RHODES UNIVERSITY

INSTITUTE FOR WATER RESEARCH

HONOURS IN ENVIRONMENTAL WATER MANAGEMENT

COURSE HANDBOOK

Course Coordinator: Dr Paul Mensah
NB. Every care has been taken to ensure that the information given in this booklet is aligned with that given in official University publications such as the University Calendar. Where there is a difference, the information given in the official University publication should be taken as correct.
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# APPENDICES

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# 2018 EWM Honours Orientation programme

## PROGRAMME FOR EWM HONOURS STUDENTS ORIENTATION

**IWR Meeting Room**

**Monday 5/2/2018 - Friday 16/2/2018**

<table>
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<tr>
<th>DATE</th>
<th>ACTIVITY</th>
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</table>
| **Monday, 5 February**  
09h00-09h15  
09h20-11h00  
11h30-12h00 | Welcome  
General outline of the EWM Honours Course  
Tour of building and location of instruments | Tally  
Paul  
Khaya |
| **Tuesday, 6 February**  
09h00-11h00 | Introduction of EWM Honours modules and Research Project topics  
Tally – 09.00  
Nelson – 09.30  
Paul – 10.00  
Jane – 10.30 | Module lecturers |
| **Wednesday, 7 February**  
09h00-11h00  
11h30-12h30 | How to get the most out of lectures  
Complexity seminar | Nelson  
Tally |
| **Thursday, 8 February**  
09h00-11h00 | Discussion with individual staff members for Research Project choices | Staff and EWM Honours students |
| **Friday, 9 February**  
10.30 -11.30 | Social meeting of IWR staff and students: IWR TEA IWR meeting/tea room | Staff and students |
| **Monday, 12 February**  
09h00-11h00 | Seminar on "Introduction to Research Projects" | Tally |
| **Tuesday, 13 February**  
09h00-11h00 | Seminar on "Introduction to Research Projects" | Tally |
| **Wednesday, 14 February**  
09h00-11h00 | "Introduction to Research Projects" | Project supervisors to meet individually with students |
| **Thursday, 15 February**  
09h00-16h00 | Register at the Student Bureau | All EWM Honours students |
| **Friday, 16 February**  
14.30 – 16.00 | STAFF ONLY Meeting to finalise Honours programme and get ready for the year | All staff |
2 Aim of course
This degree aims to equip students with the conceptual understanding and practical knowledge needed to make an effective contribution to the sustainable management of freshwater resources taking into account complex social-ecological systems and the way in which people engage with the environment. The EWM is offered in collaboration with the Department of Geography.

3 Hosting of course
The course is currently being hosted by the Geography Department but coordinated by the IWR. It is expected that the hosting would be transferred to the IWR from 2019 academic year.

4 Modules
There are five modules making up the EWM course. These are Adaptive Integrated Water Resources Management (IWRM), Environmental Water Quality, Hydrology, Freshwater Ecology and a water-focused Research Project. Adaptive IWRM is compulsory and students are allowed to take one equivalent course from the Geography Department, with approval from the heads of both the IWR and Geography.

5 Assessment
The marks total for the year is 500, which normally comprises 100 marks for the research project, 100 marks for the compulsory module and 300 for the three elective modules (i.e. 100 each). The distribution of the marks for each module is included in the module outline below.

6 Outlines for modules hosted by the IWR

5.1 Adaptive Integrated Water Resources Management (Compulsory for EWM students)
 Prof Tally Palmer (Institute for Water Research)

Integrated Water Resource Management (IWRM) is the internationally accepted best practice for water resource management. However it has largely failed in South Africa since it was first embedded in law and policy after 1994. It is most specifically the practice of integration that is so difficult. Water resource management is still persistently undertaken in silos. As a result, the core goals for IWRM in South Africa, of equity, sustainability and efficient use, have frequently not been met. However, since the 1990’s, a literature emerged, that indicated practical integration, and progress towards the core goals could be achieved using a set of “new” concepts. This course invites students to engage with the practice of new concepts that could result in effective IWRM – a practice suggested as Adaptive IWRM”. The course exposes students to the literature that underpins the integrative thinking of the last two decades: critical general complexity, transdisciplinarity, complex social-ecological systems (CSES), systems thinking, adaptive systems, strategic adaptive management, resilience, social learning, expansive
learning, and political ecology. They are presented in the form of unfolding case studies, and through a variety of activities.

Outcomes
At the end of this module students are expected to:

- Appreciate catchments as complex social-ecological systems
- Understand the transdisciplinary approach to water resources management
- Understand Water Governance and various institutions involved in South Africa
- Appreciate the role of learning in the practice of A-IWRM
- Demonstrate participatory water governance using case studies

Assessment
Literature based Introduction to project: 20%
Group work and oral feedback in discussions: 20%
Class Test: 20%
  3 hours examination in November: 40%

5.2 Environmental Water Quality (EWM students only)
Dr. Paul Mensah, Dr Neil Griffin (Institute for Water Research)

It requires a multi-disciplinary approach to manage environmental water quality since the pollution of aquatic ecosystems results from complex interactions of chemical substances in the environment. Thus, to ensure the sustainable use and protection of freshwater resources in South Africa, the environmental water quality (EWQ) concept, which involves the combined use of water physicochemistry, biomonitoring and ecotoxicology to assess the health and manage, is employed as a tool. This course focuses on how to use the three pillars of EWQ and their integrations for holistic assessment and management of water quality for decision-making. There is emphasis on working with and manipulating water quality data, conducting laboratory experiments and their practical applications.

