

2017 MASTER'S PROGRAMME in Sustainable Development

PROSPECTUS 2017

SPECIALISATIONS:

Sustainable Development
Sustainable Development Planning
Sustainable Food Systems
Renewable and Sustainable Energy
Political Economy of Development
Sustainable Enterprise

A multi-disciplinary global programme in the planning, management and practice of sustainable development aimed at early and mid-career specialists and generalist professionals in the public, private and non-profit sectors

DELIVERED BY THE SCHOOL OF PUBLIC LEADERSHIP IN PARTNERSHIP WITH

- Sustainability Institute
- Centre for Renewable and Sustainable Energy Studies
- Stellenbosch Centre for Complex Systems in Transition
- Stellenbosch University

Learning for Sustainable African Futures



TABLE OF CONTENTS

Directions to the Sustainability Institute	1
Overview: Master's Programme in Sustainable Development	2
Aims	2
Composition of programme	2
Important	3
Distance Education	3
Teaching Methodology.....	3
Language of Instruction	4
Examination Requirements and Evaluation.....	4
Dates and deadlines	4
Postgraduate Diploma in Sustainable Development (NQF Level 8).....	5
Entry Requirements	5
Application	5
Selection	5
Structure	6
Module Completion	6
Curriculum.....	7
Sustainable Development Stream	7
Sustainable Development Planning Stream	7
Sustainable Food Systems Stream.....	8
Renewable and Sustainable Energy Stream	8
Political Economy of Development Stream	9
Sustainable Enterprise Stream	10
Fee Structure.....	10
MPhil in Sustainable Development (NQF Level 9)	11
Entry Requirements	11
Structure & Curriculum	11
Fee Structure.....	13
General Information.....	14
Payment Options	14
Bursaries and Scholarships	14
International Students	14
Accommodation Options	14
Commuting Options	14
Application Procedure.....	15
Contact the correct division for enquiries relating to your application.....	16
Useful contact information	18
Appendix A.....	19
Module Dates and deadlines 2017*	31

DIRECTIONS TO THE SUSTAINABILITY INSTITUTE (LYNEDOCH CAMPUS)

The **Sustainability Institute** is situated diagonally opposite Lynedoch train station at the intersection of the R310 (Baden Powell Drive) and Annandale Road, Lynedoch.

Since the recent, permanent closure of all railway level crossings on the R310 the Sustainability Institute can no longer be accessed via this intersection at the Zetler's Garage/Lynedoch train station entry point.

Access is now ONLY possible via Vlottenburg Road or Vlaeberg Road off either the R310 or M12 motorways.

This is a link to the Sustainability Institute on Google Maps:

<https://www.google.co.za/maps/dir/-33.9828256,18.7683656/The+Sustainability+Institute,+Stellenbosch,+7603/@-33.982541,18.6948945,12z/data=!4m8!4m7!1m0!1m5!1m1!1s0x1dcc4cf1015a2725:0x43caa201822c1fc7!2m2!1d18.768713!2d-33.982563>

The GPS coordinates are:

- Latitude: 33°98' 25.63"
- Longitude: 18°76' 87.13"

Approaching the Sustainability Institute from the N2:

- Take the Baden Powell Drive (R310) off-ramp (Exit 33) towards Stellenbosch.
- Proceed along the R310 for 11.5 kilometres until you reach the first set of traffic lights.
- The sign at this intersection will say Vlaeberg Road (M12) Kuils River.
- Turn left onto Vlaeberg Road at these traffic lights and follow the bridge over the railway line through a wide right bend.
- Watch out for the Sustainability Institute sign shortly thereafter warning you to turn ahead.
- At the T-junction almost immediately thereafter, turn right at the Lynedoch sign and follow the tarred service road for 1.8km (with the railway line on your right) until you reach the Sustainability Institute on your left.

Approaching the Sustainability Institute from Stellenbosch:

- Take the R310 Adam Tas Road out of Stellenbosch.
- 2.9 kilometres after passing Distell and the Oude Libertas Amphitheatre take a left at the next set of traffic lights onto Baden Powell Drive.
- Follow Baden Powell Drive for 2.2 kilometres and watch out for the Vlottenburg Sign.
- Turn right into Vlottenburg Road and watch out for the Sustainability Institute sign.
- At the T-junction almost immediately thereafter, turn left at the Lynedoch sign and follow the tarred service road for 6.5km (with the railway line on your left) until you reach Lynedoch station on your left and the entrance to the Sustainability Institute thereafter on your right.

Approaching the Sustainability Institute from the R44/Annandale Road:

- Follow the Annandale Road from the R44 in the direction of Lynedoch.
- The Annandale Road will take you to the Baden Powell Drive (R310) intersection.
- Turn left into Baden Powell Drive and follow this road for 1.8km to the first set of traffic lights.
- The sign at this intersection will say Vlaeberg Road (M12) Kuils River.
- Turn right into Vlaeberg Road at these traffic lights and follow the bridge over the railway line through a wide right bend.
- Watch out for the Sustainability Institute sign shortly thereafter warning you to turn ahead.
- At the T-junction almost immediately thereafter, turn right at the Lynedoch sign and follow the tarred service road for 1.8km (with the railway line on your right) until you reach the Sustainability Institute on your left.

Approaching the Sustainability Institute from Kuils River:

- Take the Stellenbosch Arterial (M12) from the Van Riebeeck Road intersection in Kuils River.
- Follow the Stellenbosch Arterial for 7km past the Saxenburg Wine Farm until you reach the Vlaeberg Road T-junction on your right as you are descending into the Stellenbosch valley.
- Turn right onto Vlaeberg Road and continue past Onze Rust for 3.5km looking out for the Sustainability Institute sign on your left.
- At the T-junction almost immediately thereafter, turn left at the Lynedoch sign and follow the tarred service road for 1.8km (with the railway line on your right) until you reach the Sustainability Institute on your left.

OVERVIEW: MASTER'S PROGRAMME IN SUSTAINABLE DEVELOPMENT

AIMS

This structured transdisciplinary programme, with six available specialisations (streams), has been jointly designed and developed by the School of Public Leadership (www.schoolofpublicleadership.co.za) in collaboration with the Sustainability Institute (www.sustainabilityinstitute.net) and Stellenbosch Centre for Complex Systems in Transition (CST).

The main aim of this programme is to provide participants with an understanding and practical experience of the wide ranging contextual, conceptual and thematic issues involved in the planning, management and practice of sustainable development throughout the world. As the various global social and environmental crises deepen, a new generation is rising up into leadership positions in the public, private and non-profit sectors that are required to possess a broad transdisciplinary understanding of the various dimensions of these crises and related solutions. This integrated Master's Programme (which comprises two connected formal degrees at the Honours and Masters level) aims to equip these people with the knowledge, experience and skills they will need if they are to grow and develop within this new field of career development. This will be done by combining the following:

- a Postgraduate Diploma in Sustainable Development (PGDip) comprising a set of 8 core modules that will be taught from an international perspective by leading experts in their fields, followed by
- an MPhil in Sustainable Development comprising either an Integrated Thesis (with optional variations) plus two or four electives;
- a teaching methodology that combines formal teaching, case methods, facilitated discussion learning, and self-managed learning in a way that allows each participant to shape their own study focus;
- a residential living and learning context that is rooted in a functioning sustainably built and operated community that provides participants with opportunities for direct experiences of sustainable development work in the farming, construction, landscape, infrastructure and educational fields that will complement their respective learning programmes.

COMPOSITION OF PROGRAMME

Postgraduate Diploma (Sustainable Development) (one year full-time* or two years part-time**)

A 120 credit Honours-level qualification (NQF level 8) comprising a compulsory Orientation and eight modules that will be selected from the modules that are available. PGDip graduates will have an automatic right to apply for registration for the MPhil if they obtain an average of at least 65% for each of the 8 modules.

- *Full-time: This means a student has to complete all 8 modules within 1 year.
- **Part-time: This means that a student may complete 8 modules over two-years (e.g. 4 modules in the first year of registration and 4 modules in the second year of registration).
- **NB:** Full-time and part-time students must attend the full week (Monday–Saturday) of classes at the Sustainability Institute in Lynedoch, for each of the modules they choose. Anyone who misses a half day or more for any reason will be asked to leave the course.

The PGDip is ideal for students who are only interested in the modules and have no interest in research. Students who complete the modules but want to complete the research component a few years later can exit with an Honours-level qualification (i.e. PGDip) and then register for the MPhil whenever it suits them.

MPhil (Sustainable Development) (one year full-time or two years part-time)

A 180 credit Master's level qualification (NQF level 9) which comprises the following:

- A research component (an academic thesis or various options including a Project Proposal or Academic Journal articles – more details below);
- Research Methodology Course (5 days) (which takes place towards the end of the previous year) plus participation throughout the year in web-based training exercises.
- Two or four electives. Students who receive/d a bursary from the Centre for Renewable & Sustainable Energy may be required to choose energy related electives.

The MPhil (Sustainable Development) programme is defined as a research-based MPhil and is more highly rated in the national higher education system than a two year course work MPhil. Students thus graduate with a highly rated research-based Master's degree from the University of Stellenbosch which is one of South Africa's leading research Universities.

IMPORTANT

All students (no matter what prior qualifications they may have at any level or with any other institution) are required to complete the PGDip (Sustainable Development) before starting the MPhil (Sustainable Development). Under no circumstances will any student be allowed direct entry into the MPhil (Sustainable Development) without having completed the PGDip (Sustainable Development); and no other degree will be recognised as an entry requirement to the MPhil. The reason for this seemingly harsh policy is because the course work curriculum of the PGDip equips students with a strong academic foundation of knowledge and skills to tackle the thesis-based MPhil with confidence and with the best chance of success.

DISTANCE EDUCATION

- The PGDip (Sustainable Development) is not offered as distance learning. Students must attend block sessions for each of the modules for which they are registered (see below) on Stellenbosch University's Lynedoch Campus, which is situated at Lynedoch, 12 km outside Stellenbosch, on the premises of the Sustainability Institute.
- The MPhil (Sustainable Development) has two events which are compulsory to attend, i.e. (i) Research Workshop prior to registration (in November of the year prior to registration); and (ii) MPhil Colloquium at the end of their studies (in November prior to graduation). For the remainder of the time students are not required to be on the Lynedoch campus unless they are registered for a module. They will each have a supervisor and it is up to each student to ensure they get the supervision they require.

TEACHING METHODOLOGY

Approach and Methods of Tuition

All classes are presented at the Sustainability Institute, Lynedoch. Students attend during the time period allocated for each of their registered modules (refer to dates list) and are not required to be on campus during the time between their modules.

