Katch, Sixth Edition, 2007. Lippincott Williams & Wilkins.

Physical activity and health, C.Bouchard, S.N. Blair, W.L. Haskell, 2007. Human Kinetics.

Lecture Synopsis

Exercise and health/ introduction – Dr J Gregory

An introductory lecture about the structure, assessments, and topics of the course.

Respiratory response to exercise – Dr N Mutch

Changes in pulmonary ventilation and tissue respiration during and after muscle exercise.

Cardiovascular response to exercise – Dr N Mutch

Changes in cardiovascular function and blood flow during and after muscle exercise.

Metabolic response to exercise – Dr F Saunders

Overview of ATP resynthesis during and after exercise

Physical activity and obesity – Dr F Saunders

Energy stores, lipid metabolism and exercise recommendations.

Introduction to the Immune system – Dr I Crane

Details of the various cells of the immune system and their role when stimulated.

Muscle building – Dr A Lionikas

An overview of anabolic signalling in skeletal muscles

Muscle breakdown – Dr I Crane

The role of hypokinesia (disuse) and inflammation in muscle breakdown

Overtraining – Dr A Lionikas

Intensive exercise training can lead to overtraining which is associated with deterioration of athletic performance and negative health outcomes.

Exercise and children – Dr J Gregory

Growth, development, maturation and how they relate to physical performance. Guidelines for training and physical activity

Exercise and adults – Dr J Gregory

Differences in physical performance and body composition between men and women

Ageing and exercise – Dr K Martin and J Gregory

Mechanisms of ageing and the role of exercise.

Exercise and body composition – Dr C Roberts and Dr J Gregory

Exercise affects body composition which is associated with risk of chronic diseases.

Type 2 diabetes and exercise – Dr A Lionikas

An introduction to the condition of type 2 diabetes and how exercise may serve to reduce its incidence.

Exercise, bones, and osteoporosis – Dr J Gregory and Dr K Martin

Bone health is strongly associated with diet and physical activity. These lectures will look at how bone grows, how it ages and how exercise can help prevent disorders such as osteoporosis.

Motivation for exercise - H M Morgan

Motivators, demotivators and other factors that affect participation in exercise programs.

Adherence to exercise programs - H M Morgan

What helps people stick to an exercise programme?

Cancer and exercise – Dr M Scholz

Direct and indirect interactions, association between inactivity and increased overall cancer risk. Importance of exercise for prevention and recovery in cancer diseases.

Cardiovascular disease - Dr N Mutch

An introduction to the physiological mechanisms of cardiovascular diseases and the role of regular physical activity in the prevention.

Real world applications – Dr Christine Roberts, Gillian Souter, Jenny Gregory

There will be two sessions which look at how all the topics interlink when looking at real-world applications. There will be an exercise consultation with Christin Roberts, where you consider what exercise may be suitable for different individuals and a visit from an external lecturer Gillian Souter who is a prison officer and Physical Training Instructor (PTI) for the Scottish Prison Service.

Practical/Lab/Tutorial Work

Laboratory Work

You can sign up to practical sessions in MyTimetable. There are two practicals and each is run three times (Group A, Group B and Group C), so you can pick the time most convenient for you.

Two practical assessments will take place during the course, one online test and one structured report. Each is worth 15%

Case Studies

A case study will be released on MyAberdeen. You will then have to study and submit your answers online using Turnitin. This will count for 10% of the final mark.

Multiple Choice Assessments

Two multiple choice assessments (50 questions each) will be taken. These will each be worth 30% of the final mark for the course each.

University Policies

Students are asked to make themselves familiar with the information on key education policies, available [here](#). 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 the University will calculate your degree outcome.

These University wide education policies should be read in conjunction with this programme and/or course handbook, in which School specific policies are detailed. These policies are effective immediately, for the 2022/23 academic year. Further information can be found on the [University's Infohub webpage](#) or by visiting the Infohub.

The information included in the institutional area for 2022-23 includes the following:

- Assessment
- Feedback
- Academic Integrity
- Absence
- Student Monitoring/ Class Certificates
- Late Submission of Work
- Student Discipline
- The co-curriculum
- Student Learning Service (SLS)
- Professional and Academic Development
- Graduate Attributes
- Email Use
- MyAberdeen
- Appeals and Complaints

Where to Find the Following Information:

C6/C7- University of Aberdeen Homepage > Students > Academic Life > Monitoring and Progress > Student Monitoring (C6 & C7)

<https://www.abdn.ac.uk/students/academic-life/student-monitoring.php#panel5179>

Absences- To report absences you should use the absence reporting system tool on Student Hub. Once you have successfully completed and sent the absence form you will get an email that your absence request has been accepted. The link below can be used to log onto the Student Hub Website and from there you can record any absences you may have.