Outcomes
At the end of this course, you will be able to:

- Understand and evaluate how pollution affect aquatic ecosystem health and the implications thereof;
- Demonstrate an understanding of the complexity of water quality managing and the three pillars of EWQ
- Appreciate, critique and apply the various EWQ tools (physico-chemistry, biomonitoring and ecotoxicology) for managing water quality.
- Integrate complex EWQ information for water resource management
Global freshwater resources are declining in terms of quality and quantity. This module focuses on the management of freshwater ecosystem health by paying detailed attention to methods and approaches as well as the connection between ecosystem structure, function and services. The module also focuses on policy and regulatory dimensions of freshwater ecosystem management and sustainability.

Outcomes
At the end of this module students are expected to:

- Gain critical insights to the structure, function and processes of freshwater ecosystems
- Demonstrate an understanding of and apply important ecological tools and approaches for managing aquatic ecosystem health in South Africa
- Demonstrate an understanding of the policy and regulatory dimensions of freshwater ecosystem protection
- Analyse and interpret complex ecological data in the context of freshwater ecosystem management

Assessment
Course work: 50%
Examination: 50%

5.4 Hydrology (EWM students only)
Dr Jane Tanner, Dr Sukhmani Mantel (Institute for Water Research)

The course will include both surface and groundwater, addressing predominantly water quantity but also dealing with water quality. Students will learn to understand human influences on the hydrological system, and apply tools, such as modelling, for the proper integration of hydrological knowledge and analysis in water resources planning and management. You will gain an awareness of the importance of hydrology to society, and learn about relationships between hydrology and other disciplines such as ecology and climatology. It is preferable to have completed the GIS honours course as hydrological applications within GIS will be covered.

Outcomes
Students will:
• Gain knowledge of the literature and contemporary research questions in hydrology
• Use information and communication technology within a hydrological context.
• Master the major hydrological methodologies and applications with regard to water quantity, including techniques for data collection, processing and analysis, and the application of catchment hydrological modelling and aquifer modelling techniques.
• Evaluate and analyse hydrological systems and processes at a wide range of scales in both space and time for the purpose of water resources assessment.

Assessment
Coursework (Course assignments, seminar, essay and practical): 80%
2 hours examination: 20%

7 Outlines of course hosted by the Geography Department

6.1 Research Philosophy and Methodology (Compulsory for Geography students)
Prof. Fred Ellery (Geography Department)

The purpose of the Research Philosophy and Methodology course is to develop your understanding of the discipline’s philosophies and methodologies so that you can undertake a research project in accordance with accepted disciplinary norms. There are 13 class activities spread over four weeks followed by one week of research proposal writing. Activities include:
1. Review past projects: their scope, problem statements, length, references, conclusions.
2. Examine the Knowledge Vee and Concept Mapping.
3. Develop the research question.
4. Conduct and write a draft literature review.
5. Explain knowledge and value claims.
7. Consider the shifting paradigms of the geographical discipline.
8. Consider how methodology is related to philosophy and ontology?
9. Develop a research design, including methods to generate and analyse information.
10. Consider case studies and the study area
11. Construct a methodology matrix
12. Write a research proposal.

Many of the activities require preparation and handing-in material online using RUnconnected.

Outcomes
Explain that research can be positioned according to different paradigms which have changed as the discipline has evolved.
Demonstrate that you can interpret your own, and other people's work, by making appropriate knowledge and value claims.

Demonstrate an ability to design a methodology and/or methodologies through which information can be collected accurately and consistently.

Make an appropriate selection from a range of techniques through which information can be analysed and transformed.

Explain relationships between ideology, epistemology, ontology and methodology of selected research work.

Produce a written research proposal which contains consistent and appropriate concepts, theories and methods and which is presented in a scientifically acceptable form.

Assessment
Draft Literature Review: 10%
Methodology matrix: 10%
Research Proposal: 40%
Proposal presentation: 10%
Examination: 30%

6.2 Extended GIS
Ms. Gillian McGregor (Geography Department)

The aim of this GIS course is to develop skills learnt in the GOG302 course and to extend students’ knowledge and skills in carrying out analysis using GIS methods. Students are encouraged to develop a critical appreciation of all aspects of GIS including its impact on society and trends and issues in spatial technologies. The emphasis is on working with secondary data sets for South Africa using typical GIS analysis methods to solve problems. There is a practical exercise in planning and carrying out a group project with field and desk-top work, to develop GIS project skills. A field trip to Cape Town to visit the National Geo-spatial Information Directorate and other organisations that use GIS in South Africa promotes insight into the potential use of GIS for planning and management in this country.

Outcomes
1. By the end of the course students should be able to demonstrate a critical approach to GIS; knowledge of GIS theory; the ability to solve practical problems and ‘trouble-shoot’ based on practical and theoretical knowledge.
2. Students should be able to identify and interpret spatial relationships and patterns; source spatial data and create spatial data using a selection of data capture methods; apply a selection of appropriate data manipulation and spatial analysis techniques; implement a GIS project from start to finish.

Assessment
Coursework (80%): Four portfolios consisting of a range of class tasks and written assignments (40
marks); GIS project conducted under exam conditions (20 marks); group project (10 marks); conference and/or field trip assignment (10 marks).

Examination (20%): 2 hour paper in June.

6.3 Climate Change, Extreme Events and Disasters

*Dr Des Pyle (Research Associate, based at Kingswood College, Grahamstown)*

This module involves a study of the causes and consequences of climate change, with particular emphasis on a global increase in extreme weather events and disasters. The IPCC (Intergovernmental Panel on Climate Change) warns in its latest report that dry regions of the world will receive less rainfall and wet areas will see heavier deluges as the whole globe suffers the consequences of rising greenhouse gas emissions. As such, the causes and consequences of climate change will be investigated in depth, together with an overview of numerical climate modelling and future climate scenarios. The course will focus on the increasing incidence of hydro-meteorological hazards and disasters and how this is linked to climate change. An evaluation of strategies to mitigate hydro-meteorological hazards will provide a more applied aspect to the course. The course will include a field trip, probably to the forecast office, South African Weather Service, Port Elizabeth.