During formal block sessions, an interactive teaching method will be used that will consist of formal lecturing, facilitated discussion learning, case method learning (in small group discussion and in plenary) and various kinds of structured group work. The main aim of this teaching approach is to ensure that members of the group learn from each other and establish strong working relationships. The facilitated discussion learning and case learning is designed to ensure that participants complement reading and listening with experiential learning that builds the capacity for sound judgement and practical wisdom. In addition, course participants will be required to undertake certain daily practical tasks related to the general upkeep of the Institute and the development of the surrounding projects. These shared experiences of practical work will feed directly into the overall learning experience during the block sessions.

The normal teaching day (Tuesdays to Fridays) will start at 08:15 with an hour of community work, followed by a formal teaching session until lunch time. Mondays will start at 08:30. Between 14:00 and 16:00, group work takes place, normally in preparation for group presentations on Saturday morning. There is normally a late afternoon session from 16:00 to 17:15. Overnight reading preparation is expected. All these components of the day, including the community work session, are accredited elements of the course and therefore attendance is mandatory.

Between block sessions, course participants who return to their places of work will need to work largely on their own and connected to others via email and SUNLearn, our web-based learning portal, where this is practically possible. However, others may choose to stay on at the Institute where they may work in groups or work with Institute staff on various projects. In both cases, however, it should be assumed that approximately 100 hours of self-managed work time will be needed between blocks for reading and writing up of assignments.

LANGUAGE OF INSTRUCTION

The language of instruction during tuition, discussions and presentations will be English.

EXAMINATION REQUIREMENTS AND EVALUATION

This structured study programme consists of separate modules. Written theoretical, practical and oral examinations may be required in the respective modules. The final mark for each module will be based on an assessment of classroom performance and written work.

DATES AND DEADLINES

PGDip (Sustainable Development) students register either for 8 modules (full-time) or 4 modules (part-time) for any one particular year. It is compulsory for all new students to attend *Orientation and Sustainable Development*. Thereafter students are free to return to their place of work; i.e. leave the campus, and to return for the next module for which they are registered. Students choose modules according to the Stream for which they are registered. The dates during which modules will be presented, are listed on the last page of this document.

It is compulsory for MPhil (Sustainable Development) students to attend the Research Workshop in November before embarking on their studies.

Excluding Research Methodology and Research Dissemination, which have a slightly different assessment method, all modules have a deliverable in the form of an individual assignment of approximately 3500-5000 words for each assignment, to be submitted 6 weeks after the last day of class.

POSTGRADUATE DIPLOMA IN SUSTAINABLE DEVELOPMENT (NQF LEVEL 8)

ENTRY REQUIREMENTS

Candidates may apply to enter this taught PGDip Programme if they are in possession of one of the following qualifications:

- Any Bachelor's or BTech degree or a relevant four-year diploma with a 60% pass mark in one of the following major subjects: Town and Regional Planning, Housing, Geography and Environmental Studies, Social Sciences (sociology, politics, etc), Psychology, Economics, Public and Development Management, Geology, Botany, Zoology, Forestry, Ecology/Nature Conservation, Mathematics, Statistics, Agricultural Economics, Transport Economics, Forestry, Civil Engineering, Architecture, Land Surveying or any other degree approved by the Programme Committee. Relevant work experience will be considered for admission.
- Any three year programme of studies with at least five years relevant work experience and conformity with the University's RPL (Recognition of Prior Learning) policy. According to this policy, the equivalent of 120 credits at NQF level 7 (Bachelor's degree) must be acquired in one or more of the following ways, subject to the decision of the Programme Committee, which consists of the Director of the School of Public Leadership, the Programme Coordinator and other relevant persons:
 - Completion with a total 65% mark of at least three modules from the PGDip curriculum
 - Recognition of all the professional short , in-service training courses and completed subjects for another degree or diploma programme
 - Submission of a learning portfolio, with copies of written work
 - Passing of an entrance examination if so required by the Programme Coordinator

If a candidate has obtained a Merit Certificate for one or more individual modules that were completed for non-degree purposes, the candidate may apply for the certificate(s) to be converted into credits towards the degree. The Programme Coordinator has sole discretion over whether or not to grant this request. S/he will take into account the performance of the candidate and the time that may have lapsed between the completion of the Certificate and the application to register for the degree.

APPLICATION

- Closing date for PGDip application: 31 August of the year prior to the year during which the programme commences. (Please note that all the supporting documents of your application must have reached Stellenbosch University by this date; i.e. you need to do the actual online application at least two weeks prior to 31 August.)
- A detailed explanation of the application procedure can be found elsewhere in this Prospectus.
- Any other entry requirements for postgraduate study prescribed by the University of Stellenbosch in its various public documents will apply.

SELECTION

- Selection will take place in October/November after which successful candidates will be informed. Selected PGDip students will be eligible to pay a non-refundable deposit fee of R2000 by 15 November of the year prior to the year in which they are taking up studies to confirm and secure their position on the programme. This amount will be deducted from the registration fee payable in January of the year in which you are taking up studies. Failure to adhere to this will forfeit your position on this programme. If you do not arrive at registration for whatever reason or if you decide not to participate in the programme for whatever reason, this deposit fee will also be forfeited.
- The **criteria for selection** include academic excellence, work experience, an appropriate mix of disciplines, career commitment in the broad field of sustainable development and a well-written motivation.

STRUCTURE

The PGDip (Sustainable Development) has a foundation module (Sustainable Development) that all new students must complete, plus six clusters of modules known as Specialisations. These Specialisations are as follows:

- Sustainable Development: Foundation Module + 7 modules selected from any of the specialisations;
- Sustainable Development Planning: Foundation Module + 5 Core Modules from the DP specialisation + 2 modules selected from any of the specialisations – in this option, the actual specialisation is determined by the student by way of the combination s/he selects to suit his/her own specific interests and future plans;
- Renewable & Sustainable Energy: Foundation Module + 3 Core Modules from the R&SE specialisation (some which are delivered by the Engineering Faculty) + 3 modules from any of the specialisations;
- Sustainable Food Systems: Foundation Module + 4 Core Modules from the SFS specialisation + 3 modules selected from any of the specialisations;
- Political Economy of Development: Foundation Module + 3 Core Modules from the PED specialisation + 4 modules selected from any of the specialisations;
- Sustainable Enterprise: Foundation Module + 5 Core Modules from the SE specialisation + 2 modules selected from any of the specialisations.

The programme is presented formally during the scheduled contact sessions, with assignments completed during the interim periods between blocks. The Orientation, which commences with registration, is compulsory for all new PGDip students. Students who do not participate in all three days of the Orientation will not be permitted to register for any module.

The Renewable and Sustainable Energy modules (delivered in partnership with the Centre for Renewable and Sustainable Energy Studies) are Core Modules for the RSE programme option but can be selected by any student on condition the rules for each specialisation/stream specified below are adhered to.

Each module will as far as possible be delivered at fixed times (refer to dates list at back of prospectus). This means that a course participant can mix and match his/her participation to suit his/her interests and practical circumstances. For example, it will be possible for someone to complete the entire course work programme for the PGDip in one year (full-time) by attending eight core modules and completing the assignments **or** over 2 years (part-time) by attending 4 core modules per year and completing the assignments (or, for that matter, 5 modules one year and 3 modules the other year). **Completing the PGDip over three years will only be permitted under exceptional circumstances.**

As far as sequencing is concerned, the only course requirement is that all participants must do the Foundation Module (Sustainable Development I) before they enrol for any other module. No sequencing is applicable to any of the other sustainable development core modules (although we do make recommendations for certain combinations). This will allow for the maximum possible flexibility for course participants.

It is recommended that participants who want to enrol for all the planning core modules follow the Foundation Module: *Sustainable Development I* with the planning modules in the following order: namely first *Introduction to Planning*, then followed consecutively by *Development Planning Theory and Practice*; *Development Planning Systems, Policy and Law*; *Development Planning and Environmental Analysis*; and *Applied Economics*. However, it is not compulsory to follow this order.

For the programme to be financially viable, a minimum number of 15 participants are required for each module. The preferred class size is 30 participants, but this may expand to as much as 55 for certain modules.

Each module requires at least 150 hours of your time i.e. 50 hours class/contact time, 50 hours reading time, and 50 hours spent writing up the assignments.

MODULE COMPLETION

All candidates must attend and complete the Foundation Module: *Sustainable Development I* before proceeding to register for any other module. Candidates wanting to follow the *Development Theory and Practice* and *Development Planning Systems, Law and Policy* modules are highly recommended to only do it after completion of the *Introduction to Development Planning* module. Otherwise, candidates can structure the sequencing of their Module selections to suit their own practical circumstances and intellectual preferences. Students will be required at the start of the programme to commit to participating in certain modules at certain times. If a student changes his/her plans by deciding to register for a Module that s/he did not sign up for at the start, and if the Module s/he has applied for is full, then s/he will be put onto a waiting list. Non-attendance of modules for which students have registered will result in failure of a module. A student will then have to re-register and pay for the module in the subsequent year.

Candidates who fall into arrears with their payments for modules will not be allowed to register the following year nor will they receive their graduation certificate; and their final marks will be withheld until payment has been received.

CURRICULUM

The PGDip (Sustainable Development) curriculum comprises eight (8) Core Modules each worth fifteen (15) credits. The eight Core Modules must be selected as follows:

The Foundation Module, Sustainable Development I, and Orientation is compulsory and must be attended before participation in any of the other modules will be authorised.

SUSTAINABLE DEVELOPMENT STREAM

Students who require a general transdisciplinary understanding of global trends in sustainability thinking and sustainable development in particular are encouraged to select this stream. These students must select 8 modules from the following options as specified.

Compulsory – 1 module	Sustainable Development I
<p>Select – 7 modules from the Core Modules and Energy-related Modules</p> <p>A maximum of 2 Energy-related Modules may be selected</p> <p>It is recommended that <i>Complexity Theory & Systems Thinking</i> is completed before <i>Leadership & Environmental Ethics</i></p>	<p>Core Modules:</p> <p>Applied Economics; Biodiversity & Ecosystem Services; Comparative Studies in Regenerative Food Systems; Comparative Studies in Sustainable Living; Complexity Theory & Systems Thinking; Development Planning & Environmental Analysis; Development Planning Systems, Policy & Law; Development Theory & Practice; Ecological Design for Community Building; Economics of Sustainability Transitions; Facilitation for Sustainability Transitions; Food Security & Globalised Agriculture; Food System Transitions; Governance, Globalisation & Civil Society; Introduction to Development Planning; Leadership & Environmental Ethics; Renewable Energy Finance; Renewable Energy Policy; Sustainable Cities; Sustainable Enterprise; Systems & Technologies for Sustainable Agriculture; System Dynamics Modelling.</p> <p>Energy-related Modules:</p> <p>Renewable Energy Systems; Bio-energy; Introduction to Solar Energy</p>

SUSTAINABLE DEVELOPMENT PLANNING STREAM

Students who intend practicing in the applied disciplinary field of development planning and the allied built environment sphere in South Africa are advised to select this programme option. Students must select 8 modules from the following options as specified.

