

# Heriot Watt Course Catalogue



**School of Life Sciences (SLS) including Biology (Brewing and Distilling, Cell and Molecular, Food and Beverage, Human Health, and Micro) and Psychology.**

Email KEI ([info@KEIabroad.org](mailto:info@KEIabroad.org)) if you need syllabi for courses. Make sure to include the course numbers and titles in your email.

**School: SLS                      Level 1                      Semester: Fall**  
**Course Code: A57IU           Course Title: Information and Communication Skills**

Information and Communication Skills provides training in the use of computer hardware and software for retrieving, managing and presenting information relevant to the life sciences and aims to provide the skills required for the evaluation and analysis of that information. This course also aims to improve the confidence of the learner in the use of computer hardware and software and in their communication and presentation skills.

**School: SLS                      Level 1                      Semester: Fall**  
**Course Code: A47NY           Course Title: Introduction to Psychology 1**

Introduction to Psychology 1 introduces students to applied psychology by exposing them to a range of approaches and methods. Some areas of study include occupational psychology, offender profiling, sports and exercise psychology and clinical psychology.

**School: SLS                      Level 1                      Semester: Fall**  
**Course Code: A17IB           Course Title: Introductory Biology 1**

Introductory Biology 1 aims to consider key topics in molecular and cellular aspects of biology at an introductory level while demonstrating the relationship between molecular and cellular biology, and the field of biology and the life sciences as a whole. The student will also be provided with the core knowledge and understanding required to undertake more advanced modules in the life sciences and receive an insight into the importance of molecular and cellular biology in health, medicine, technology and society.

**School: SLS                      Level 1                      Semester: Fall**  
**Course Code: A47RM           Course Title: Research Methods and Analysis 1**

Research Methods and Analysis 1 provides the students with basic learning and research skills which includes providing students with basic skills for critically evaluating research and for becoming independent learners. Time is set aside during the course for student and mentor interaction.

**School: SLS                      Level 1                      Semester: Spring**  
**Course Code: A17BP           Course Title: Biology Practical**

Biology Practical aims to provide training and experience in core practical techniques in biology, including the use of laboratory instruments and equipment and in the acquisition, interpretation and presentation of experimental data. Student will also foster an understanding of the importance of health and safety in the laboratory.

**School: SLS                      Level 1                      Semester: Spring**  
**Course Code: A17EB           Course Title: Environmental Biology**

Environmental Biology aims to provide an understanding of environmental processes controlling life on earth and an appreciation of how man's activities can perturb such processes. The practical component aims to provide experience of observation and practical investigation in the field of

environmental biology and to teach basic skills in undertaking biology experiments and statistical analyses.

**School: SLS                      Level 1                      Semester: Spring**  
**Course Code: A47NZ      Course Title: Introduction to Psychology 2**

Introduction to Psychology 2 introduces fundamental methods and concepts in neuroscientific approaches to the human mind, to illustrate how they can be integrated with other psychological approaches, and to describe their application in particular domains of psychology.

**School: SLS                      Level 1                      Semester: Spring**  
**Course Code: A17IO      Course Title: Introductory Biology 2**

Introductory Biology 2 considers key topics in human biology at an introductory level which are relevant to human physiology, health, disease and medicine while providing the student with core knowledge and understanding to undertake more advanced modules in human biology and related topics. The course will also give an insight into the importance of a knowledge of human biology to understanding key issues in health, medicine, technology and society.

**School: SLS                      Level 1                      Semester: Spring**  
**Course Code: A47RE      Course Title: Research Methods and Analysis 2**

Research Methods and Analysis 2 introduces principles of scientific research, basic experimental techniques, and basic statistical concepts and analyses, as well as introducing report writing skills, including incorporating theory and literature with research findings. The course also builds upon basic research skills and basic skills for critically evaluating research.

**School: SLS                      Level 2                      Semester: Fall**  
**Course Code: A48CO      Course Title: Cognitive Psychology 1**

Cognitive Psychology 1 provides students with an understanding of the key empirical findings and theoretical developments in cognitive psychology. Topics include Attention, Knowledge Representation and Conceptual Knowledge, Skill acquisition and expertise, Memory, Thinking and reasoning, and Connectionist models.

**School: SLS                      Level 2                      Semester: Fall**  
**Course Code: A48HD      Course Title: Human Development and Intelligence**

Human Development and Intelligence aims to introduce the concept of intelligence, its origins and its measurement and application. The course also provides an understanding of the processes and landmarks in early human development, including physical, social and cognitive change.