**Outcomes**

Students will be able to:

1. Differentiate between climate change and climate variability/climate cycles.
2. Understand the causes of anthropogenic climate change.
3. Evaluate the evidence and consequences of climate change.
4. Understand the concept of numerical modelling and predictions for future climates.
5. Critically analyse the links between climate change and extreme/severe weather events.
6. Understand the causes and consequences of hydro-meteorological hazards and disasters (in particular floods, sea-level rise, drought/desertification, severe storms, wildfires and informal settlement fires).
7. Evaluate strategies for mitigating, preventing and coping with hydro-meteorological hazards and disasters.

**Assessment**

Coursework (80%): weekly assignments/essays, 1 formal oral presentation, a portfolio, seminar/tutorial participation

Examination (20%): 2 hour paper in November.

**Key Readings**


6.4 The Origin and Dynamics of Wetlands in Southern Africa
Prof. Fred Ellery (Geography Department)

Hydrology is viewed as the primary driver of wetland structure and function. However, with an average altitude of approximately 1 000 m, Southern Africa is situated at an unusually high altitude for a subcontinent that has not undergone mountain building for several hundreds of millions of years. Given this, erosion is the dominant geomorphic process at a subcontinental scale. Given that wetlands occur in geomorphological settings that are non-erosional as they are typically characterised by valley-fill sedimentary sequences, it is intriguing that the region contains many wetlands in diverse geomorphic settings. Participants will consider the landscape settings in which wetlands occur and will develop and appreciation of key knowledge gaps in the field. The course will end up discussing a novel conceptual model of wetland structure and function in southern Africa and consider its applicability globally. A field trip will form an integral component of the course.

Outcomes
The outcomes of the course require that students demonstrate competence as follows:
1. Identify processes contributing to wetland origin in the region by analysis of wetland structure.
2. Explain and justify landscape level processes contributing to wetland form and dynamics.
3. Explain and justify anticipated future trajectories of change in wetland structure.
4. Interpret the relevance of this understanding for wetland management.
5. Consider the potential impacts of a changing environment on the landscape.

Assessment
Coursework (50%): weekly assignments/essays, 1 formal oral presentation per participant and a field notebook demonstrating knowledge gained through field trip participation
Examination (50%): 3 hour paper in November.

6.5 Earth Observation in a Changing World
Prof. Ian Meiklejohn (Geography Department)

The module is practical and case study driven to investigate how we can use Remote Sensing to analyse landscapes at a variety of spatial and temporal scales. Undergraduate studies will be extended to examine new technologies and data sets. In addition, we will use investigate past environments and to predict the future consequences of environmental change. After an introductory week covering global change theory, we will begin with weekly case studies. Each study will involve a theoretical component, the identification of appropriate data, the manipulation of data and the production of an output. The outputs will be varied and can be
one or more of the following: posters, PowerPoint presentations, brochures, academic reports, multimedia clips, and essays. The topics are wide ranging and can be tailored to meet the interests of course participants.

Outcomes
The outcomes of the course are that students will be able to:
1. Differentiate between environmental change and climate change.
2. Understand the causes and consequences of environmental change and climate change.
3. Utilise Earth Observation technologies to identify and interpret change.
4. Interpret field evidence for environmental change.
5. Interpret landscapes and their evolution.
6. Consider the potential impacts of a changing environment on the landscape.

Assessment
Exam: 25%; Classwork: 75%; comprising 4 Studies (15% each x 4); Global Change Assignment: 15%.

A field trip linked to one of the case studies will take place.

6.6 Political Ecology
Prof. Thembela Kepe, Ms Sine Memela (Geography Department)

This course explores how politics, the economy, history and culture shape, and are shaped by interactions of people with the physical environment. Analysis moves beyond the roles of government and interest groups in shaping environmental policies, to expanding our understanding of 'politics' in: (i) environmental discourses and knowledge; (ii) economic systems; (iii) regimes of natural resource ownership and use; and (iv) everyday struggles within and between communities and interest groups as they shape human-nature relationships. As Michael Watts once wrote: Political ecology is “an approach to, but far from a coherent theory of, the complex metabolism between nature and society. Among other things, understanding of power relations in these relationships is important to the political ecology approach.

This is a reading-intensive course. The contact sessions take the form of a class discussion based on the prescribed readings covering a particular theme in each of the five weeks of the course. These themes include:

- Usefulness and critiques of political ecology as an analytic lens in geography
- Revisiting population and scarcity (why are Malthusian ideas still influencing environmental policy today?)
- The production of nature thesis
- Biodiversity, conservation and power
- Political ecology of land rights
Outcomes
By the end of the course students should be able to:

- Appreciate the possibilities and challenges of using political ecology for understanding people-environment relationships,
- Appreciate social constructedness of nature,
- Strengthen their analytical and communication skills by using political ecology to critically evaluate relevant case studies as part of written assignments

Assessment
- Class participation: think pieces; class presentations; leading discussion: (20%)
- Field-based research project (part of an overnight fieldtrip): (40%)
- 24-hour take-home exam: (40%)

6.7 Small Town Geographies in South Africa
Ms. Philippa Irvine (Geography Department)

The course will explore the geographies of small towns in South Africa covering their varying characteristics, the issues they face and their development experiences and potentials. The course deals with broad issues related to post-productivism, which include the impacts of tourism, second homes and LED (Local Economic Development) initiatives. **Field trip:** 2 to 3 day visit to a local small town for data collection.