IMPORTANT NOTE:

After completion of the PGDip (Sustainable Development), students intending to eventually work as planners in SA are also advised to select the 120 credit option for the MPhil with 4 additional modules, as listed under the MPhil (Sustainable Development) degree. The research component for the MPhil will also need to have a "Sustainable Development Planning" focus.

<p>Compulsory – 6 modules</p> <p>It is recommended (though not compulsory) that students first complete <i>Introduction to Development Planning</i> before attending <i>Dev Theory & Practice</i> or <i>DP Systems, Law and Policy</i></p>	<p>Sustainable Development I; Introduction to Development Planning; Development Theory & Practice; Development Systems, Law & Policy; Development Planning & Environmental Analysis; Applied Economics</p>
---	--

<p>Select – 2 modules from the Core Modules and Energy-related Modules</p> <p>Recommended: <i>Ecological Design for Community Building; Complexity Theory & Systems Thinking; Sustainable Cities</i></p>	<p>Core Modules: Biodiversity & Ecosystem Services; Comparative Studies in Regenerative Food Systems; Comparative Studies in Sustainable Living; Complexity Theory & Systems Thinking; Ecological Design for Community Building; Economics of Sustainability Transitions; Facilitation for Sustainability Transitions; Food Security & Globalised Agriculture; Food System Transitions; Governance, Globalisation & Civil Society; Leadership & Environmental Ethics; Renewable Energy Finance; Renewable Energy Policy; Sustainable Cities; Sustainable Enterprise; Systems & Technologies for Sustainable Agriculture; System Dynamics Modelling.</p> <p>Energy-related Modules: Renewable Energy Systems; Bio-energy; Introduction to Solar Energy</p>
---	---

SUSTAINABLE FOOD SYSTEMS STREAM

Students interested in the entire food chain stretching from primary production, to the consumption of food, through to food waste are encouraged to select this option. Students must select 8 modules from the following options as specified.

<p>Compulsory – 4 modules</p>	<p>Sustainable Development I; Food Security & Globalised Agriculture; Food System Transitions; Systems & Technologies for Sustainable Agriculture</p>
<p>Select – 4 modules from the Core Modules and Energy-related Modules</p> <p>Recommended: <i>Complexity Theory & Systems Thinking and Biodiversity & Ecosystem Services</i></p> <p>A maximum of 2 Energy-related Modules may be selected</p>	<p>Core Modules: Applied Economics; Biodiversity & Ecosystem Services; Comparative Studies in Regenerative Food Systems; Comparative Studies in Sustainable Living; Complexity Theory & Systems Thinking; Development Planning & Environmental Analysis; Development Planning Systems, Policy & Law; Development Theory & Practice; Ecological Design for Community Building; Economics of Sustainability Transitions; Facilitation for Sustainability Transitions; Governance, Globalisation & Civil Society; Introduction to Development Planning; Leadership & Environmental Ethics; Renewable Energy Finance; Renewable Energy Policy; Sustainable Cities; Sustainable Enterprise; System Dynamics Modelling.</p> <p>Energy-related Modules: Renewable Energy Systems; Bio-energy; Introduction to Solar Energy</p>

RENEWABLE AND SUSTAINABLE ENERGY STREAM

This specialisation is offered in partnership with the Centre for Renewable and Sustainable Energy Studies at Stellenbosch University (www.sun.ac.za/creses). This Centre is a joint initiative by four Faculties of the University plus the Sustainability Institute, and the South African National Energy Research Institute (which is a subsidiary of the Government's Central Energy Fund). The teaching programme is jointly managed by the Department of Mechanical Engineering, School of Public Leadership and the Sustainability Institute. All modules will take place at the Sustainability Institute or at the Engineering Faculty in the event that access to laboratories or experimental units is required. It is important to note that the Foundation Module plus the four modules from the Renewable and Sustainable Energy Specialisation (see below) are also the component modules of the Master's in Engineering specialising in Renewable and Sustainable Energy delivered by the Department of Mechanical Engineering. This means that students who enrol for the Renewable and Sustainable Energy Specialisation in the PGDip/MPhil programme will be studying together with engineering students registered for the MEng degree. This will create a challenging learning environment that will prepare people for working across disciplines which is what will be required for those who pursue careers in the sustainable energy field. After completing the PGDip the research component for the MPhil will need to have a renewable and sustainable energy focus. Students must select 8 modules from the following options as specified.

Compulsory – 4 modules	Sustainable Development I; Renewable Energy Finance; Renewable Energy Policy; Renewable Energy Systems
<p>Select – 3 modules from the Core Modules and Energy-related Modules</p> <p>The normal combination for the Renewable and Sustainable Energy programme is the 5 Compulsory Modules, 1 or 2 Energy-related Modules plus 1 or 2 modules selected from the list of Core Modules</p> <p>Recommended: <i>Complexity Theory & Systems Thinking</i> <i>System Dynamics Modelling</i></p>	<p>Core Modules: Applied Economics; Biodiversity & Ecosystem Services; Comparative Studies in Regenerative Food Systems; Comparative Studies in Sustainable Living; Complexity Theory & Systems Thinking; Development Planning & Environmental Analysis; Development Planning Systems, Policy & Law; Development Theory & Practice; Ecological Design for Community Building; Economics of Sustainability Transitions; Facilitation for Sustainability Transitions; Food Security & Globalised Agriculture; Food System Transitions; Governance, Globalisation & Civil Society; Introduction to Development Planning; Leadership & Environmental Ethics; Sustainable Cities; Sustainable Enterprise; Systems & Technologies for Sustainable Agriculture; System Dynamics Modelling.</p> <p>Energy-related Modules: Bio-energy; Introduction to Solar Energy</p>

POLITICAL ECONOMY OF DEVELOPMENT STREAM

The establishment of the National Planning Commission (NPC) and our research on emerging trends across a number of rapidly growing developing countries point to the need for a field of study that serves students interested in the relationship between economic growth, state-driven economic planning processes and sustainability. Students must select 8 modules from the following options as specified.

Compulsory – 4 modules	Sustainable Development I; Applied Economics; Development Theory & Practice; Governance, Globalisation & Civil Society
<p>Select – 4 modules from the Core Modules and Energy-related Modules</p> <p>Recommended: <i>Complexity Theory & Systems Thinking</i></p>	<p>Core Modules: Biodiversity & Ecosystem Services; Comparative Studies in Regenerative Food Systems; Comparative Studies in Sustainable Living; Complexity Theory & Systems Thinking; Development Planning & Environmental Analysis; Development Planning Systems, Policy & Law; Ecological Design for Community Building; Economics of Sustainability Transitions; Facilitation for Sustainability Transitions; Food Security & Globalised Agriculture; Food System Transitions; Introduction to Development Planning; Leadership & Environmental Ethics; Renewable Energy Finance; Renewable Energy Policy; Sustainable Cities; Sustainable Enterprise; Systems & Technologies for Sustainable Agriculture; System Dynamics Modelling.</p> <p>Energy-related Modules: Renewable Energy Systems; Bio-energy; Introduction to Solar Energy</p>

SUSTAINABLE ENTERPRISE STREAM

This stream is primarily geared towards students with entrepreneurial ambitions who have sustainable/social enterprise ideas that they would like to explore through a master's programme. This stream will also be relevant to students interested in the political economy, how we can transition to a new economy and what that new economy may look like. Students selecting this stream for their PGD year should consider going straight into the research component of the programme in the second year in which they will intensively research their enterprise ideas through experiential, practical, participatory and transdisciplinary research methods.

Compulsory – 6 modules	Sustainable Development I; Complexity Theory & Systems Thinking; Facilitation for Sustainability Transitions; Governance, Globalisation & Civil Society; Leadership & Environmental Ethics; Sustainable Enterprise.
Select – 2 modules from the Core Modules and Energy-related Modules	<p>Core Modules: Applied Economics; Biodiversity & Ecosystem Services; Comparative Studies in Regenerative Food Systems; Comparative Studies in Sustainable Living; Development Planning & Environmental Analysis; Development Planning Systems, Policy & Law; Development Theory & Practice; Ecological Design for Community Building; Economics of Sustainability Transitions; Food Security & Globalised Agriculture; Food System Transitions; Introduction to Development Planning; Renewable Energy Finance; Renewable Energy Policy; Sustainable Cities; Systems & Technologies for Sustainable Agriculture; System Dynamics Modelling.</p> <p>Energy-related Modules: Bio-energy; Introduction to Solar Energy; Renewable Energy Systems.</p>

FEE STRUCTURE

Deposit

Students who have been accepted on the programme pay a non-refundable deposit of R2000.00 by 18 November. This amount will be deducted from tuition fees.

Registration fee

The registration fee for 2017 will be R8280.00. Deducting the R2000.00 deposit, this means that R6280.00 is payable by 23 January 2017. This is the first instalment on tuition fees.

Course fees (all prescribed learning material is included in this fee)

R5006.00 per module (School of Public Leadership) (fees for modules offered by the Dept. of Engineering may be higher/lower than those offered by the School of Public Leadership)

- Full-time study (all eight modules in 2016): $R5006 \times 8 = R40048.00$
- Part-time study (four modules per year over two years):
2017: $R5006 \times 4 = R20024.00$
2018: $R5400 \times 4 = R21600.00$
- *These course fees are provisional amounts for budgeting purposes only and not binding on Stellenbosch University or any of its employees/representatives. Accommodation and meals are not included in the course fees.*

International fees

All international students who are in South Africa on a study permit pay the following additional fees which may increase in 2017:

- **SADC students including Namibian:** International registration fee (R3170.00) + service fee (R5900.00)
- **Non-SADC students:** International registration fee (R6070.00) + service fee (R5900.00)

Please refer to <http://www0.sun.ac.za/pgstudies/fees.html> for more information.

Fees payable by registration date:

- South African students are required to pay the registration fee (first instalment on class fees) by 23 January 2017. The deposit amount (R2000.00) will be deducted from the registration fee.
- International students are required to pay all academic fees, international registration fees and service fees upfront before registration. The deposit amount (R2000.00) will be deducted from these fees.

Students will be charged for (i) modules that they repeat; (ii) additional modules over and above the 8 core modules; and (iii) any additional fees that their electives may entail.

The University, as represented by the duly authorised decision-making body, reserves the right to amend all fees payable to the University. As a result, the above quoted fees may change by the time that registration takes place in January 2017. The School of Public Leadership and the staff associated with the management of this programme cannot be held accountable if for any reason the above quoted fees are changed by a duly authorised University decision-making body.