**School: SLS                      Level 2                      Semester: Fall**  
**Course Code: A18HM      Course Title: Human Metabolism**

Human Metabolism provides an overview of metabolism and energy balance, including detail of the key metabolic pathways. This will be applied to human body composition and energy balance. Topics

will include: a review of enzyme reactions, kinetics and regulation; the major pathways of carbohydrate, lipid, amino acid metabolism, and nucleotide biosynthesis and breakdown.

**School: SLS                      Level 2                      Semester: Fall**  
**Course Code: A38HA      Course Title: Human Physiology and Anatomy 1**

Human Physiology and Anatomy 1 develops an understanding of the regional and systemic structure and function of the human body with a focus on Support and Movement and Communication and Control. It also relates knowledge and understanding to aspects of human health and wellbeing.

**School: SLS                      Level 2                      Semester: Fall**  
**Course Code: A38NH      Course Title: Nutrition, Health and Metabolism**

Nutrition, Health and Metabolism provides a thorough grounding in the physiological and biochemical basis of human nutrition. The discussion of metabolic pathways is linked to nutritional and physiological aspects. Emphasis will be placed on the principles of nutrition and on the integration and control of metabolism.

**School: SLS                      Level 2                      Semester: Fall**  
**Course Code: A18TB      Course Title: Plant Biology**

Plant Biology aims to provide an introduction to the structure and function of plants and algae. It is designed for anyone who is curious about plants and algae and wants to find out more about how they grow, provide food and photosynthesise. Understanding photosynthesis is growing ever more important because it underpins political decisions as to how to mitigate climate change.

**School: SLS                      Level 2                      Semester: Fall**  
**Course Code: A38RU      Course Title: Research in Humans 2**

Research in Humans 2 aims to establish knowledge and skills in techniques for data handling, data analysis, and presentation of results obtained in scientific experiments using human volunteers.

**School: SLS                      Level 2                      Semester: Fall**  
**Course Code: A18RB      Course Title: Research Methods in Biology**

Research Methods in Biology establishes knowledge and skills in experiment/survey design, data collection, data handling, data analysis and presentation of results obtained from scientific experiments in relevant fields of the life sciences.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A18NB      Course Title: Animal Biology**

Animal Biology introduces the biology of animals within an evolutionary framework while providing a grounding in practical laboratory techniques, application of statistical analyses, use of the primary literature and preparation of structured reports.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A18BB      Course Title: Basics of Business**

Basics of Business introduces a general overview of business organisation and practices to brewing and distilling and food science students. Topics include Human resource management, Strategic management, Marketing, Finance, and Functions of an Organisation.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A48CY      Course Title: Cognitive Psychology 2**

Cognitive Psychology 2 introduces fundamental cognitive processes underlying language and vision. The course also introduces ergonomics and develops understanding of human sensory capabilities in support of user-sympathetic design and analysis.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A18ET      Course Title: Environmental Toxicology**

Environmental Toxicology aims to provide an understanding of the adverse effects of chemicals on mankind and on the natural environment. As such it incorporates the fundamentals of toxicology and provides an understanding of the ecological impact of the discharge of toxicants and waste materials into the natural environment. An understanding of toxicology is essential for protection of both the natural environment and the domestic and occupational human environments. As a result of the COSHH Regulations, it is essential for all scientists to be able to carry out risk assessment of all projects and a knowledge of toxicology forms the basis for this.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A38HN      Course Title: Human Physiology and Anatomy 2**

Human Physiology and Anatomy 2 develops an understanding of the regional and systemic structure and function of the human body with a focus on Transportation and Defence, Respiration, Nutrition and Excretion, Reproduction and Development and Physical Activity. It also relates the knowledge and understanding gained to aspects of human health, wellbeing and physical activity.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A18IM      Course Title: Introduction to Microbiology**

Introduction to Microbiology provides an introduction to the principal groups of microorganisms, the diversity of microbial metabolism, and some aspects of microbial biotechnology, emphasising the important role that microbes play in our lives.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A18MC      Course Title: Introduction to Cell and Molecular Biology**

Introduction to Cell and Molecular Biology aims to build on topics in cell and molecular biology covered in previous modules and to provide the student with the skills and knowledge required to undertake more advanced modules in cell and molecular biology. Topics include Gene structure and function, Transcription and translation, Eukaryotic cell structure and function, and Cell culture and

immunology.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A38EP      Course Title: Practical Exercise Physiology**

Practical Exercise Physiology aims to provide experience of common measurements in exercise physiology and their principles. Specifically the course aims to develop skills in working with human subjects in a physiology laboratory setting as well as increasing students' understanding of the way physical exercise affects physiological functioning. Students will also be introduced to basic exercise physiology research and will gain an increase in their scientific writing skills.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A48RT      Course Title: Research Methods and Analysis 4**

Research Methods and Analysis 4 introduces intermediate statistical concepts and analyses while developing report writing skills, including incorporation of theory and literature with research findings, research skills and the ability to critically evaluate research.