Log In - Student Hub (<https://www.abdn.ac.uk/studenthub/loginbdn.ac.uk>)

Submitting an Appeal- University of Aberdeen Homepage > Students > Academic Life > Appeals and Complaints

<https://www.abdn.ac.uk/students/academic-life/appeals-complaints-3380.php#panel2109>

Academic Language & Skills support

For students whose first language is not English, the Language Centre offers support with Academic Writing and Communication Skills.

Academic Writing

- Responding to a writing task: Focusing on the question
- Organising your writing: within & between paragraphs
- Using sources to support your writing (including writing in your own words, and citing & referencing conventions)
- Using academic language
- Critical Thinking
- Proofreading & Editing

Academic Communication Skills

- Developing skills for effective communication in an academic context
- Promoting critical thinking and evaluation
- Giving opportunities to develop confidence in communicating in English

- Developing interactive competence: contributing and responding to seminar discussions
- Useful vocabulary and expressions for taking part in discussions

More information and how to book a place can be found [here](#)

Medical Sciences Common Grading Scale

Grade	Grade Point	% Mark	Category	Honours Class	Description
A1	22	90-100	Excellent	First	<ul style="list-style-type: none"> • 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			
A3	20	80-84			
A4	19	75-79			
A5	18	70-74			
B1	17	67-69	Very Good	Upper Second	<ul style="list-style-type: none"> • 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			
B3	15	60-63			
C1	14	57-59	Good	Lower Second	<ul style="list-style-type: none"> • Repetition of lecture notes without evidence of further appreciation of subject • Lacking illustrative examples and originality • Basic level of understanding
C2	13	54-56			
C3	12	50-53			
D1	11	47-49	Pass	Third	<ul style="list-style-type: none"> • 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			
D3	9	40-43			
E1	8	37-39	Fail	Fail	<ul style="list-style-type: none"> • 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			
E3	6	30-33			
F1	5	26-29	Clear Fail	Not used for Honours	<ul style="list-style-type: none"> • Contains major errors or misconceptions • Poor presentation
F2	4	21-25			
F3	3	16-20			
G1	2	11-15	Clear Fail/Abysmal		<ul style="list-style-type: none"> • Token or no submission
G2	1	1-10			
G3	0	0			

Course Timetable SR2501: 2023-2024

Date	Time	Place	Subject	Session	Staff
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Week 26					
Mon 22 Jan					
Tue 23 Jan	10:00- 12:00	FN3	Exercise and health: introduction Respiratory response to exercise	Lecture	JG
Wed 24 Jan					
Thu 25 Jan	10:00- 11:00	Auris	Cardiovascular response to exercise	Lecture	JG
Fri 26 Jan					
Week 27					
Mon 29 Jan					
Tue 30 Jan	10:00- 12:00	FN3	Metabolic response to exercise Physical activity and obesity	Lecture	FS
Wed 31 Feb					
Thu 1 Feb	10:00- 11:00	Auris	Immune system I	Lecture	IC
Fri 2 Feb		Online	Case Study released	N/A	JG
Week 28					
Mon 5 Feb					
Tue 6 Feb	10:00- 12:00	FN3	Muscle building Overtraining	Lecture	AL AL
Wed 8 Feb					
Thu 9 Feb	10:00- 11:00	Auris	Immune system II	Lecture	IC
Fri 10 Feb					
Week 29					
Mon 13 Feb					
Tue 14 Feb	10:00- 12:00	FN3	Muscle breakdown Exercise and children	Lecture	IC JG
Wed 15 Feb		Online	Case Study Due		JG
Thu 16 Feb	09:00- 12:00	STH 0.001	Practical 1: Frailty testing Group A	Practical	JG
	12:00- 15:00	STH 0.001	Practical 1: Frailty testing Group B	Practical	JG
	15:00- 18:00	STH 0.001	Practical 1: Frailty testing Group C	Practical	JG
Fri 17 Feb					
Week 30					
Mon 20 Feb					
Tue 21 Feb	10:00- 12:00	FN3	Exercise and adults Exercise and the elderly	Lecture	JG
Wed 22 Feb					
Thu 23 Feb	10:00- 11:00	Auris	Ageing and health	Lecture	JG