MPHIL IN SUSTAINABLE DEVELOPMENT (NQF LEVEL 9)

ENTRY REQUIREMENTS

Application and selection

Candidates may submit a written application to enter this Programme if they comply with the following:

- A PGDip in Sustainable Development qualification or have passed 8 core modules from the above mentioned PGDip programme, but have not yet graduated.
- Preference will be given to applicants who have obtained an average of 65% or higher for each of the 8 modules of the PGDip; **AND**
- A completed Research Concept Note and attendance of the compulsory Research Workshop.
- Closing date for MPhil application: 30 September of the year prior to the year during which the programme commences.
- A detailed explanation of the application procedure can be found elsewhere in this document.
- Any other entry requirements for postgraduate study prescribed by the University of Stellenbosch in its various public documents will apply.

STRUCTURE & CURRICULUM

After completing the eight Core Modules and graduating with a PGDip (Sustainable Development) qualification, the student must apply to register for the MPhil (Sustainable Development), and also submit a research concept note. Registration will only be possible after attending the Research Workshop in November and if an adequate Research Proposal has been completed and accepted. The Research Proposal must comply with the prescribed format and must also define which one of the thesis options (150 credits or 120 credits) will be selected.

Both thesis options make provision for electives. An elective is any module delivered as part of the PGDip (Sustainable Development) programme, or any module delivered by other degree programmes in the School of Public Leadership, or any other module delivered by any other Departments at Stellenbosch University, or a module delivered by another institution (subject to approval by the Programme Coordinator). If a student selects a module that is not part of the PGDip (Sustainable Development) programme, to facilitate the participation by the student in this module the student will be registered for a general module called *Advanced Studies in Sustainable Development*. (For example, if a student wants to do a module in Land Studies or Physics at Stellenbosch University or elsewhere, the student will be registered for a module called *Advanced Studies in Sustainable Development*.)

Three further electives are offered as part of the Master's Programme in Sustainable Development, i.e. *Research Methodology*, *Research Dissemination* and *Planning & Design Practice*. *Research Methodology* is a module that takes place in November where students seeking admission to the MPhil submit and present proposals. These are formally evaluated and marked. The *Research Dissemination* module takes place at the end of the MPhil and is an opportunity for MPhil students to convert their research into a publishable paper.

After completion of the PGDip (Sustainable Development), students wishing to complete the Sustainable Development Planning specialisation (in order to work as planners in SA) are advised to select the 120 credit thesis plus 4 electives option. It is recommended that these 4 additional modules are selected from the Sustainable Development Planning Stream of the PGDip; or from the MPhil Environmental Management or HonsBPA or MPA programmes delivered by SPL; or from the Masters of Urban and Regional Planning (MURP) or the MPhil in Urban and Regional Science offered by the Centre of Regional and Urban Innovation and Statistical Exploration (CRUISE) which is part of the Geography and Environmental Studies Department in the Faculty of Arts. Besides the PGDip modules listed earlier, other specific electives that are recommended are *Geographical Information Systems in Environmental Analysis and Management (or a similar GIS module)*, *Project Management (SPL)* and *Urban Management Processes (CRUISE)*. The research component for the MPhil will also need to have a "Sustainable Development Planning" focus.

The School of Public Leadership offers two project management courses: a basic course called *Project Management* and an advanced course called *Advanced Project Management*. Both of these courses can be selected as electives and will be accredited under these titles.

Note: the page numbers below are based on a letter size of 12 and line spacing of 1½ (with about 375 words per page). Double line spacing (about 250 words per page) will lead to a longer thesis.

Option 1

Research component plus Two Electives Programme: a 150 credit research component (see options below) plus two electives worth 15 credits each selected from the modules on offer in the PGDip (Sustainable Development) programme or from any other Programme at the University of Stellenbosch or other learning institution on condition these have been approved by the Programme Coordinator. The Programme will consist of the following:

- Research Methodology Course, plus
- Two Electives: 15 Credits each plus
- Research Component: 150 Credits with the following options:
 - i. Two academic journal articles in the format and style of the School of Public Leadership template and in accordance with the requirements of the University, the School and the supervisor (± 8000 words [± 24 pages] per journal article).

OR

- ii. A project proposal for a given development project that must define the goal, objectives, implementation plan, budget, and monitoring and evaluation mechanism in accordance with the Logical Framework Analysis project management approach ($\pm 40\,000$ words [± 120 pages]).

OR

- iii. A traditional thesis in accordance with the normal academic format and requirements of the University, the School and the supervisor ($\pm 40\,000$ words [± 120 pages]).

NOTE: Appendices are not included in word count.

Option 2

Research component plus Four Electives Programme: a 120 credit research component (see options below) plus four electives worth 15 credits each selected from the modules on offer in the PGDip (Sustainable Development) programme or from any other Programme at the University of Stellenbosch or other learning institution on condition these have been approved by the Programme Coordinator. The Programme will consist of the following:

- Research Methodology Course, plus
- Four Electives: 15 Credits each plus
- Research Component: 120 Credits with the following options:
 - i. Two academic journal articles in the format and style as prescribed by the School of Public Leadership template and in accordance with the requirements of the University, the School and the supervisor (± 8000 words [± 24 pages]).

OR

- ii. A Project Proposal for a given development project that must define the goal, objectives, implementation plan, budget, and monitoring and evaluation mechanism in accordance with the Local Framework Analysis project management approach (± 30000 words [± 90 pages]).

OR

- iii. A traditional thesis in accordance with the normal academic format and requirements of the University, the School and the supervisor ($\pm 30\,000$ words [± 90 pages]).

NOTE: Appendices are not included in word count.

Scheduling: Candidates must submit a research proposal, written in accordance with the Departmental Guidelines for Research Proposals and acceptable to the Programme Coordinator and the Research Committee, by mid-January; for registration by 31 March.

Supervision: The Research Committee will assign a Supervisor for each candidate in accordance with available expertise and equitable distribution of the supervision load, plus two Examiners.

FEE STRUCTURE

Registration fee

The registration fee for 2017 will be R8280.00.

Course fees

- Option 1: 150 credit thesis R19035.00 + 2 modules @ R5006.00/module = R29047.00
- Option 2: 120 credit thesis R15227.00 + 4 modules @R5006.00/module = R35251.00

Note: 33% of thesis fees will be charged for the second year of study; and full thesis fees will be charged for every year of study after the second year. However, continuation after two years is not a given fact but is a privilege that is only granted under exceptional circumstances.

Editing fees

MPhil students must also take into account that their thesis document must be edited before final submission. Depending on the type of editing needed, fees vary from R2000.00 (form edit) to ± R12000.00 (content edit). Editing fees are not included in the course fees.

These course fees are provisional amounts for budgeting purposes only and not binding on Stellenbosch University or any of its employees/representatives. Accommodation and meals are not included in the course fees.

International fees

All international students who are in South Africa on a study permit pay the following additional fees:

- **SADC students including Namibian:** International registration fee (R3420.00) + service fee (R3510.00)
- **Non-SADC students:** International registration fee (R7230.00) + service fee (R3510.00)

Please refer to <http://www0.sun.ac.za/pgstudies/fees.html> for more information.

Fees payable by registration date:

- South African students are required to pay the registration fee (first instalment on tuition fees) before registration. This date differs for new and second year students.
- International students are required to pay all academic fees, international registration fees and service fees upfront before registration.

The University, as represented by the duly authorised decision-making body, reserves the right to amend all fees payable to the University. As a result, the above quoted fees may change by the time that registration takes place in January 2017. The School of Public Leadership and the staff associated with the management of this programme cannot be held accountable if for any reason the above quoted fees are changed by a duly authorised University decision-making body.

GENERAL INFORMATION

PAYMENT OPTIONS

Refer to the information at the following link:

<http://www.sun.ac.za/english/maties/fees/payment-options>

BURSARIES AND SCHOLARSHIPS

Information on financial aid can be found at the following links:

- www.sun.ac.za/calendar
- <http://www0.sun.ac.za/pgstudies/scholarships-and-opportunities.html>;
- <http://bursaries-southafrica.co.za/>

INTERNATIONAL STUDENTS

Information on visas, fees, language requirements and long term accommodation can be found on the website of the Postgraduate & International Office:

<https://www0.sun.ac.za/international/>

ACCOMMODATION OPTIONS

Accommodation depends on individual circumstances and personal choice:

- long term University accommodation in Stellenbosch;
- long term private rented accommodation in Stellenbosch or surrounds (room/flat/house):
<https://www0.sun.ac.za/international/about/accommodation-in-stellenbosch.html>
- short term – guesthouses near the SI:
Drie Gewels Eco-Lodge in the Lynedoch EcoVillage: tel. +27 21 8813196 ext 219;
hospitality.si@sustainabilityinstitute.net;
Onze Rust Guesthouse; www.stellenboschstay.com
Soverby Guesthouse; www.soverby.co.za
- guesthouses in Stellenbosch - <http://www.stellenbosch.travel/stay>
- Students are responsible for their own accommodation arrangements.

COMMUTING OPTIONS

All modules are delivered on the premises of the Sustainability Institute. These premises are located within the emerging Lynedoch EcoVillage Development which is located on the R310 diagonally opposite the Spier Wine Estate, 12 km outside Stellenbosch. Students are responsible for their own transport arrangements. Most students, if they aren't staying in the Drie Gewels Guesthouse on site, travel by car and often arrange lift shares amongst themselves. The only public transport available is a train service and the journey between Stellenbosch and Lynedoch takes 9 minutes. The Lynedoch train station is 3 minutes' walk from the SI.

APPLICATION PROCEDURE

CLOSING DATES FOR APPLICATIONS:

31 AUGUST (Postgraduate Diploma in Sustainable Development)

30 SEPTEMBER (MPhil in Sustainable Development)

The University must be in possession of ALL your supporting documents by these dates

Please familiarise yourself with the entry requirements before applying for either of the two programmes.

PGDip in Sustainable Development

CLOSING DATE FOR APPLICATIONS:

31 AUGUST OF THE YEAR PRIOR TO THE YEAR FOR WHICH YOU ARE APPLYING

The application process for the PGDip (Sustainable Development) programme is two-fold, namely:

- firstly, by applying to Stellenbosch University; and
- secondly, if accepted by the University, by applying to the Department, namely the School of Public Leadership.

The complete process is described below.