Assessment
Daily and weekly tasks, one long essay (50%); 3 hour exam (50%)

Core text

6.8 GIS: Internship
Mr. Ben Cobbing (Research Associate, CSS), Ms Gillian McGregor (Geography Department)

The module takes the form of an internship at a GIS practice. The aim of the module is to integrate, “theory, practical and reality,” through working in a real GIS environment, with the intention of developing a graduate who is more useful in the GIS market. The course content will be determined by available opportunities in the GIS practice. There are limited places available and students would be expected to have successfully completed one of the other Honours GIS courses. Time allocation will be equivalent to an Honours course. Students will be able to negotiate dates and times, but they will be expected to treat the course as a regular job and they will need to make themselves available for blocks of time of 2 to 3 weeks, during which they must be available to be away on field work.
Assessment
Weekly assignments presented as an examinable portfolio: 100%

8 Research Projects
The Research Project constitutes a full model of the EWM Honours course and students are expected to undertake their research and submit a complete report (a mini-dissertation) at the end of the academic year. Final submission for this year has been scheduled for the week of 15-19 October 2018. Below are some proposed topics to be supervised by the lecturers of the different EWM modules. Students may select a topic and discuss it with the respective potential supervisors to give them more details.

Proposed topic for A-IWRM research projects
- Exploring the functionality of the Makana Water Forum (Tally Palmer)

Proposed topics for Freshwater Ecology research projects
- Assessment of impacts of sediment particles on freshwater snail and mayfly (Nelson Odume and Paul Mensah).
- Testing and further refinement of the macroinvertebrate-based sediment biomonitoring index for South Africa (Nelson Odume).

Proposed topics for EWQ research projects
- Reproductive toxicology of freshwater snails exposed to salts and/or pesticide (Paul Mensah and Khaya Mgaba)
- Impact of duckweed/water hyacinth on river ecosystems by assessment of selected physicochemical variables and macroinvertebrates/diatoms (Paul Mensah and Neil Griffin).
- Trend analysis of sulphates and contribution of sulphate-containing aerosols in sulphate levels in South African rivers (Neil Griffin).

Proposed topics for Hydrology research projects
- Generating a system level model of Grahamstown (Sukhmani Mantel and Jane Tanner)
- Investigating evaporation from different crop types in South Africa Grahamstown (Sukhmani Mantel and Jane Tanner)
- Rainwater harvesting as an alternate water source in Grahamstown (Sukhmani Mantel and Andrew Slaughter)
- Value of Grace Level 3 product for hydrological modelling (Jane Tanner and Sukhmani Mantel)
- Analysis of use of Google Earth elevation data as a surrogate for measured hydraulic cross-sections in ecological Reserve modelling (Jane Tanner and Sukhmani Mantel)
• Improving understanding of the surface water and groundwater dynamics of the Grahamstown spring and surrounding rivers (Jane Tanner)

9 Staff of the Institute for Water Research involved in the EWM course

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<tr>
<th>Name</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td><strong>Lecturing Staff</strong></td>
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</tr>
<tr>
<td>Prof Tally Palmer</td>
<td>Director IWR, Adaptive IWRM lecturer</td>
<td>1.19</td>
<td><a href="mailto:tally.palmer@ru.ac.za">tally.palmer@ru.ac.za</a></td>
</tr>
<tr>
<td>Dr Nelson Odume</td>
<td>Director UCEWQ, Freshwater Ecology lecturer</td>
<td>1.18</td>
<td><a href="mailto:n.odume@ru.ac.za">n.odume@ru.ac.za</a></td>
</tr>
<tr>
<td>Dr Paul Mensah</td>
<td>Course Coordinator, EWQ lecturer</td>
<td>1.14</td>
<td><a href="mailto:p.mensah@ru.ac.za">p.mensah@ru.ac.za</a></td>
</tr>
<tr>
<td>Dr Jane Tanner</td>
<td>Hydrology lecturer</td>
<td>1.5</td>
<td><a href="mailto:j.tanner@ru.ac.za">j.tanner@ru.ac.za</a></td>
</tr>
<tr>
<td>Dr Neil Griffin</td>
<td>EWQ lecturer</td>
<td>1.17</td>
<td><a href="mailto:n.griffin@ru.ac.za">n.griffin@ru.ac.za</a></td>
</tr>
<tr>
<td>Dr Sukh Mantel</td>
<td>Hydrology lecturer</td>
<td>1.16</td>
<td><a href="mailto:s.mantel@ru.ac.za">s.mantel@ru.ac.za</a></td>
</tr>
<tr>
<td>Mrs Margaret Wolff</td>
<td>Adaptive IWRM lecturer</td>
<td>1.20</td>
<td><a href="mailto:m.wolff@ru.ac.za">m.wolff@ru.ac.za</a></td>
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<tr>
<td><strong>Administrative and Technical Staff</strong></td>
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<tr>
<td>Mrs Juanita McLean</td>
<td>Administrative Secretary</td>
<td>1.4</td>
<td><a href="mailto:j.mclean@ru.ac.za">j.mclean@ru.ac.za</a></td>
</tr>
<tr>
<td>Mr David Forsyth</td>
<td>Principal Technical Officer</td>
<td>1.2</td>
<td><a href="mailto:d.forsyth@ru.ac.za">d.forsyth@ru.ac.za</a></td>
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<tr>
<td>Ms Khaya Mgaba</td>
<td>Senior Technical Officer</td>
<td>1.20</td>
<td><a href="mailto:k.mgaba@ru.ac.za">k.mgaba@ru.ac.za</a></td>
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<tr>
<td>Interns</td>
<td>Technical/laboratory assistance</td>
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10 Who do I ask?