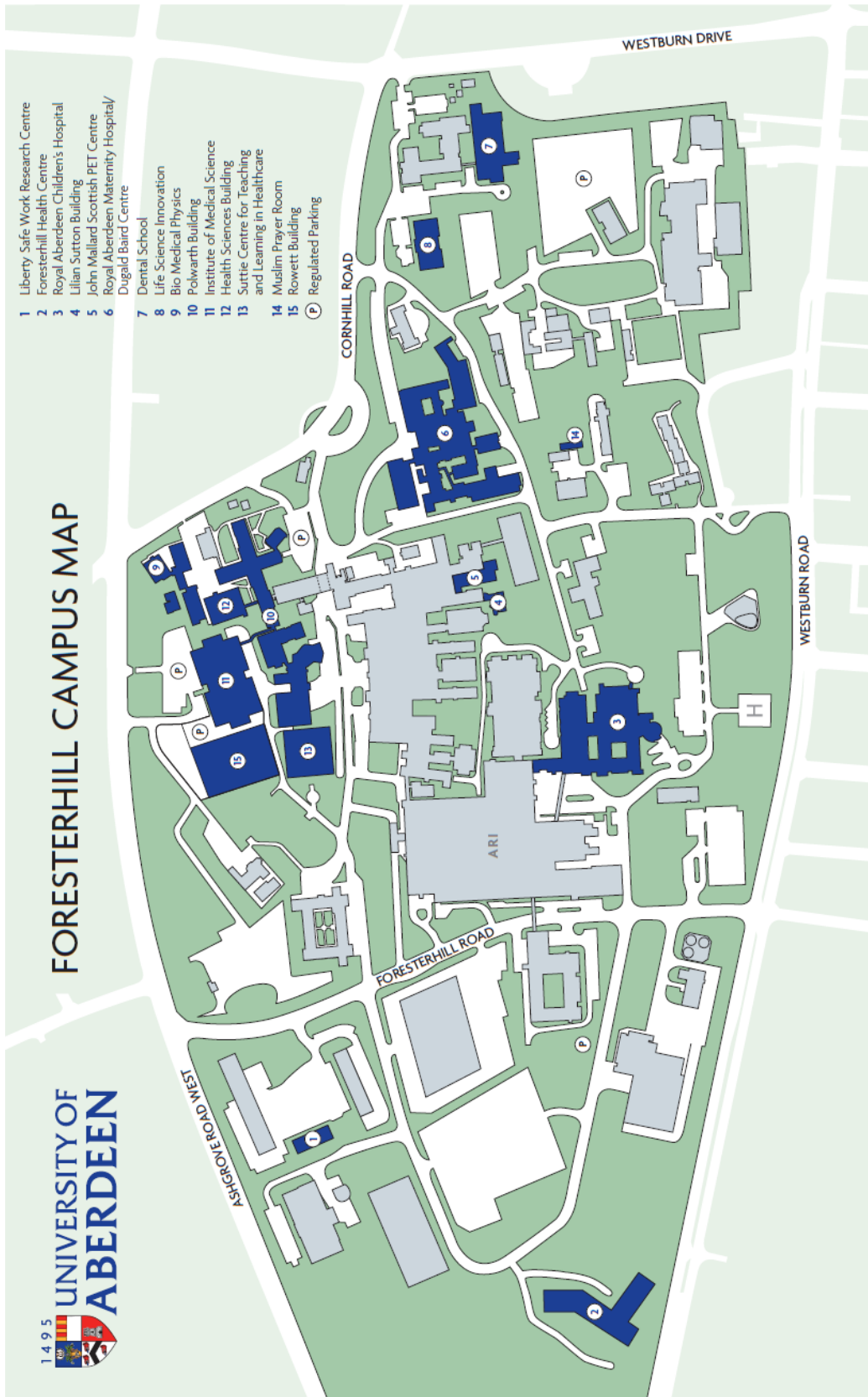
Fri 24 Feb					
Week 31					
Mon 27 Feb		Online	Assessment 1		JG
Tue 28 Feb	10:00- 12:00	FN3	Body composition and health I Body composition and health II	Lecture	JG CR
Wed 1 Mar					
Thu 2 Mar	10:00- 11:00	Auris or Online	External lecturer – HMP Peterhead	Lecture	JG/GS
Fri 3 Mar					
Week 32					
Mon 6 Mar		Online (Turnitin)	Practical 1 (frailty) report - deadline		JG
Tue 7 Mar	10:00- 12:00	FN3	An introduction to type 2 diabetes Exercise and type 2 diabetes	Lecture	AL
Wed 8 Mar					
Thu 9 Mar	09:00- 12:00	STH 0.001	Practical 2: Anthropometry A	Practical	CR/JG
	12:00- 15:00	STH 0.001	Practical 2: Anthropometry B	Practical	CR /JG
	15:00- 18:00	STH 0.001	Practical 2: Anthropometry C	Practical	CR/JG
Fri 10 Mar					
Week 33					
Mon 13 Mar					
Tue 14 Mar	10:00- 12:00	FN3	Mechanical Properties of Bone Growing a Healthy Skeleton	Lecture	JG
Wed 15 Mar					
Thu 16 Mar	10:00- 11:00	Auris	Maintaining a healthy skeleton	Lecture	KM
		Online	Practical 2 (Anthropometry MCQ/Short answer) - deadline		JG
Fri 17 Mar					
Week 34					
Mon 20 Mar					
Tue 21 Mar	10:00- 12:00	FN3	A background on cardiovascular diseases Exercise and cardiovascular diseases	Lecture	NM
Wed 22 Mar					
Thu 23 Mar	10:00- 11:00	Auris	Exercise Consultation	Tutorial	CR
Fri 24 Mar					
Week 35					