1. Stellenbosch University Application

1.1 External applicants (not enrolled at SU at the time of application)

Step 1

Information you will need for your application:

- Faculty: Economic and Management Sciences
- Department: School of Public Leadership
- Programme: Postgraduate Diploma in Sustainable Development

From 1 May in the year preceding the year that you wish to study, apply online at:

<http://www0.sun.ac.za/pgstudies/>

If it is impossible to apply online, an application form may be requested from the University Client Services Division (info@sun.ac.za)

All external applicants receive a student number via email or sms (text message). This is not an indication that you have been accepted by the University.

If you have applied online, you need to mail proof of payment of admission fees (not applicable to international students), certificates and a signed agreement to the University at info@sun.ac.za; or you will be requested to upload these documents to the system. Your application will not be processed further unless the University receives all the documents described above.

If you submit a paper application form please include all documents described above and post them to the address on the application form; or scan and email them to info@sun.ac.za. Please ensure that the scanned copies are clear and easy to read. The application forms do not fax well and you are advised not to fax your applications.

All the documents mentioned above need to be submitted to the University by 31 August, in other words the University must be in possession of your complete application by 31 August, otherwise your application may miss the selection process.

It is your responsibility to follow up with the University Call Centre to confirm that your application is on the system and that all supporting documents have been received. Once your application has been successfully processed by University Admissions you will receive an email or sms (text message) with

your University password. Please note that this is not an indication that you have been accepted for the PGDip in Sustainable Development.

1.2 Internal applicants (enrolled at SU at the time of application)

Apply via My.Sun.ac.za: Studies - Application postgrad studies.

Step 2

Applications of external applicants are reviewed by the Faculty Secretary (and International Office if you are an international student) to ensure that you comply with the entry requirements for the PGDip (Sustainable Development) programme.

Step 3

The names of applicants accepted by Faculty are sent to the Department.

2. Departmental Application

Step 4

The Programme Administrator will email a departmental application form to you if you have been provisionally accepted by Faculty. There may be a substantial time lapse between your University application submission and contact by the Programme Administrator – most often this is due to university applications being incomplete, but also because the Faculty review process may not commence until June/July. It is the applicant's responsibility to follow up on applications submitted. The completed departmental application form plus a motivation (1000 words) of why you wish to study the PGDip in Sustainable Development must be emailed back to the Programme Administrator within 10 days of receiving the email and departmental application form.

Step 5

Your departmental application will be reviewed and you will be notified whether your application was successful or not by the end of the second week in November. If your application has been successful, you will be required to pay a non-refundable deposit of R2000.00 by 18 November to secure your place on the programme.

MPhil in Sustainable Development

CLOSING DATE FOR APPLICATIONS:

30 SEPTEMBER OF THE YEAR PRIOR TO THE YEAR FOR WHICH YOU ARE APPLYING

Preference will be given to students who obtained 65% or higher for each of their respective modules in the BPhil/PGDip programme. Students who are conditionally accepted for MPhil studies are required to attend the following two compulsory events:

- a Colloquium (where current students present their research) on 6 and 7 November 2017; and
- a Research Workshop from 8-10 November 2017.

The application process is twofold, namely:

1. Research concept note

All applicants must submit an electronic copy of a 1000 word research concept note to the Programme Administrator by 30 September of the year prior to the year for which you are applying. The concept note template is available from the Programme Administrator.

2. Stellenbosch University Application

2.1 External applicants (not enrolled at SU at the time of application)

Complete an online application form at: <http://www0.sun.ac.za/pgstudies/>. This link will be active from 1 May. Information you will need for your application:

- Faculty: Economic and Management Sciences
- Department: School of Public Leadership
- Programme: MPhil in Sustainable Development

See Steps 1-3 above.

2.2 Internal applicants (enrolled at SU at the time of application)

Apply via My.Sun.ac.za: Studies - Application postgraduate studies

CONTACT THE CORRECT DIVISION FOR ENQUIRIES RELATING TO YOUR APPLICATION

Enquiries relating to your online university application: University Call Centre, tel. +27 21 808 9111; info@sun.ac.za.

Enquiries relating to your PGDip *departmental application* or MPhil *research concept note*: Beatrix Steenkamp (Programme Administrator), tel. +27 21 881 3952; email bsteenkamp@sun.ac.za.

Enquiries relating to *funding, visas, language proficiency, etc.*: Postgraduate & International Office, tel. +27 21 808 2565; <http://www0.sun.ac.za/pgstudies/>; email interoff@sun.ac.za.

USEFUL CONTACT INFORMATION

Programme Administrator Beatrix Steenkamp; bsteenkamp@sun.ac.za	+27 (0)21 881 3952
Stellenbosch University Call Centre	+27 (0)21 808 9111
Accommodation: University (long-term) https://www0.sun.ac.za/international/about/accommodation-in-stellenbosch.html	+27 (0)21 808 3892
Accommodation: Sustainability Institute (short-term) hospitality.si@sustainabilityinstitute.net	+27 (0)21 881 3196
Bursaries: Postgraduate http://www0.sun.ac.za/pgstudies/scholarships-and-opportunities.html beursnavrae_nagraads@sun.ac.za	+27 (0)21 808 4208
Bursaries & Loans: General	+27 (0)21 808 4627
Bursaries: Centre for Renewable Energy Studies (Renewable & Sustainable Energy Students only) http://www.crses.sun.ac.za/studies-bursaries	+27 (0)21 808 4069
Division Student Fees	+27 (0)21 808 4913/ /4519/4521
Division Student Records	+27 (0)21 808 4575
Faculty Secretary: Ms Nazli Daniels, ndaniels@sun.ac.za	+27 (0)21 808 4837
Postgraduate & International Office http://www0.sun.ac.za/pgstudies/ ; interoff@sun.ac.za	+27 (0)21 808 2565

APPENDIX A

MODULE OFFERING*

*PGDip/Honours level indicated by module code starting with 7; Master's level indicated by module code starting with 8

Advanced Project Management 871 (MPhil elective)*

*Students register for the Advanced Project Management short course at Bellville Park Campus; Intermediate Project Management at BPC is a pre-requisite

The overarching objective is to equip participants with selected programme and project management applications and skills in such a manner that they can apply them to a real work situation, and understand the benefit, and have the ability to utilize the applications in the interest of their particular beneficiaries and society as a whole towards the achievement of immediate outputs and to support sustainable outcomes. The following topics and outcomes are to be achieved by the module:

- From policy to programme design: knowledge and understanding of how long-term sustainable strategic and tactical integrity, rather than narrower, more short-term quick gain-seeking interests affect programme and project design;
- Programme design and institutional set-up: the ability to develop an integrated framework reconciling programmes and organisational set-up and organisational culture;
- Programme-environment interface: the ability to manage impact assessment and define, schedule and integrate projects and operations;
- Programme resource management: the ability to holistically manage human interdependence, project and programme risks, the supply-chain and programme finance to ensure sustainable project and programme delivery;
- Programme control, monitoring and evaluation: the ability to define and measure outcome and output performance indicators and to monitor and evaluate programme performance;
- Computer applications: the ability to use computer software in the above processes (optional).

Advanced Studies in Sustainable Development 871 (MPhil elective only)*

*A 'basket' module for a mark scored in an elective outside our module offering

*This module carries full module fees as set out elsewhere in this document; as well as course fees at the institution offering the elective

At the MPhil level students are encouraged to specialise by making sure their literature review and empirical research has a specific focus. To support this effort, they are encouraged to register for this module which provides a framework for structured course work in a specialist area. It will be the responsibility of the student's supervisor to make sure that an appropriate mix of course work and written outputs are compiled that support the overall focus of the thesis work. It follows, therefore, that this module may vary for each student. However, in all cases the core content will comprise a combination of the following learning activities:

- Course work that relates directly to the research focus of the thesis – typically this could include participation in course work offered within the School of Public Leadership or other departments at Stellenbosch University, courses offered by other Universities, Winter/Summer Schools, etc. with an assignment based on this course work;
- Related field research and/or applied research (e.g. modelling work or ethnographic research) – here the student will be required to complete an assignment that relates the course work to a relevant practical problem that tests and deepens the student's grasp of the concepts covered in the course work;
- Translation of the course work and field research into an appropriate section in the thesis that needs to be compiled for the degree as a whole.

Advanced System Dynamics Modelling 871 (MPhil elective)

This is an advanced course in system dynamics, a sequel to System Dynamics Modelling 771/871. It is intended for system dynamicists or students with prior knowledge in system dynamics who want to take advanced topics in system dynamics. Students will conduct a project for a real-world problem facing a society or an organisation using the method of system dynamics. Students will learn advanced topics in system dynamics modelling and they will apply these in the group project where they will conceptualize and build a system dynamics model "from scratch," following the system dynamics modelling process. The course will emphasize developing insights using the system dynamics method and communicating model outputs in a real world problem situation.

The topics that will be covered in the course include:

- Building models with subscripting (arrays)
- Modelling with molecules
- Interactive models
- Imports and export data to spreadsheet
- Optimisation to fit a model to historical data and select effective policies
- Testing robustness of policies with Monte Carlo sensitivity techniques
- Building games and learning labs
- Input-output interface

Upon completion of this course the student will have:

- Enhanced skills in model building, validation and communicating models in a real world problem situation
- Hands on experience in the selected advanced modelling topics
- An understanding of advancement in the field of system dynamics modelling

Applied Economics 775/874

Framed and informed by the financial crisis and the responses to it, this module aims to introduce participants to the basic concepts of and insights into the crafty art and artistic craft of the orthodoxies and heterodoxies of economics in the theoretical and practical realms. The grain and texture of the course is admittedly coarse, connected to the breath/width of the module and its orientation towards eclectically combining the paradigms and practices of economic planning, generally, and development planning/development economics, more specifically. The elaboration – at different and linked spatial and institutional scales – of theories, policies, programmes, plans and other interventions to further the objectives and installation of pro-poor economic growth and distributional paths/trajectories/regimes - constitutes, in this, our troubled and unstable times, the foundation/anchor of this module. Given these parameters and scope, the module grapples with a multiplicity of development planning problematics spanning the role of the state in (and the interconnections between) economic and human development, refracted through the lenses of poverty eradication, redistribution and socio-economic empowerment in and beyond (ostensibly) market-conditioned/mediated formats. Hence, the honing in on the developmental state in its national, regional and local manifestations and the form and materiality of its interventions/activities related to macroeconomic management, employment generation and industrial development, income and asset transfer programmes, human capability enhancement, land and infrastructure development and more. Littering this are a few presentations focused on state construction and statecraft in changing times; and the search for 'meaning' and the 'truth' (or more appropriately, the 'good, bad and ugly' of knowledge re/invention and the morality/virtues of philosophical/ideological adultery and promiscuity).

The literature assembled criss-crosses, albeit unevenly and not comprehensively, the development economics disciplinary terrain, spotlighting (changing) industrial policy, regional development; economic history; national planning; green economy and transitions; corruption and capitalism; SA's evolving political economy; the tensions and contradictions of capitalism, the Fool-/Philosophy of economics; and broad angle questions and debates about moralities and immoralities of our regime and regimen.