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<tr>
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<th>Question/Issue</th>
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<tr>
<td>1</td>
<td>A question about the course content or course activities.</td>
<td>Ask the lecturer giving the module or the Course Coordinator.</td>
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<td>2</td>
<td>Concerned about performance and want advice on how to improve</td>
<td>Make an appointment to see your lecturer, Course Coordinator or the Director of the IWR</td>
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<tr>
<td>3</td>
<td>Need to discuss an academic issue, but don’t want to approach the lecturer giving the module</td>
<td>Make an appointment to see the Director of the IWR</td>
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<td>4</td>
<td>Have a query about marks, student records, practical or tutorial group allocation</td>
<td>See Course Coordinator</td>
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<td>5</td>
<td>Want to raise a concern about a course</td>
<td>See your course representative who will bring the issue to the next meeting</td>
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<tr>
<td>6</td>
<td>Want to apply for an extension or a Leave of Absence (LOA)</td>
<td>Ask for LOA form from the Administrative Secretary and/or download an extension from. Fill and submit to the AS to be passed on to the Course Coordinator who. You will normally be informed of the decision by email within a few days of submitting the application. If you are away for medical reasons, you do not need to fill in an LOA until you have returned to lectures.</td>
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A phone call or email to the secretary to say that you will be away for some time will suffice.

Want access to laboratories and/or equipment

See Ms Mgaba with laboratory queries, use and bookings of laboratories, and field equipment loans. See Mr Forsyth for IT related queries.

11 Time Commitment
All courses are normally five ‘contact’ weeks and students are required to spend 40 hours per week engaged with each course’s learning activities. You are required to spend a minimum of 10 weeks (at 40 hours per week) on your research project.

12 Timetable

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<tr>
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<th>Public Holidays/Meetings</th>
<th>EWM Honours</th>
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<td>2 Feb 3 Feb</td>
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<td>19 Mar 23 Mar</td>
<td>21, Wed, Human Rights Day</td>
<td>IWR Core</td>
<td>TP Proposal presentation (22-23)</td>
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<td>24 Mar 8 Apr</td>
<td>Easter Vacation &amp; Graduation</td>
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<td>9 Apr 13 Apr</td>
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<td>Research</td>
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<td>23 Apr 27 Apr</td>
<td>27, Fri, Freedom Day</td>
<td>Research</td>
<td></td>
</tr>
<tr>
<td>30 Apr 4 May</td>
<td>1, Tues Workers Day</td>
<td>Research</td>
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<tr>
<td>7 May 11 May</td>
<td></td>
<td></td>
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<tr>
<td>14 May 18 May</td>
<td></td>
<td>EWQ</td>
<td>PM</td>
</tr>
<tr>
<td>21 May 25 May</td>
<td></td>
<td>EWQ</td>
<td>PM</td>
</tr>
<tr>
<td>28 May 1 Jun</td>
<td>Swot Week</td>
<td>EWQ</td>
<td>PM</td>
</tr>
<tr>
<td>4 Jun 8 Jun</td>
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<td>EWQ</td>
<td>PM</td>
</tr>
<tr>
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<td>Exams</td>
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<td>PM</td>
</tr>
<tr>
<td>18 Jun 22 Jun</td>
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<td>23 Jun 15 Jul</td>
<td>July Vacation</td>
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<td>16 Jul 20 Jul</td>
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<td>FWE</td>
<td>NO</td>
</tr>
<tr>
<td>23 Jul 27 Jul</td>
<td></td>
<td>FWE</td>
<td>NO</td>
</tr>
<tr>
<td>30 Jul 3 Aug</td>
<td></td>
<td>FWE</td>
<td>NO</td>
</tr>
<tr>
<td>6 Aug 10 Aug</td>
<td>9, Thurs, Women’s Day</td>
<td>FWE</td>
<td>NO</td>
</tr>
</tbody>
</table>
### 13 Plagiarism

In an academic setting whereby you write an assignment, essay, report or your research project, it is normal to draw on material written by others. However, when you do this, it is important that you acknowledge the fact that you have drawn on other people’s work. There are standard procedures for doing this; for example, by citing a reference and providing details of the source in a reference list at the end of the assignment. You are expected to do this even where you do not quote directly from your source, but merely express in your own words ideas or arguments that you have taken from that source. In addition, where you quote verbatim from a published source, you must put inverted commas round the quoted material and provide a page number. The only situation in which these rules do not apply strictly is in examinations written without access to books and other reference materials (Rhodes University Geography Handbook, 2014). Failure to provide appropriate reference amounts to plagiarism. In Rhodes University, plagiarism is not condone in any form and has a dire consequence. The university’s policy on plagiarism states that “Plagiarism, in an academic, university context, may be defined as taking and using the ideas, writings, works or inventions of another, from any textual or internet-based source, as if they were one’s own” (Rhodes University, 2008: 2). Students are required to familiarise yourselves with this policy, which can be found at [https://www.ru.ac.za/media/rhodesuniversity/.../Plagiarism.pdf](https://www.ru.ac.za/media/rhodesuniversity/.../Plagiarism.pdf).

Disciplinary actions are taken against students who are found to have plagiarised. Normally, a Disciplinary Committee (DC) is set up to deal with plagiarism cases. If the DC concludes that plagiarism has occurred, it makes a ruling as to what disciplinary steps are appropriate. In terms of the Senate guidelines, these steps may range from giving a warning (for first time and minor offences), to imposing a mark penalty and, in more serious cases, to withdrawing the student’s DP. If the DC establishes a more serious case of plagiarism, the Institute is required to report the matter to the Senate Plagiarism...
Tribunal to investigate and make recommendations with regard to disciplinary offences. The Tribunal may impose penalties such as exclusion or even expulsion from the University. The Institute is required to keep a record of all cases of plagiarism detected, including minor offences.