**School: SLS                      Level 2                      Semester: Spring**  
**Course Code: A48SY      Course Title: Social Psychology**

Social Psychology introduces to students the central theories and experiments in social interaction at an interpersonal and at a group level. Topics include: Attitudes, Attitude and Behaviour discrepancies, Impression formation, Social Cognition, Social interaction and interpersonal skills, and Groups and performance.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A49CL      Course Title: Cognition Across the Lifespan**

Cognition Across the Lifespan outlines important developments in human psychological functioning from the early school years, through adolescence and early adulthood, to old age, as well as providing an understanding of human cognitive functioning, with particular emphasis on the constraints that this places on human behaviour.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A19FX      Course Title: Food Microbiology**

Food Microbiology introduces students to the diverse roles that microorganisms play in the food industry. The course also examines how the microbial flora of a food can impact on its quality, safety and shelf life as well as considering the importance of foodborne disease and the agents that play a role in both the most common, and newly emerging foodborne diseases.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A19FO      Course Title: Foundation Molecular Biology**

Foundation Molecular Biology aims to provide students with a working knowledge and understanding of molecular biology and the skills to apply that knowledge and understanding to a

variety of different course where molecular biology is used. Students should also use those skills to evaluate and interpret published output in molecular biology.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A19VB      Course Title: Invertebrate Biology**

Invertebrate Biology provides an understanding of the phylogeny, classification, importance, diversity and biology of the invertebrates, with particular emphasis on the major marine groups. The course also allows students to develop familiarity with the internal and external structure of marine invertebrates and an ability to identify them using keys.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A19MO      Course Title: Molecular Biology**

Molecular Biology aims to explore the contribution of proteins to cell function, in particular to examine the how protein and therefore cell, and organismal, function is controlled. This will build upon the knowledge gained at level 2. The module will expose students to the techniques used in the purification and biochemical analysis of proteins. The module also aims to foster an awareness of the experimental design and data handling processes required when purifying and characterising proteins.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A19NA      Course Title: Nucleic Acid Technology**

Nucleic Acid Technology aims to describe the methods involved in the manipulation and analysis of DNA and to provide training in core practical techniques in recombinant DNA technology. Course staff will also demonstrate why recombinant DNA is important in the life sciences and will foster an understanding of the importance of health and safety in the laboratory.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A19OE      Course Title: Oceanography & Pelagic Ecology**

Oceanography & Pelagic Ecology introduces physical and chemical oceanography at a suitable level for understanding biological processes that take place in open oceanic, coastal and estuarine waters and to study the growth of plankton (both phytoplankton and zooplankton) and of estuarine flora and fauna in relation to environmental influences. Students will develop existing skills in relevant practical laboratory techniques, application of statistical analyses, use of primary literature and the preparation of structured reports. The course also promotes engagement with topical issues in management of both estuaries and seawaters which involve an understanding of the role of the physical and chemical environment in relation to the organisms.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A19TG      Course Title: Process Technology 1**

Process Technology 1 introduces students to the concepts of mass balances, heat transfer, engineering thermodynamics, fluid mechanics and psychrometry

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A39YA      Course Title: Psychology of Physical Activity**

Psychology of Physical Activity considers how theoretical knowledge can be applied to understanding the psychological determinants and consequences of physical activity, specifically developing an understanding of psychological explanations for participation and non-participation in physical activity and of the impact of physical activity on psychological health. Students will also consider how psychology is related to current public health physical activity agendas.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A49RH      Course Title: Research Methods and Analysis 5**

Research Methods and Analysis 5 introduces advanced statistical concepts and analyses and further develops report writing skills, including incorporation of theory and literature with research findings, general research skills and the ability to critically evaluate research.