Biodiversity and Ecosystem Services 772/872

In the face of global change and natural resource depletion, it has become an imperative to understand the links between biodiversity and ecosystem services such as freshwater, crop production, grazing and climate regulation, which underpin the economy and well-being of different groups in society. However, biodiversity, ecosystem services and human well-being are all multidimensional issues characterized by complex interactions. In this module, a variety of biodiversity and ecosystem service frameworks will be introduced and discussed in light of how they help us understand our connection with and dependence

on nature. Empirical work from southern Africa will be showcased to illustrate how biodiversity, ecosystem services and human well-being can be mapped and analysed, and how these analyses can feed into governance and decision-making processes at the local, national and international level. This will include a discussion of specific threats to biodiversity and ecosystem services, such as land cover change, fragmentation and invasive alien species. Furthermore, we explore trade-offs in ecosystem services and factors that influence investments in ecosystem restoration, as well as the potential for green infrastructure to act as an alternative to physical man-made infrastructure. The module will also discuss possible tipping points that could trigger large, abrupt, nonlinear changes in ecosystems and society which might threaten critical ecosystem services that support human well-being, especially amongst vulnerable groups in society. In summary, during this module students will learn about the vital ecosystem services that underpin human societies and how these services can be managed or restored to build resilience and improve human well-being outcomes within complex, interconnected social-ecological systems.

Bio-energy 744/874 (Engineering module)

The course will consider the practical and commercial application of the various technologies for biomass conversion into bio-energy. The production of first and second generation bio-fuels as well as other forms of renewable energy, such as electricity, will be covered, with an emphasis on the critical issues of thermal efficiency, sustainability and commercial feasibility.

A student who has successfully completed this module can:

- develop and evaluate project proposals in bio-energy production by taking into consideration technical issues, economic feasibility and sustainability;
- have a conceptual understanding of the conversion technologies for bio-energy and biofuels production, including biodiesel, biogas, ethanol, combustion, pyrolysis, gasification and electricity generation;
- perform a critical analysis of the sustainability of bio-energy production, with an emphasis on finding practical, innovative, sustainable solutions;
- perform a critical analysis of the sustainability of bio-energy production, with an emphasis on finding practical, innovative, sustainable solutions.

The selection of the most appropriate technology from the demand side perspective will be a central thread through the course.

Comparative Studies in Regenerative Food Systems 771/871* **

** This course is presented in India.*

*** Due to the nature of this course the total number of participants is limited to 15 per year. In addition to standard course fees, this course carries an additional cost of ±R12000 (TBC), which covers all living costs while in India. Flights to India any other expenses relating to getting to and from the course location are not included.*

Based at a rural development organisation in Wardha, Maharashtra State, central India, this course is composed of 2 weeks of applied learning, site visits and lectures in food system sustainability and knowledge cogeneration. Focusing on an exploration of the links between soil, agricultural practices, poverty, economics and well-being, the lectures will be globally relevant, while the field trips will be used to provide gritty, practical insights and experiences at a grassroots level. Participants will be encouraged to share and compare experiences from their own countries to deepen all participants' understanding of the issues as they manifest across a range of contexts. India is a rapidly developing global economic powerhouse and the stories playing out on the ground in India will have profound impacts on the rest of the world for centuries to come. Participants will develop a feel for life at the coalface of this transition in a small town in northern Maharashtra State where the ruptures and tensions of this transition are present in every facet of life. Participants will also explore some of the innovative research methodologies grappling explicitly with the practicalities of knowledge-cogeneration in the food system. An important focus is the lessons Africa can draw from India's agrarian revolutions and food market structures. This will entail being based on Dharamitra's research farm, undertaking a range of site visits, contact with local practitioners and scope for engagement with local researchers. High external input, globalised food value chains will be compared with localised low-external-input systems in order to better understand the strengths and weaknesses of each. This comparison will include site visits which track the 'farm to fork' journey of a number of key crops which are produced under different management paradigms and distributed through a range of different markets. A range of sustainability interventions and perspectives are presented at various points within the food system, which students are encouraged to critically evaluate and contrast to their own contexts. In order to allow space for students' own context and complex stories to inform the lessons they take away from this course, heavy emphasis is placed on allowing students to co-create the lines of inquiry over the course of the course. Course participants will be able to describe, analyse and critically evaluate the different options for promoting regenerative food systems. These options contribute to the broader sustainability objectives of restoring degraded ecosystems while improving social cohesion, wellbeing and justice. In addition students will leave with a suite of practical technologies and interventions for enabling the regeneration of food systems in their home contexts.

Comparative Studies in Sustainable Living 771/871* **

**This course is presented in Nepal.*

*** Due to the nature of this course the total number of participants is limited to 10 per year. In addition to standard course fees, this course carries an additional cost of ±R18000 (TBC), which covers all living costs over the 16 day journey in Nepal. Flights to Nepal any other expenses relating to getting to and from the course location are not included.*

The course is structured over a 16-day journey to a remote and highly traditional rural region (only accessible by foot) in order to provide a lived understanding of the transition between traditional, localised economies and a glimpse into ancient ways of being that are rapidly vanishing. Over this period students will engage with various development theories as they transition from urban to remote cultures, in order to understand in practical terms how globalisation and the spread of consumer cultures affects both personal and global sustainability outcomes in the global South. Strong emphasis is placed on the comparison of students' home contexts with the contexts they encounter on the course. Participants will address a core question: 'In trying to solve the sustainability challenges we face, what lessons can my community and I, take from remote communities and traditional knowledge systems?' In order to allow space for students' own context and complex stories to inform the lessons they take away from this course, heavy emphasis is placed on allowing students to co-create their personal lines of inquiry. Through the lived experience of different ways of being and living, students are expected to have acquired an alternative platform from which to critically reflect on their own lives and social patterns within their communities - with particular reference to the (un)sustainability of their own practice. A range of philosophies are introduced which serve as a conceptual framework to underpin the learning experience. This conceptual grounding is combined with a lived experience of an ancient socio-ecological system in a state of rapid transition, so as to provoke fresh insights and creativity for solving specific sustainability challenges students face in their own communities and careers. On completion, students will be able to explain, in practical terms, some of the benefits, as well as major challenges and drawbacks of globalisation and the spread of consumer capitalism. Included in this will be how the connection of traditional societies to globalised systems influences social norms and values, changes the design of built environments, and shifts the way in which societies perceive their relationship with their supporting ecosystems. Participation in this module will require a good level of physical fitness and a willingness to spend time in very remote areas traveling on foot. Accommodation will be a mix of very basic local lodging and camping, in areas devoid of any tourist infrastructure.

Complexity Theory and Systems Thinking 772/871

This is a theoretical and conceptual course that addresses the notion of complexity which, in turn, has become a vast and intricate literature that spans the globe, cuts across all disciplines and means many different things to different people. The orientation of this course is to locate complexity within a philosophical and 'history of science' context, and to distinguish complexity from more modernist interpretations such as chaos theory and most systems theories. Importantly, this course provides the primary conceptual framework that students will require to fully understand sustainability in general and sustainable development in particular. Increasingly across the globe sustainability is being understood via complexity perspectives that seem most capable of handling the transdisciplinary nature of sustainability. The course will try to demonstrate some of these links. Although a week is much too short to do justice to the subject of complexity and systems thinking, this basic introductory course is designed to provide course participants with the key conceptual tools that will be required to fully integrate all the different dimensions of sustainability that are addressed in the other modules.

Development Planning and Environmental Analysis 771/873

The aim of the module is to provide participants with an overview of basic concepts and insights into various types of analyses undertaken by planners and environmental managers, and the application of analysis to development planning and environmental management problems generally, with an emphasis on a sustainability perspective. The background reading for this module include readings on Integrated Environmental Management (IEM), screening, scoping, specialist studies as part of Environmental Impact Assessments (EIAs), Impact significance, Environmental Management Plans (EMPs) and Frameworks (EMFs) and Strategic Environmental Assessments (SEAs); as well as readings on poverty assessments; demographics, social and economic analysis, and on sustainability assessments (SAs) and sustainability indicators. The module will also explore the 'knowledge-policy-action nexus', namely the role that science and other forms of knowledge play in policy-making; in decision-taking and the implementation of plans, policies and projects (contrasted to the role of politics and power).

The following broad themes will be dealt with in the module:

- Introduction to Analysis and relevant concepts and its role in the knowledge-policy-action nexus
- Introduction to rational planning and the Logical Framework Approach (LFA)
- Social, demographic, poverty and economic analyses
- Sustainability Assessments or Appraisals and sustainability indicators
- Integrated Environmental Management (IEM), Strategic Environmental Assessment (SEA),

Environmental Management Frameworks (EMFs), Environmental Management Programmes/ Plans (EMPs) & Environmental Impact Assessment (EIA)

- Overview of technical skills, such as the extraction and processing of South African census data, population forecasting and socio-economic analysis, relevant in developing a socio-economic profile of a town or region

Although this is not a statistics module, nor is it a requirement to have knowledge of statistics, in order to attend the module; some basic statistical analyses will be referred to during the module. In order to write research reports and for future work as development planners or environmental managers, it is highly recommended that students are computer literate and proficient in the use of Microsoft Word and Microsoft Excel. In addition, knowledge of statistics and statistical programmes (such as Statistica or SPSS) will also be very useful for future research and report writing endeavours. By the end of this module, participants will have been introduced to and grappled with some complex planning challenges arising from the calls for a more sustainable future. To achieve this general learning outcome, course participants will:

- have a greater understanding of various concepts relevant to development planning and environmental analysis and the role of analysis in knowledge-building, science and research, policy-making and implementation for sustainability (the knowledge – policy- action interface);
- have a greater understanding of the context of science, research and analyses, namely complexity, uncertainty, diversity, and the political nature of knowledge;
- have been introduced to various poverty, social, economic and environmental analyses;
- have some knowledge of the interface between the natural and the human environment (social-ecological systems);
- be able to do certain analyses of the environment, and be aware when to call in specialists for more advanced studies;
- be familiar with methods for determining environmental impacts;
- have been introduced to the field of Monitoring and Evaluation and a variety of sustainability indicators, for example theories about the ecological footprint of a city;
- have been introduced to available census data, and be aware how census data can be extracted with SuperCROSS and how this data can be processed into useful information (socio-economic indicators), using Microsoft Excel and Word;
- know how to interpret and represent the socio- economic characteristics of communities in the form of a town or regional profile.