Mon 27 Mar					
Tue 28 Mar	10:00- 12:00	FN3	Motivation for exercise Adherence to exercise programs	Lecture	HMM
Wed 29 Mar					
Thu 30 Mar	10:00- 11:00	Auris	Cancer and Exercise	Lecture	MS
Fri 31 Mar		Online	Assessment 2		JG

Staff

- Dr Jenny Gregory (JG), Medical Sciences (Course Coordinator)
- Dr Isabel Crane (IC), Medical Sciences
- Dr Arimantas Lionikas (AL), Medical Sciences
- Dr Kathryn Martin (KM), Medical Sciences
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- Dr Michael Scholz (MS), Medical Sciences
- Gillian Souter (GS), HMP Peterhead

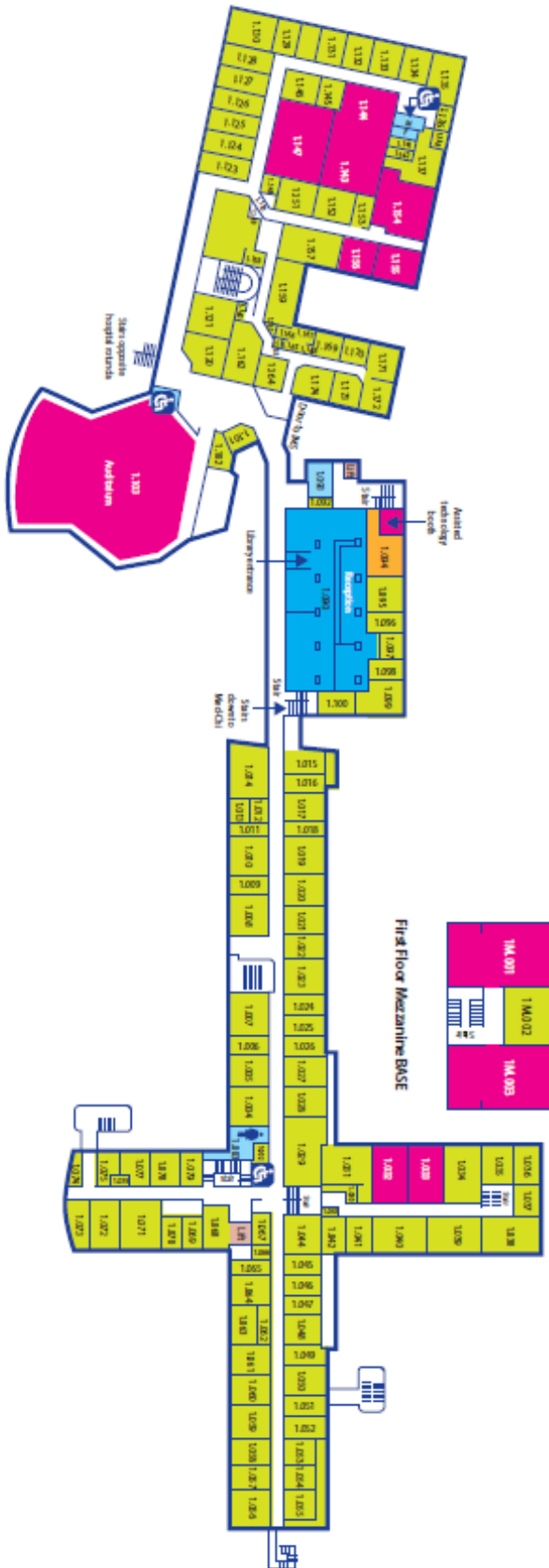
Campus Maps - Foresterhill



Polwarth Floor Plans



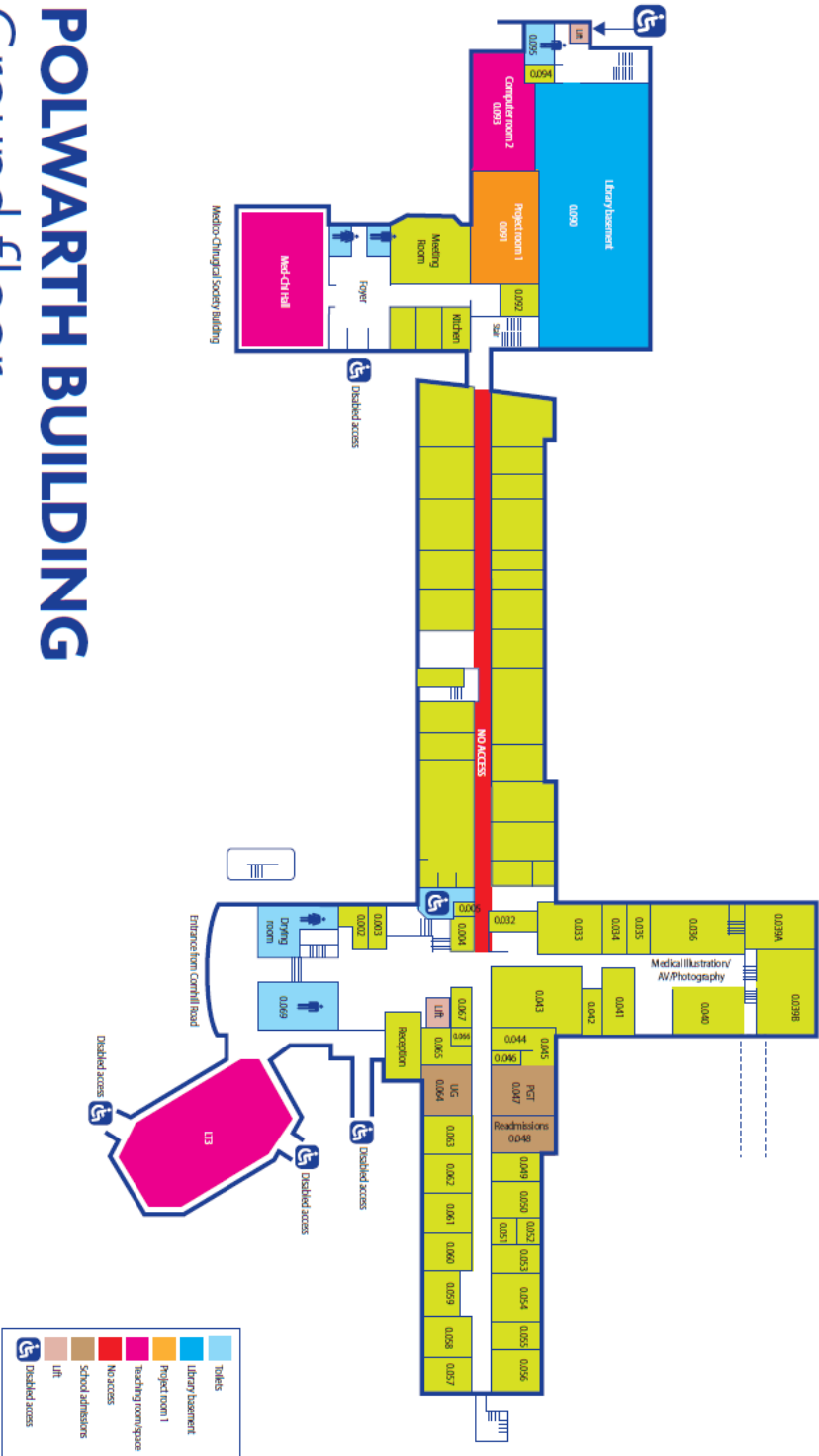
