BIOLOGY

	SUBJECT	INFORMATION
1	**ABOUT THE DEPARTMENT (BACKGROUND AND SERVICES RENDERED)**	The mission of Biology is to provide an integrated, meaningful and sustainable higher education to all our students in the field of Biology; which is shaped and characterized by principles that encompasses amongst other things - student centered learning, professionalism and best practices thus placing our students on a path which will ensure their sustainable growth and development.
2	**STAFF PROFILE (NAME,TITLE,CONTACT AND SHORT CV)**	Prof PH King, PhD – Head of Department – 012 521 4375 **Parasitology** Prof J Welman – PhD – Associated Professor – 012 521 4306 **Palaeontology** Prof JO Olowoyo – PhD – Associated Professor – 012 521 5843 **Ecology and Environmental Health** Dr EBE Moema – PhD – Senior Lecturer – 012 521 5891 **Parasitology** Dr L Middleton – PhD – Senior Lecturer – 012 521 5894 **Botany** Mrs L Mugivhisa – MSc – Lecturer – 012 521 3959 **Ecology and Environmental Health**

		Ms EM Modise – MSc – Lecturer - 012 521 4675 **Parasitology** Mrs M Mkolo – MSc – Lecturer – 012 521 5795 **Tick Biology** Mr C Mavimbela – MSc – Lecturer – 012 521 3919 **Aquatic Biology** Ms GN Lion – Junior Lecturer – 012 521 4683 **Ecology and Environmental Health**
3	**ACADEMIC PROGRAMMES: UNDER-GRADUATES AND POST-GRADUATES(DEGREE PROGRAMME,DURATION,ADMISSION REQUIREMENTS,POSSIBLE CAREER OPPORTUNITIES**	**UNDERGRADUATE BSc PROGRAMMES** The subject Biology is offered as a qualifying course for a three or four year degree of Bachelor of Science. The four-year BSc starts with an Extended Curriculum Programme (ECP) in Biology for students who do not comply with the admission requirements/are not selected for the first level in the three-year qualification. This ECP in Biology therefore precedes Biology I, if the admission requirements for Biology 1 are not met. The admission requirements, for the first level of the three-year BSc is NQF4 and a National Senior Certificate with University exemption. A rating will be calculated as the sum of marks obtained for the six best matric subjects. Possible courses that can be combined with Biology as mayor courses for a BSc degree are Physiology; Biochemistry, Chemistry and Psychology. **BSC HONOURS IN BIOLOGY**

		A BSc Honours in Biology is also presented. This course focuses on Conservation Biology and Management, Plant Systematics, Palaeontology and Philosophy of Biological Science, Fish Parasitology, Tick Biology and the completion of a research project. Admission requirements are: BSc with 60% for Biology/Zoology III or any relevant subject at third year level and/or a personal interview with the Biology honours selection committee. **MSC AND PHD** A Masters and Doctorate degree in Biology can only be achieved through the submission of a dissertation/thesis. Research in the subject focuses mainly around Conservation Biology, Environmental Pollution, Acarology, Ethnobotany, Fish Parasitology and Palaeontology. Selection of Masters students depends on the submission of a BSc honours degree certificate in a relevant field of study acquired at a South African University or an equivalent qualification accredited by the South African Qualifications Authority. Selection of PhD student in Biology depends on the submission of a MSc certificate in a relevant field of study, acquired at a South African University or an equivalent qualification accredited by the South African Qualifications Authority.
4	**SUPPORT STAFF (PREFERABLY ADMINISTRATION STAFF)**	Mrs SE van Zyl – Departmental Secretary – 012 521 5662 Mr NML Mnisi – Hons – Snr Technical Officer – 012 521 5660 Mr MMA Mitonga – Hons – Technical Officer – 012 521 5849
5	**STUDENT CLINICAL TRAINING's TIME TABLE**	None
6	**ALUMNI (FORMER BEST STUDENT)**	None
7	**PROFESSIONAL BODIES THAT THE**	SACNASP

	DEPARTMENT IS REGISTERED WITH	
8	**LATEST RESEARCH OUTPUT**	• Olowoyo, J.O., Mugivhisa, L.L. and Busa, N.G. 2015. Trace metals in soil and plants around a cement factory in Pretoria, South Africa. Polish Journal of Environmental Studies, PJOES-00930-2014-02. • Mulaudzia, R.B., Tshikalangeb, E., Olowoyo, J.O., Amoo, S.O. and Du Plooy, C.P. 2015. Antimicrobial activity and safety evaluation of commonly used South African herbal mixtures. South African Journal of Botany, 98: 193. doi:10.1016/j.sajb.2015.03.095. • Olowoyo, J.O. and Lion, G.N. 2015. Urban farming as a source of trace metals in human diets. Accepted manuscript with South African Journal of Science. • Olowoyo, J.O., Mugivhisa, L. and Sithole, S.C. 2015. Exposure to trace metals from dust samples collected from air conditioning systems and carpets from offices in a University. Trace Element and Electrolyte, DOI 10.5414/TEX01388, pp 1 – 8. • Mugivhisa, L. and Olowoyo, J.O. 2015. An assessment of university students and staff perceptions regarding the use of human urine as a valuable plant nutrient in South Africa. African Health Sciences, Manuscript ID WKR0-2014-05-0270. • Middleton, L. 2015. South African consumers' selection criteria for ornamental plants: a market perspective, South African Journal of Plant and Soil, DOI: 10, 1080/02571862.2015.1025445. • Middleton, L. 2015. A preliminary study of South African consumers' knowledge of and their attitudes towards using indigenous ornamentals in horticultural applications.

		South African Journal of Plant and Soil, ISSN 0257-1862 EISSN 2167-034X.
9	**CAREER OPPOTUNITIES**	Any young biologist entering the market, after graduating at a university, has to realize that Biology encompasses a wide field in which to apply the acquired skills. Careers are not limited to institutes like the one where training was done (opportunities at such institutes are few, and mainly available for academically strong candidates interested in postgraduate research and a teaching). The main market comprises a large number of state, provincial, local authority, and private employers. Teaching at primary and tertiary school level, as well as national and provincial conservation bodies are the only employers taking larger numbers of employees in this field. This is a narrow scope within which to find employment. It is, therefore, important for the Biologist to consider the full spectrum to which Biology applies, and to realize that many other employers use Biologists. Biology skills are applied in ecology, tourism, environmental monitoring, environmental resource development, impact of industries on the environment, water purity, sanitation, food production, food processing, animal and plant health, parasite control and many more aspects that are of importance to society. For all the career possibilities the young biologist has to look wider than the mentioned formal education departments (primary to tertiary level) and public conservation bodies. Many large

		concerns (mines, electricity suppliers, paper mills, saw mills) need Biologists to study and advise on the impact that their activities has on the environment. Larger libraries, the forestry department, water affairs, several private conservation bodies, game farms, science and technology companies, pharmaceutical companies, chemical distributors (UAP, BAYER, and others), and tour operators use the services of biologists.