Development Planning Systems, Law and Policy 772/872

Aim: this module will provide participants with an understanding of the constitutional, legislative, policy and procedural dimensions of the South African planning system, linking to what is happening in the rest of Africa and the world. The module will focus on how to promote justice, human rights (Bill of Rights), equity and sustainability through law. This will include an understanding of the concepts of the developmental state, co-operative governance, the distribution of planning powers and obligations across the different spheres of government, environmental, land use, land reform, rural, urban and regional development legislation and policy, in order to analyse, critique and apply these frameworks. Central themes will include:

- planning, development and environmental management systems, both informal and formal, and their links to social systems
- making institutions, legislation and policy more responsive to poor people and the application of human rights and other normative approaches, such as environmental justice, the just city, deliberative democracy, and what constitutes citizenship
- the role of a developmental government and local authority and criteria to assess the success of their integrated development planning in promoting sustainability (both the products and the process)
- planning systems for sustainable development, linking land use, transport, squatting, housing and environmental law
- criteria for analysing constitutional, legislative and policy frameworks

Development Theory & Practice 771

This course will provide a brief introduction to mainstream and heterodox economics; the complex relationship between ideology, money and social power; the politics, economics and sociology of policy

reform, state-building and developmental statecraft. To unpack this, this course introduces students to mainstream theories of development; crisis of/in development thinking; poverty-inequality-power nexus (refracted through race, class, gender, food, knowledge, culture); state and development (centrality of class in critical development studies, politics of Empire, politics of development); compressed development and different pathways to growth, including orthodox and heterodox explanations of development in diverse countries (including China, India, Brazil, Botswana, Mauritius, S-E Asia); Africa and the World Economy (aid, trade, debt, growth). On conclusion of the module, participants will have understood and critically engaged with the complex and diverse universe of 'development'. To achieve this, key learning outcomes include:

- Demonstrated understanding of development with particular appreciation of its historical, theoretical and philosophical underpinnings
- Capacity to critically analyse and deconstruct development-speak (devspeak) referenced to imperatives of ameliorating poverty, inequality and unemployment
- Awareness to and knowledge of the complexities of designing, charting and sustaining pro-poor and inclusive growth and development paths
- Ability to frame development problematic/s and proffer suggestions and remedies that are anchored in historical record, empirics and experience

Ecological Design for Community Building* 776/876

**The title of this course will change as from 2018 onwards to reflect the content – the new title will be Transdisciplinary Design for Transformation.*

We live in a material world that has been designed by designers to achieve certain outcomes, usually to ensure maximum consumption of resources. Even many so-called natural environments are designed rather than still wild and 'natural'. A more sustainable world will mean changing our assumptions about design, and what should be designed. This course will therefore focus on the role of design in all its disciplinary manifestations during the industrial era (last 250 years): design has affected the shape and experience of industrialisation, urbanisation, urbanism, political economics, power relationships, globalisation and the quest for a sustainable future. It has shaped out ethics and leadership styles and processes. Through its function of object-making, communication-making, space-making, experience-making and systems-making, design plays a powerful role in the forming of values, identities, lifestyles, aspirations, expectations, choices and behaviour. These choices determine our relationship with 'stuff', with 'other' groups, with our environment, with the planet, with the future, with reality. If we want to change this relationship, we need to know how design works and what it will take to redesign the material world. The course will question whether design is Master of, Slave to, or Collaborator with, the dominant socio-political-economic-technical system.

Economics of Sustainability Transitions* 771/871

**This module is presented in Nepal*

The world economy has reached a tipping point and a paradigm shift is taking place in the understanding of what works in economic policy. The last century has been characterised by US hegemony, free markets, economies of scale, centralisation of corporate power and increasing globalization and specialisation across country economies. While huge gains have been made in terms of poverty, growth in absolute wealth, and variety of products and services available, the 21st century opened with great concern about the sustainability of such success and was soon followed by the greatest global recession since the 1930s. Inequality is at its highest level in history. The world is asking - "What now?". The module is structured over the course of a 20 day journey from an emerging economy city (Kathmandu, Nepal) to a remote, rural region. It explores this macroeconomic question of "What now?", through an immersion into a microcosm on the frontier of the global economic transition. The module seeks, in very practical terms, to investigate what macro-economic trade policies and neo-liberal developmental economic theory mean for traditional societies, the environment, the human psyche, and emerging economies in general. Through a journey from the rapidly modernising capital of Kathmandu into the ancient mountain communities of the Himalayas and back again the module provides a critical perspective on globalized economic policies and developmental paradigms. The module will also present various counterpoints to the dominant global economic landscape, including the economics of localisation and the rise of alternative economic indicators such as the Genuine Progress Indicator and Gross National Happiness. In order to allow space for students' own context and complex stories to inform the lessons they take away from this module, heavy emphasis is placed on allowing students to co-create their personal lines of inquiry over the course of the module. After completion of the module the student will be able to:

- Convey an experiential understanding of the macro-economic transition between traditional localised economies and the modern globalised economy;
- Examine aspects of the underlying economic landscape and global drivers behind economic transitions in emerging economies;

- Assess the impact and sustainability of the increasing expansion of globalised economies into emerging economies;
- Propose alternative systems in the transition towards sustainable development;
- Value the contribution which traditional knowledge systems have to make in solving global sustainability challenges.

Facilitation for Sustainability Transitions 772/872

During this course, we will explore the possibilities inherent in having, and facilitating, conversations that matter to us. We will look at facilitation as the conscious use of process, substance, and space. From a process perspective, we will look at some theories of dialogue and facilitation, some ways of thinking about group process and different kinds of dialogue. Participants will have opportunities to engage in facilitated group conversation, and to experience themselves more consciously in this process. The substance of the conversations will be evoked, in part, by living case studies that speak of some of the complex socio-ecological realities we live in. Participants will also bring to the course the issues that they are grappling with and about which they want to initiate conversation in their own contexts. Lastly, we will look at the question of space; choices about the physical places in which to host dialogue and how those relate to nature and the outdoors, spatial arrangements in those spaces, as well as more metaphorical aspects of internal spaciousness in the facilitation role and the idea of boundaries. How can we support a group to find both its yes and its no, in ways that will generate more clarity and potentially galvanize action? How can we as facilitators find both our yes and our no and use these skilfully in the groups we work with?

Food Security and Globalised Agriculture 774/874

Course participants will be required to describe, analyse and critically evaluate the different options for ensuring food security from a sustainable development perspective, within a globalised food system. This course proceeds from the assumption that the solution to hunger does not lie in producing more food, but in restructuring the global food system. The global food system delivers mostly unhealthy food to those who can afford to buy the food and in the process unsustainably exploits a wide range of ecosystems. Alternatives are emerging that need to inform the way the global food system is restructured and transformed.

Central themes will include:

- Overview of the globalised nature of food systems and implications thereof;
- South African agriculture and food policy within global food systems;
- Food security – global status, varying policy responses and major debates;
- Nutritional security;
- Case studies of food and agriculture policies in Africa and the world.

Although the issues in this course are global, we encourage students to apply their learning to topical issues unfolding in the food system. For example, in 2015, students' group presentation topics involved making submissions to the public participation process of the Competition Commissions' proposed investigation into the role of supermarkets in informal settlements and impact on food security and the informal economy.

Food System Transitions 771/871

The aim of this course is to equip participants with knowledge of the various responses to unsustainability in the food system and critical thinking skills to contextualize and assess these responses. This will enable participants to engage with and critique food system transitions (including governance, policy and ideological positions) within the context of food security and food system sustainability. After completion of the module the participant will then be able to:

- Identify the intersection between food system transitions and broader global transitions;
- Apply food systems thinking;
- Identify various ideological positions in food debates;
- Analyse food policy and governance practices.

By taking this module, participants will be equipped to interrogate the various 'solutions' that are being offered or tried in practice in the search for sustainable food systems. This course offers an overview of various responses, places them in the context of broader global transitions and provides frameworks to guide analysis.

Governance, Globalisation and Civil Society 773/873

This course aims to provide course participants with an introductory understanding of the range of alternatives to the current global order that have started to emerge from a selection of literatures. Course participants will be required to identify the differences between these approaches and the implications for action by different actors commitment to radical social change. By the end of the course, course participants will:

- understand the global debates about alternatives to the current crisis-ridden global economic order;
- understand the different approaches and the assumptions on which they are based;
- understand the implications for social change of the different approaches, in particular the role that different actors will in the social change process; and
- be able to critically engage with the different approaches in order to more adequately work out what they think would be appropriate given particular contexts and value systems.

Introduction to Development Planning 771/871

Aim: this introductory planning module provides participants with an introductory overview of the developing field of trans-disciplinary and integrated development planning to promote sustainability. This includes an examination of the international, African and South African planning context, and the introduction of new planning languages, procedures, techniques and tools that are being used in the management of the built environment, environment, social, economic and institutional development. The course will also give an overview of substantive, procedural and normative theoretical planning models, and ethical dilemmas in professional practice. Main themes are:

- An introduction to sustainable development and planning concepts and language, concepts such as social capital, social-ecological systems and resilience, sustainable livelihoods, capabilities, right-based development and planning
- planning within a globalised world and the role of markets versus the role of states, as well as the limits of planning
- planning as 'the official story' versus 'insurgent planning' and an overview of various models and typologies of planning (rational, comprehensive, incremental, mixed scanning, implementation-orientated, strategic, advocacy, transactive/ social learning, equity, critical pragmatist, Marxist, radical, communicative/ collaborative)
- the role of informality and participation in planning and development, processes; social learning, and conflict transformation
- the role of spatial planning within an integrated planning process, regional and rural planning and the planning of sustainable human settlements
- planning tools and instruments for dealing with complex and 'wicked' problems such as urbanisation, migration, poverty, social exclusion, inequity, inequitable and inefficient urban form and degradation of the built and natural environment (such as the South African Integrated Development Planning concept, Local Agenda 21 planning and City Development Strategies).

Introduction to Solar Energy 747/847 (Engineering module)

The course consists of a study of both Photovoltaics (PV) and Solar-thermal technologies for generating electricity from sunlight. The principles, manufacturing technologies, efficiencies, advantages and limitations of various PV cells will be considered. The students should be able to design a manufacturing plant as well as practical installations of various PV components in a cost effective way. The main themes will include:

- Principles of operation of PV cells;
- Manufacturing technologies of crystalline and thin film PV cells;
- Balance of system (BOS): regulators, inverters and storage;
- Design of stand alone PV systems;
- Design of roof mounted grid connected PV systems;

- Design of large MW PV systems;
- Concentrators: combined heat and power generation (CHP).

The different solar-thermal systems will be introduced with the basic heat transfer and thermodynamics principles that apply. Both bulk electricity generation and smaller stand alone systems will be covered. The main themes will include

- Thermodynamics, Heat Transfer;
- Bulk solar thermal power generation systems;
- Energy storage;
- Large scale plant specifics and quantification;
- Life cycle costing.