POLWARTH BUILDING First floor

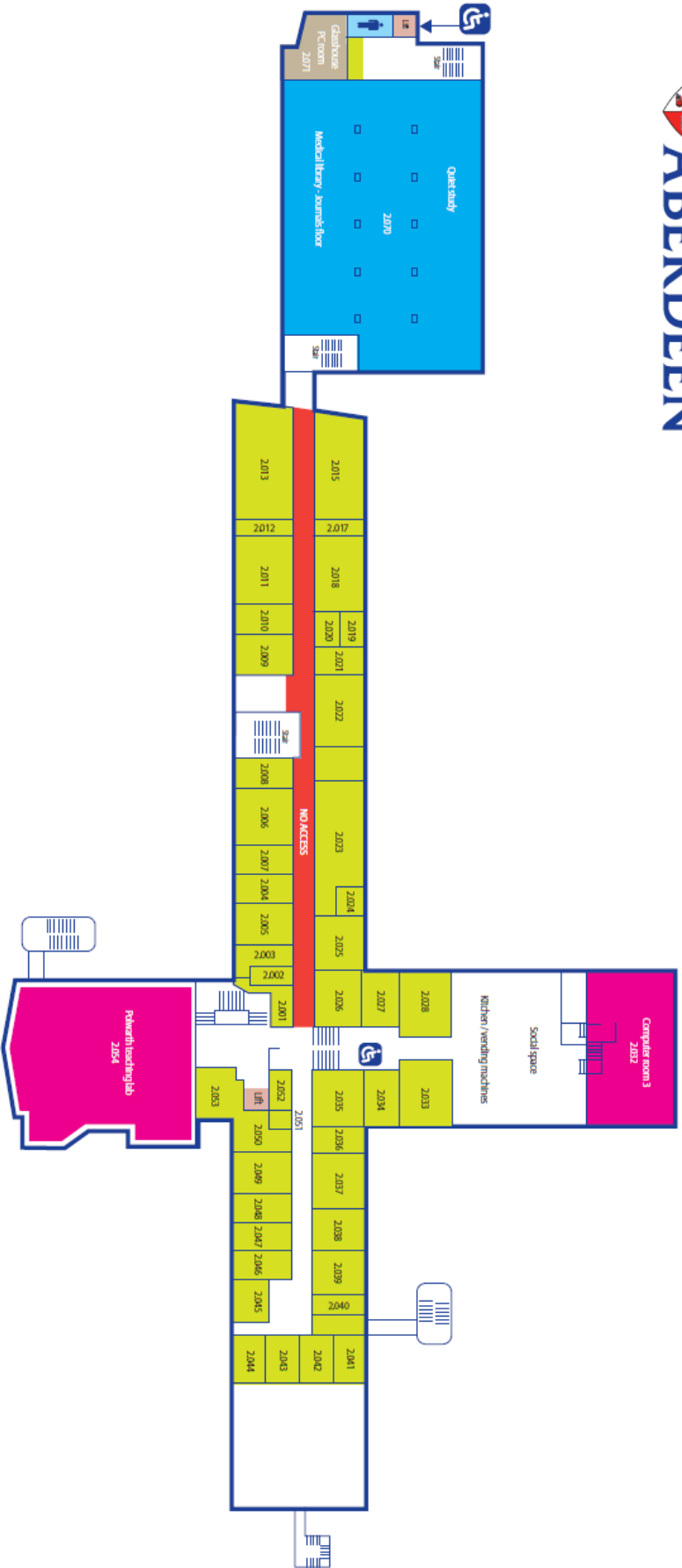


Stairs
Classroom/lecture space
Project Room 2
Library
Lift
Outside room

POLWARTH BUILDING








Ground floor





POLWARTH BUILDING

Second floor

-  Toilets
-  classroom PC room
-  No access
-  teaching space
-  lift
-  library
-  Disabled access