Students are therefore advised to submit their works (essay, report, research projects, etc.) to Turnitin Drafts using RUconnected to check for plagiarism. You are also required to complete the institutional plagiarism cover sheet (see Appendices) to indicate that you have performed a plagiarism check.

14 Duly performed (DP) requirements
Before you can write your course examinations, you must retain your DP certificate to certify that you have met the requirements of the course. A DP Certificate is not physically issued, but is awarded by default, unless the course requirements are not met. If the course requirements are not met, the Head of Institution has the prerogative to withdraw your ‘Certificate’. If a DP is withdrawn, a student will be excluded from the rest of the course, which includes writing the examination. A DP is ‘issued’ to those students who can:

“Demonstrate that they have engaged meaningfully in ALL class activities. This means regular attendance at lectures, practicals, tutorials, field trips, tests and any other scheduled meetings; submission of all required work to a satisfactory standard; engagement with additional material, including supportive tasks set in RUconnected.”

The decision regarding your DP will be made no later than one week before the end of teaching for the relevant semester course. It may be made earlier when circumstances apply. Unless reasonable grounds can be demonstrated (normally by means of an acceptable LOA), students are expected to attend ALL scheduled activities and to hand in ALL coursework. You may lose your DP for plagiarism or a breach of the University’s Disciplinary Code of Conduct.

15 Referencing
When writing an essay, a report or any other written document, it is necessary to acknowledge correctly all sources of information and ideas. We do this for three reasons:

1. To acknowledge the author of the material
2. To provide supporting evidence for our statements
3. To allow the reader to follow up points of interest.

This means that in the body of the essay or report (the text) we need to make clear links between the information and its source. The citing of the source must be integrated into the normal flow of the text and this can be accomplished in a number of ways as is illustrated in the examples given below.

At the end of the document we provide a Reference List that lists, in alphabetical order, all works that have been cited in the text, together with their full publication details: author, initials, date of publication, title of article or chapter if relevant, title of book, journal, publisher and place of publication. Examples are given below under ‘Compiling a Reference List’.
There are many different referencing styles. In the IWR, students are not restricted to a particular style so far as they are consistent to the usage of whatever style they choose. Never mix styles in one piece of work.

Further information on in-text referencing and compiling a reference list can be found in the Information Literacy section of the Rhodes University website:

http://www.ru.ac.za/static/library/infolit/comm.html

Look for referencing guidelines under Step 5 Communication (Writing an essay/assignment).

Citing published works in written text
What is citing? Citing involves acknowledging the source of the information that one uses in their own work.

1. The citation in the text should include author(s) and, the date of publication. (E.g. Donald, 2009), except where the citation applies to the whole article, chapter or book.
2. When the source is written by two authors, refer to both (e.g. Schooney and Martell, 1979).
3. When there are three or more authors use the convention et al. (e.g. Schooney et al., 1979).
4. Do not give the authors initials in the citations, unless you are referring to one of two authors of the same surname.
5. The author may be an organisation such as the World Bank, a Government Department or a newspaper.
6. If you cannot find the author replace the name with ‘Anon’.
7. If you cannot find the date, replace the date with ‘n.d.’, short for no date.
8. A personal communication should be entered as an author, with “pers. comm.” written in italics (e.g. Bloggs, 2014, pers. comm.).
9. Do not give the title of the publication in the citation. This should be contained within the Reference List.
10. An author cited at the end of a sentence relates to that sentence only, not the whole paragraph. The full stop should follow the citation; there should be no full stop between the citation and the sentence to which it refers.
11. You must reference the sources of figures and tables. Place the reference after the figure or table caption. Here the page number of the source should appear after a colon.
   • Figure directly copied from source: Source: Schooney et al. (1999: 78).
   • Figure modified from source (if you have changed the way the information is presented): Modified from Schooney (2003: 54).
   • Figure based on source data (if you have constructed your own map/table/diagram based on secondary data): Based on data from Schooney (2001: 25).
12. Web-based references must be cited in the same way as conventionally published material, i.e. give the author and date. DO NOT include the web address in the citation.
13. Use quotation marks to denote quotations and cite the reference at the end of the quote, e.g. “Chemical weathering is an unseen enemy of buildings” (Schooney, 1994: 5). For a direct quote, the page number MUST be written in the text reference.

14. You may find when writing an essay that much of the material comes from one or two sources and it is tedious for both you and the reader if you constantly cite the source throughout the essay. One way round this is to make a general statement in the introduction of the essay or the first sentence of a paragraph with information sourced from one author.

E.g. Plate tectonics is now a well-established theory and many texts deal with this important topic. One such work is that by Skitter and Ponting (2002), which provides most of the background to the following discussion.

Thereafter you need only refer to Skitter and Ponting when making a specific assertion:

E.g. According to Skitter and Ponting (2000: 23-24), the Yangzte, Amazon and Ganges-Brahmaputra rivers deliver 20% of the water and dissolved matter entering the oceans. This citation tells us that this information can be found on pages 23 and 24.

An example using the citation rules outlined above is provided below:
To help you to understand this process, citations within this paragraph relating to:
• specific assertions are underlined;
• the thesis/findings/conclusion of the entire paper/article/book are in italics;
• a direct quotation is in bold.

