

ICHTHYOLOGY AND FISHERIES SCIENCE

Professor and Head of Department

WHH Sauer, PhD (UPE)

Professors

AJ Booth, PhD (Rhodes)

PJ Britz, PhD (Rhodes)

Research Professor of Fisheries Science

T Hecht, PhD (UPE)

Associate Professors

H Kaiser, Dr.agr. (Bonn)

WM Potts, PhD (Rhodes)

Senior Lecturers

CLW Jones, PhD (Rhodes)

TA Shipton, PhD (Rhodes)

Lecturers

W T Kadye, PhD (Rhodes)

A-R Childs, PhD (Rhodes)

Professor Extraordinaire

K Cochrane, PhD (Wits)

The Department of Ichthyology and Fisheries Science is a leading African academic institution supporting the sustainable utilisation and study of fish and fisheries through teaching and training of students, and conducting research.

At the undergraduate level the Department offers a four-semester major in Ichthyology, which may be taken as a major subject for the BSc and B.Journ degrees.

At the postgraduate level the following degrees are offered: BSc Honours in Ichthyology and Fisheries Science, Master of Science and Doctor of Philosophy in either Ichthyology or Fisheries Science. Masters and Doctoral degrees are by research only through the preparation of a thesis.

Detailed information on course work and curricula may be obtained from the Head of Department.

See the Departmental Web Page <http://www.ru.ac.za/ichthyology> for further details, particularly on the contents of courses.

Ichthyology (ICH) is a four-semester subject which may be taken as a major subject for the degrees of BSc and B.Journ.

To major in Ichthyology, a candidate is required to obtain credit in the following courses: CEL 101;

ZOO 101; BOT 102; ICH 201; ICH 202; ICH 301; ICH 302; CHE 1; and any two first-year semester credits in Mathematics, Statistics or Computer Science (with the exception of the literacy course CSC 1L1). See Rule S.23.

Second-year level courses in Ichthyology

There are two second-year courses in Ichthyology. ICH 201 is offered in the first semester and ICH 202 in the second semester. Credit may be obtained in each course separately and, in addition, an aggregate mark of at least 50% will be deemed to be equivalent to a two-credit course ICH 2, provided that a candidate obtains the required sub-minimum in each component. However, students who wish to major in Ichthyology must obtain credit in both ICH 201 and ICH 202. Adequate performance in ICH 201 is required before a student may register for ICH 202. No supplementary examinations will be offered for either course. Practical reports, essays, seminars and class tests collectively comprise the class mark, which forms part of the final mark. An ecological fieldtrip is held jointly with the Departments of Entomology and of Botany, and all students are required to attend.

Credit in Cell Biology (CEL 101), Zoology (ZOO 101) and Botany (BOT 102) is required before a student may register for ICH 201 or ICH 202.

ICH 201

The course is structured around the theme “fish form” and is comprised of lectures, tutorials and practicals in fish diversity and habitats, anatomy, larval fishes, sensory systems and communication, and fish behaviour. The writing of essays forms an integral part of the course.

ICH 202

The course is structured around the theme “fish function” and is comprised of lectures, tutorials and practicals in evolution and systematics, feeding biology, genetics, physiology, aquaculture and oceanography. The writing of essays forms an integral part of the course.

Third-year level courses in Ichthyology

The ICH 301 and 302 semester courses cover the modules aquaculture, fisheries science,

conservation, limnology, biodiversity of freshwater, estuarine and marine fishes, population ecology, experimental design and scientific writing. An aggregate mark of at least 50% will be deemed to be equivalent to a two-credit course ICH 3, provided that a candidate obtains the required sub-minimum in each component. Adequate performance in ICH 301 is required before a student may register for ICH 302. No supplementary examinations will be offered for either course. Practical reports, essays, seminars and class tests collectively comprise the class mark, which forms part of the final mark.

Credit in ICH 201 and ICH 202 is required before a student may register for ICH 301. Credit in ICH 301 is a prerequisite to register for ICH 302. In addition, students wishing to major in Ichthyology are required to have credit in any two first-year semester-credits in Mathematics, Statistics or Computer Science (with the exception of the literacy course (CSC 1L1)). See Rule S.23.

ICH 301

The course consists of modules of different durations, offered by way of lectures, tutorials, practicals, and field trips. There are modules on aquaculture, and conservation of the aquatic environment, on fish biodiversity in the estuarine, freshwater, and marine environment. The writing of essays and presentation of seminars form an integral part of the course.

ICH 302

A module on experimental biology includes a third-year project, project-related data analysis, and scientific writing. The second part of ICH 302 covers fisheries management and stock assessment and population ecology. The preparation of essays, writing of scientific papers, and the presentation of seminars are important components of the course.

Ichthyology and Fisheries Science Honours

The aim of the Ichthyology Honours degree is to produce free-thinking and critical young scientists capable of performing independent research.

The Honours course is comprised of advanced studies in data analysis, evolution and systematics, speciation, biodiversity, fish biology and ecology, conservation, population dynamics and fisheries resource management, fisheries oceanography, aquaculture and an advanced course in scientific writing. There

are two field excursions, the first to gain insight and practical experience in field sampling techniques and the second to obtain insight into operational aquaculture ventures. Students are required to design a production facility and prepare a business plan for a hypothetical aquaculture venture. A major research project is undertaken through the year, and a report submitted for the final examination, in a form suitable for publication in a peer-reviewed journal. The course is run on the basis of lectures, tutorials, seminars and extended essays. The examination consists of three theory papers, two practical examinations, an oral examination, and research project report. Practical and theoretical work done during the year counts towards the final mark.

Applications for the Honours course must be submitted to the Rhodes University administration (academicadmin@ru.ac.za) by the 30th of September of the preceding year. Besides this application, all applicants are also encouraged to forward a letter of motivation and a curriculum vitae directly to the department administration (difs@ru.ac.za) by the same date. The application and selection process will be completed by mid-October each year and students will be notified soon thereafter.

Master's and Doctoral degrees in Ichthyology or Fisheries Science

Candidates who wish to register for the MSc degree in Ichthyology or Fisheries Science must have a four-year BSc degree or BSc Honours degree in Ichthyology, Fisheries Science, Aquaculture, Zoology or equivalent (as approved by both the Head of the Department and the Board of the Faculty of Science).

Candidates for the PhD degree in Ichthyology or Fisheries Science must have a Master's degree or equivalent in Ichthyology, Fisheries Science, Aquaculture or Zoology or equivalent (as approved by the Head of Department and the Board of the Faculty of Science).

The degree of MSc or PhD in Ichthyology is awarded for the satisfactory preparation of a thesis based on original research on fishes (freshwater, estuarine or marine), especially in the classical fields of systematics, morphology, distribution, ecology, behaviour or biology. The degree of MSc or PhD in Fisheries Science is awarded for the satisfactory preparation of a thesis based on original research on

aspects of fisheries management, fisheries modelling, aquaculture or fisheries economics. Candidates for MSc or PhD degrees may additionally be required to complete such examinable coursework as may be prescribed by the Head of Department.

The PhD degree must make a substantial contribution towards the advancement of knowledge in the chosen field.

All postgraduate students in attendance are required, if called upon, to assist as demonstrators in practical classes.