**School: SLS                      Level 3                      Semester: Fall**  
**Course Code: A19ST      Course Title: Science and Technology of Brewing and Distilling 1**

Science and Technology of Brewing and Distilling 1 aims to give an understanding of the product definitions of alcoholic drinks as well as the properties of beer and whisky. The course will also provide a strong understanding of the overall process involved in the production of malt, beer and whisky.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A49FS      Course Title: Applied Psychology Health Psychology and Professional Practice**

Applied Psychology Health Psychology and Professional Practice gives insight into the applied work of health psychology and provides an understanding of the role of psychological variables and health. The course also introduces the key theories in health psychology as well as exploring how these key theories can be applied in order to improve health and psychological well being. Students will also gain a critical understanding of issues in health psychology.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19EC      Course Title: Benthic Ecology**

Benthic Ecology aims to provide a thorough understanding of ecological processes on the seabed and sea shore, as well as a knowledge of the biology of the most important algal divisions and animal phyla.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19CB      Course Title: Cell Biology**

Cell Biology covers advanced topics in cell and molecular biology; including the regulation of gene expression, demonstrating how our knowledge of genes, and our ability to manipulate them, can be applied to living systems. The course also provides the student with the skills and knowledge to



understand current research in cell biology.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19FQ      Course Title: Fisheries, Aquaculture & Marine Resources**

Fisheries, Aquaculture & Marine Resources introduces the biology of fisheries, aquaculture and biological interactions with other marine resources, while engaging with topical issues in marine resource utilisation. The course also provides development in relevant practical laboratory techniques, application of statistical analyses, use of primary literature and the preparation of structured reports

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19ML      Course Title: Microbial Pathology**

Microbial Pathology introduces the subject of microbial pathology, centring on human and animal bacterial, viral and fungal pathogens. Students will develop and understanding of the theory of dominant diseases of humans, methods for the diagnosis of disease and methods of disease control. Practical elements of the course including learning safe microbiological techniques for the manipulation of pathogenic micro-organisms, methods for the isolation and identification of bacterial pathogens and how to examine the process of disease control.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19MY      Course Title: Microbial Physiology**

Microbial Physiology familiarises students with some important aspects of the physiology of microbial cells which relate to their growth, metabolism and survival in a variety of habitats.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19NH      Course Title: Nutrition and Human Health**

Nutrition and Human Health expands on the Nutrition, Health and Metabolism. Nutritional requirements at different stages of the human life cycle will be discussed. The role of clinical nutrition in selected diseases will be considered as will be the advantages and disadvantages of specific diets. The concept of malnutrition and nutritional deficiency in the developed and less-developed countries will be analysed.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19TY      Course Title: Process Technology 2**

Process Technology 2 introduces students to the concepts of particulate solids, separation processes, control theory, process economics, Environmental and Safety.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A49CH      Course Title: Psychobiology**

Psychobiology gives a general understanding of the biological basis of behaviour and develops understanding of how the biological basis of behaviour can be studied.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A39RM      Course Title: Research in Humans III**

Research in Humans III establishes knowledge of the principles of research in humans, namely ethical, experimental and methodological principles used in physiology and psychology as part of this students will develop an understanding of the need for ethical approval, specific procedures for obtaining approval, and the design of experiments using volunteer subjects. The course provides opportunity to discuss relevant literature, to be competent in the use of a statistical package, and to carry out data analyses. Student will also receive tutorial support for the writing of a scientific review and ethics committee application for the planning of a project involving human subjects.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A49RO      Course Title: Research Methods and Analysis 6**

Research Methods and Analysis 6 aims to prepare students for their final year project including choosing their topic area and supervisor, reviewing literature and producing literature reviews, and producing and presenting a project proposal.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19RS      Course Title: Research Studies in Biology**

Research Studies in Biology develops skills in information retrieval, handling and presentation with regard to current biological research and knowledge, to give experience of working individually without a strong formal structure, and to prepare students for course work at Honours level.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19TD      Course Title: Science and Technology of Brewing and Distilling 2**

Science and Technology of Brewing and Distilling 2 provides a detailed introduction to the science and technology of malting, mashing, fermentation, distillation and packaging in the brewing and related industries. It also develops practical skills in relation to the ability to malt, brew and distill using pilot plant facilities.

**School: SLS                      Level 3                      Semester: Spring**  
**Course Code: A19SM      Course Title: Scientific Diving & Marine Survey Methods**

Scientific Diving & Marine Survey Methods aims to provide the student with an understanding of scientific diving and a range of other techniques that are useful for studying and monitoring the marine environment. Students entering employment as marine biologists are often required to plan, manage or conduct surveys of the marine environment for purposes of research or conservation management. While diving is often the most effective method for conducting surveys to study marine biota, a range of other techniques also exist and can be more appropriate in a given set of circumstances. This course is intended to provide students with the requisite knowledge to select appropriate techniques for studying the marine environment and provide them with the skills to apply those techniques effectively.

**School: SLS**

**Level 3**

**Semester: Spring**

**Course Code: A49SG**

**Course Title: Social Cognition and Personality**

Social Cognition and Personality explores core theories of both social cognition and of individual differences. Topics include Social Psychology and Individual Differences.