According to Schooney (1998), chemical weathering is the fundamental factor that accounts for 56% of the building damage in Schoonville. This claim has been disputed by others; for example Jackson (2000) points out that although chemical weathering is a factor, it is the lack of application of rigorous building codes that is at the root of the problem. This claim was subsequently tested by Mdaweni and Jackson (2001), who compared damage to buildings of the same vintage, but built by different contractors in Schoonville. They found that buildings constructed by one contractor showed a much higher incidence of damage compared to those built by other contractors, regardless of the size and location of the building in the town (Mdaweni and Jackson, 2001). They concluded that “building practice and proper adherence to building codes are fundamental factors influencing weathering damage to buildings” (Mdaweni and Jackson, 2001: 45). A study by Booysen et al. (2002) in the neighbouring town of Skalkberg, which involved the same contractors, yielded similar results.

Compiling a reference list
What is a Reference List? A Reference List is a list of all the sources of information that are cited within the text of one’s work. It gives the necessary detail and information about the source to support its claims and to enable one to access the source if necessary.

Different disciplines follow different styles of referencing. For Geography assignments (an essay, report or other written document) you should follow a modified Harvard referencing style that is used in the South African Geographical Journal. The system we use is explained in detail below.
Further information on citing systems can be found on Rhodes University’s Library website:
http://ru.za.libguides.com/Citing
Rules for compiling a reference list
1. A reference list is not a bibliography and must only contain material cited in the text.
2. Complete information should be provided for every reference.
3. Organise the references alphabetically (according to the first author’s surname) without numbering.
4. The initials of authors/editors must appear behind the surname(s). When the author is unknown use the convention ‘Anon’.
5. If there are references to different texts by the same author in the same year label them (a) and (b) in the reference list as done in citations. E.g. Skinner (2000a) and Skinner (2000b)
6. For multiple references by the same author list them by date (i.e. in chronological order).
7. Where an author has published different articles with different co-authors, list the reference alphabetically by the surname of the first author.
8. Do not use ‘et al.’ in the reference list. List all authors’ names fully.
9. Punctuate all references exactly as shown in the examples.
10. Leave a blank line between references.

Referencing style for conventional published sources
Researchers publish the results of their work in a variety of forms - reports, books, periodicals and journals and on the World Wide Web. The way in which the source is cited in the reference list depends on the form of publication as indicated below. The references in the reference list should have a “hanging indent”.

i. Article in a Journal
   - Do not abbreviate titles of journals
   - The only words capitalised in the titles of journal articles are proper nouns.
   - Italicise the name of the journal, not the title of the article.

ii. Two Articles Published in One Year by the Same Author
   Distinguish publications by adding ‘a’, ‘b’ etc. to the year (e.g. 1993a, 1993b). Deane, R. 1993a. Wind patterns and energy. Science, 123:34-49.

iii. Reference to a Complete Book
   Author/Editor(s). Year. Title (edition). City of publication: Publisher.

iv. Reference to an Edited Book Containing Chapters by Different Authors
   Editor(s). (ed./eds). Year. Title. City of Publication: Publishers.

v. Reference to a Chapter in an Edited Book
• Italicise the name of the book, not the title of the chapter.


vi. Reference to a Thesis or Dissertation
Author. Year. Title. City of publication: Name of organisation. (type of source) [format of source other than print].

vii. Reference to a Government Publication

viii. Reference to an Unpublished Report

ix. Reference to a Personal Communications
Name. Year. Authority’s standing/profession and affiliation. Personal Communication. Date of communication.

x. Reference to an Internet Source
Author. Date (last updated). Title of page/website. [Online]. Available: Full URL/Internet address. [date of access].

xi. Journal Article Downloaded from the Internet
NB. Journal articles accessed through the internet should be referenced in the same way as journal articles from the hard copy journal, UNLESS IT IS AN ONLINE JOURNAL. You can include the DOI (Digital Object Identifier) number to inform your reader where they can access the journal article online.

xii. Online Journal

xiii. Reference to a Map
Author(s) or Organisation/Department. Year. Title. City: Organisation/Department.

Note: To find an article using a DOI (Digital Object Identifier)
When you see a DOI reference to an article on the internet, most of the times you can just click on the DOI in order to access the article (provided you have the needed access rights to the site where the article is located). In case you see a DOI in a print document or when the on-line DOI is not clickable, and you want to access the article, please do the following:
1. Copy the DOI of the document you want to open (e.g.: doi:10.2991/jnmp.2006.13.4.1).
2. Go to: http://dx.doi.org/ Enter the entire DOI in the text box provided, and then click Go.
3. The document that matches the DOI citation will display in your browser window.

Example of a correctly-compiled reference list


[09/01/2014].
APPENDICES

RHODES UNIVERSITY – INSTITUTE FOR WATER RESEARCH
ASSIGNMENT COVER SHEET

Name : 

Student Number : 

Module : 

Lecturer : 

Assignment title : 

Due date : 

PLAGIARISM DECLARATION

- I know that plagiarism means taking and using the ideas, writings, works or inventions of another as if they were one’s own. I know that plagiarism not only includes verbatim copying, but also the extensive use of another person’s ideas without proper acknowledgement (which includes the proper use of quotation marks). I know that plagiarism covers this sort of use of material found in textual sources and from the Internet.

- I acknowledge and understand that plagiarism is wrong.

- I understand that my research must be accurately referenced. I have followed the rules and conventions concerning referencing, citation and the use of quotations as set out in the Departmental Guide.

- This assignment is my own work, or my group’s own unique group assignment. I acknowledge that copying someone else’s assignment, or part of it, is wrong, and that submitting identical work to others constitutes a form of plagiarism.

- I have not allowed, nor will I in the future allow, anyone to copy my work with the intention of passing it off as their own work.

Signed ..............................................

Date ..................................................
RHODES UNIVERSITY – INSTITUTE FOR WATER RESEARCH
REQUEST FOR AN EXTENSION ON DUE DATE TO HAND IN AN ASSIGNMENT

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Number</td>
<td></td>
</tr>
<tr>
<td>Mobile Number</td>
<td></td>
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<tr>
<td>Module</td>
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<tr>
<td>Assignment</td>
<td></td>
</tr>
<tr>
<td>Lecturer In Charge</td>
<td></td>
</tr>
<tr>
<td>Due Date</td>
<td></td>
</tr>
<tr>
<td>Reason For Requesting Extension</td>
<td>(Attach Relevant Documentation)</td>
</tr>
<tr>
<td>Comment By Lecturer In Charge</td>
<td></td>
</tr>
<tr>
<td>Comment By Course Coordinator/Director</td>
<td></td>
</tr>
</tbody>
</table>

**Extension Not Approved/ Extension Approved (Delete As Appropriate)**

<table>
<thead>
<tr>
<th>New Due Date</th>
<th>Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signed: Student</td>
<td>Date:</td>
</tr>
<tr>
<td>Signed: Lecturer In Charge</td>
<td>Date:</td>
</tr>
<tr>
<td>Signed: Course Coordinator</td>
<td>Date:</td>
</tr>
</tbody>
</table>
LEAVE OF ABSENCE APPLICATION FORM

I hereby offer reason(s) for not fulfilling course requirements i.e. lectures, practicals, tutorials, essays and assignments etc., and make application for a 'Leave of Absence'

Name: ___________________________ Student Number: ___________________________

Date absent from: ______________ AM ______________ PM To: ______________ AM ______________ PM

Type of LOA Requested:

- Medical
- Psychological
- Traditional or Religious
- Health or Cultural Ceremony
- Extended Medical
- Extended Psychological
- Extended Traditional or Religious
- Extended Health or Cultural Ceremony
- Compassionate
- Sport
- Cultural
- Leadership

Reason for Absence: Attach relevant supporting documentation to the LOA form

Details of course work missed:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Lecture</th>
<th>Tutorial</th>
<th>Practical</th>
<th>Field Trip</th>
<th>Essay/assignment</th>
<th>Test</th>
<th>Other (give details below)</th>
</tr>
</thead>
</table>

Other details:

Address at Rhodes: ___________________________

Signature of student: __________________________

Application SUPPORTED by:

Name: ___________________________ Phone number: ___________________________

Designation: ___________________________ Email: ___________________________

Signature: ___________________________

For Head of Department

Leave of absence is hereby GRANTED ☐ NOT GRANTED ☐

Signature: ___________________________ Date: ___________________________

Notes

1. A separate application should be submitted by the student directly to each department.
2. This form, duly completed, and SUPPORTED by the signature of the relevant authority as indicated in the Policy for Leave of Absence (LOA) Applications by Students (see back of form for details), should be presented to the Head of Department (HoD) whenever prescribed course requirements have been or are going to be missed.
3. If the HoD is satisfied with the explanation given, they will countersign that the LOA has been granted. The tear-off slip must be retained by the student while the form will be retained in the department (whether the LOA is granted or not). Without a counter-signature from the HoD the form does NOT grant a LOA. The granting of a LOA remains the prerogative of the HoD, and students are advised to familiarise themselves with Departmental regulations, specifically regarding penalties for not handing in assignments on the due date, not earning marks towards a class record, not writing tests or the June examinations, and not attending the required minimum number of tutorials, lectures or practicals.
4. Work missed through absence at any time, for any reason, is the responsibility of the individual student. Formal LOA does not remove this responsibility.
5. Supporting documentation e.g. medical certificate should be attached if applicable.
Student name: ____________________________

Leave of absence is hereby ____________________________
GRANTED  □  NOT GRANTED  □

Dates: From ____________________________ to ____________________________

Conditions (if any) are stated on the reverse side of this advice.

Signature of HoD: ____________________________ Date: ____________

It is the responsibility of the student to retain this advice as PROOF of LOA being granted.

SUPPORTING DOCUMENTATION

*Please note that documents submitted are tested for authenticity and where fraud is suspected, they are referred to the University Prosecutor for further action*

<table>
<thead>
<tr>
<th>Type of LOA Requested:</th>
<th>Relevant Supporting Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>Any qualified health care practitioner, including Health Care Centre staff</td>
</tr>
<tr>
<td></td>
<td>Medical Doctor or Specialist only. Must be confirmed by the relevant academic Dean</td>
</tr>
<tr>
<td>Extended Medical</td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>Qualified psychologist or psychiatrist</td>
</tr>
<tr>
<td></td>
<td>Qualified psychologist or psychiatrist. Must be confirmed by the Dean of Students</td>
</tr>
<tr>
<td>Extended Psychological</td>
<td></td>
</tr>
<tr>
<td>Traditional or Religious</td>
<td>Recognised religious leader (minister, priest, imam, rabbi etc.) or House Warden.</td>
</tr>
<tr>
<td>Extended Traditional or Religious</td>
<td>Must be confirmed by the relevant academic Dean</td>
</tr>
<tr>
<td>Health or Cultural Ceremony</td>
<td>Recognised religious leader (minister, priest, imam, sangoma, rabbi etc.) health care practitioner, ward or local government councillor or justice of the peace or House Warden.</td>
</tr>
<tr>
<td>Extended Health or Cultural Ceremony</td>
<td>Must be confirmed by the relevant academic Dean</td>
</tr>
<tr>
<td>Compassionate</td>
<td>Death certificate of deceased relative or letter from treating physician</td>
</tr>
<tr>
<td>Sport</td>
<td>Team captain or coach AND relevant sports officer</td>
</tr>
<tr>
<td>Cultural</td>
<td>Society Chairperson AND Dean of Students</td>
</tr>
<tr>
<td>Student Leadership</td>
<td>Chair of relevant University Committee AND Dean of Students</td>
</tr>
</tbody>
</table>