Leadership and Environmental Ethics 773/873

Aim: to enable module participants to develop leadership capabilities that are premised on the capacity to recognise, describe, analyse and apply the different ethical models and value systems that underpin socioecological action. Central themes will include:

- the underlying ethical value systems of different leadership approaches;
- philosophical models for conceptualising environmental problems and the related approaches to environmental ethics – and why understanding these enables pragmatic action in conflicts in and around sustainable solutions
- relationship between environmental and social ethics, e.g. economic efficiency, freedom, equality and justice;
- models of, and approaches to, leadership within society and human organisations;
- the ethics of sustainability and process-oriented leadership;
- complexity, ethics and leadership;
- creativity, spirituality and personal unfolding;
- case studies and exercises.

Project and Design Practice (MPhil elective)

After completion of the module the student will be able to:

- analyse the contextual, biophysical, spatial economy, visual and other qualities of sites;
- apply normative spatial and settlement-making principles to promote sustainable settlements;
- work with densities, land budgets and land uses;
- apply development controls as found in Land Use (Management) Schemes and relevant spatial planning legislation by preparing and assessing development applications;
- graphically communicate planning proposals at various scales.

Project Management 871 (MPhil elective)*

**Students register for the Intermediate Project Management short course at Bellville Park Campus*

The overarching course objective is to equip participants with relevant project management knowledge and skills that will enable them to apply the project management approach to a real complex work situation and have the ability to utilise the project management applications in the interest of their particular beneficiaries and society as a whole by producing appropriate outputs that are contributing to sustainable outcomes. The following outcomes are to be achieved by the module:

- Knowledge of project management theory and an understanding of how project management techniques are used to establish the strategic integrity of a set of strategic objectives and identified outcomes with a particular project or work setting;
- The ability to develop an integrated and concise project business case from an identified need or opportunity and integrate that baseline case with other activities in the task environment in order to be reconcilable with strategic objectives;
- The ability to implement and manage the process of delivery encapsulated in the business case and ensure that deliverables as well as final output are integrated with outcomes;

- The ability to invest human capital in projects and invest in human capital through projects;
- The ability to plan resource utilisation and do project costing and management and monitor time, cost, the supply-chain and project risks during all phases of the project cycle and evaluate project output and outcomes;
- The ability to use computer software in the management of projects.

Renewable Energy Financing 771/871

Aim: To empower professionals to consider the potential of environmental finance when embarking on environmental projects. Specifically the course enables students to:

- Explain the importance of environmental finance in solving environmental problems.
- Understand the nature of typical environmental projects with specific focus on energy-related projects.
- Appraise the impact and applicability of various financial instruments in specific projects.
- Apply principles of environmental finance in the project finance environment.

This course will include a brief overview of some financial metrics such as IRR, NPV or DSCR.

The course will be most relevant to professionals at managerial or technical level in the electricity, oil, mining, investment, agricultural, insurance, environmental and public sectors. Although much of the focus in the course surrounds energy, some focus will also be given to wider environmental issues. However, this is not a course on biodiversity or impact assessments. It is also important to note that most of the course relates to environmental developments in a "project finance" paradigm.

It is strongly suggested that students should have experience of Excel, while knowledge of financial metrics (i.e. NPV, IRR, and DSCR) would be beneficial.

Renewable Energy Policy 771/871

Aim: To provide participants with an overview of the policy context, which must be understood as the regulatory, institutional and market setting for renewable energy technologies (RETs). To understand the policy context the sustainability of RETs, from the perspectives of policy-makers and other stakeholders, must be understood. The module is subsequently designed to address the following questions:

- What do sustainable RETs mean, and specifically in a municipal context?
- How can sustainable RETs be assessed, identified and prioritised at a municipal context?
- How may appropriate RETs be managed as sustainable energy value chains in Africa and urban environments?
- What tools can be used to promote appropriate and sustainable RETs in municipalities?

Renewable Energy Systems 714/814 (Engineering module)

This course forms the foundation of the various modules in Renewable and Sustainable Energy Studies. It will provide course participants with an overview of the most significant renewable energy resources, concepts, technologies and challenges to overcome climate change and other sustainable development goals and an insight into the possible solutions to sustainable energy usage. Course participants will be able to recognise, understand and evaluate the different renewable energy resources available today and in the future. The main themes will include:

- Basic Energy Concepts;
- Conversion of Energy;
- Renewable Energy Resources:
 - Hydro-Energy
 - Geothermal Energy
 - Tidal, Wave and Ocean Energy
 - Wind Energy
 - Solar Thermal Energy
 - Photovoltaic Systems
- Renewable Energy Scenarios;
- Case studies of renewable energy systems.

Research Dissemination 871 (MPhil elective)

This module provides the student with the means to effectively communicate the research results contained in their respective masters' theses to an intended academic and/or non-academic audience. Students will be required to convert their completed masters' theses into a conference paper for presentation at an end-of-year colloquium, followed by preparation of the conference paper for submission to an academic journal for publication. After completion of the module the student will be able to adequately disseminate research in oral and written formats. Specifically, each student will be able to transform their respective completed master's theses into a conference paper, and thereafter into a journal paper for submission to a relevant journal.

Research Methodology 871 (MPhil elective)

The challenges and problems that are posed by sustainable development are complex and mean that innovative approaches are required to investigate these challenges and problems. This module equips students that have already obtained the Postgraduate Diploma in Sustainable Development to undertake a comprehensive, transdisciplinary investigation of an identified challenge or problem that cannot be solved with conventional research approaches and mono-disciplinary theories.

After completion of the module the student will be able to adequately formulate:

- A literature review;
- The rationale to undertake research;
- A research problem and associated questions;
- Research objectives; and
- A research approach and strategy, including appropriate methods, to undertake a Master's-level investigation.

Sustainable Development I 771/871*

**Compulsory Foundation Module for PGDip (Sustainable Development) students*

Aim: This module will be the foundation stone of the entire programme. It will provide course participants with an overview of the most significant global environmental, social and economic challenges that face humankind, and an insight into the solutions suggested by the universal commitment to sustainable development. Course participants will be able to recognise, understand and apply the divergent interpretations of sustainable development that currently exist. The main themes will include:

- What does sustainability – and sustainable development in particular - mean?
- What is the relationship between inequality and unsustainability? Or, alternatively, what is the relationship between strategies to reduce inequality (via poverty eradication for the poor and consumption reduction for the rich) and sustainable development?
- What are the dynamics of transition to a more sustainable world?
- What are the relationships between human life and all life forms and how has this relationship evolved over time? How can humans re-establish an intimate relationship with nature?

Sustainable Enterprise 774/874

This module will investigate the nature and manifestations of social (sustainable) enterprise, with special emphasis on developing country contexts, particularly South Africa. An overarching question is what role, if any, can social (sustainable) enterprise play in the transition toward a 'new economy'. Is social enterprise a legitimate 'new economy' trend that imbues a genuine shift in attitudes and behaviour, or is it a veil for business as usual in the neoliberal regime?

Key themes include the following:

- Defining social (sustainable) enterprise
- The origins and language of social enterprise
- 'New Economy' trends through a social innovation lens
- The role of social enterprise in society and business
- The challenges and complexity of social enterprise and entrepreneurship
- Leadership characteristics necessary to lead change
- Failed transformation efforts and change-resistance

Sustainable Cities 775/875

Aim: to provide module participants with a general and comparative understanding of the combined economic, social and environmental impact of the following three trends: the expansion of the world population to at least 9 billion people over the next 35 years, the transition to a predominantly urban world by 2005, and the negative environmental impact of urban systems that have yet to be re-designed in line with the principles of sustainable development. Given that the majority of the world's largest cities will be in the developing world, it is these cities that will be the core focus of this course. Course participants will be required to critically evaluate and analyse current trends, and test and apply a range of policy alternatives. Central themes will include:

- comparative history of the city across the developed and developing world;
- current urban trends, including urbanisation, urban poverty, urban economic trends and local governance;
- the challenge of unsustainable urban systems for food supplies, waste, energy, water and CO₂ emissions;
- the social dynamics of cities, with special reference to African cities;
- globalisation and the changing role of cities in the global economy;
- policy prescriptions for urban problems from the main international institutions (World Bank Group, IMF and United Nations);
- case studies of sustainable development in practice.

System Dynamics Modelling 771/871

Aim: to provide participants with an appropriate way of visualising the complex interrelationships between various parts of real-world problems; problems that continually change over time and are resistant to corrective action. The module is an introductory one aimed at developing basic and some intermediate system dynamics modelling and simulation skills, and does not endeavour in advanced modelling. Essentially, the learning goals of the introductory course are:

- To acquire basic knowledge in, and understanding on system dynamics field / paradigm / method;
- To demonstrate understanding in defining real-world problems using system dynamics
- To gain basic hands-on practice and experience in qualitative and quantitative system dynamics modelling; and
- To apply system dynamics method using VENSIM software in evaluating the dynamics underlying a specific real-world problem.

Therefore, this module introduces the concepts of system dynamics modelling, including the modelling process, fundamental modes of dynamic behaviour, and the stock-flow-feedback structures that generate them, system mapping tools, and modelling human behaviour. System dynamics has been applied in various fields such as energy transitions, resource scarcity, health policy, social and organizational dynamics, economics and finance, environmental and ecological management, education, safety and security among others. Examples will be drawn from some of these fields, as well as on 'real-world' problems contributed by the participants of the course. Computer simulation models will be produced using the VENSIM software package.

Systems & Technologies for Sustainable Agriculture 774/874

This course aims to introduce participants to a range of sustainable approaches to agricultural production. By the end of the week, participants will understand the principles of these alternative farming systems and be able to apply them to different crop and animal production systems. Students will learn about crop and animal production using the inputs of soil, water, energy, labour and capital (assets) in a sustainable way that includes local environmental conditions, economic considerations and social networks. The main systems focussed on are organic production, agroecology and biodynamic agriculture. Exciting field trips to various kinds of farms in the area that are applying some of these approaches is a feature of the week. Although participants will be exposed to many of the practical aspects during the field trips, it should be borne in mind that the focus of this week is on the philosophical underpinnings of sustainable agriculture. Understanding the philosophy behind approaches to agriculture can guide one in understanding and evaluating the practical approaches.

DATES AND DEADLINES – 2017

Module	Module codes		Date presented	Individual assignment	MPhil journal article
		PGD			
Compulsory Orientation/Induction					
Sustainable Development I (PGDip (Sustainable Development) students)	58718	771		25-27 January	N/A
Intro to Development Planning	12230	771	871	30 Jan–10 Feb	27 March
Sustainable Development II (PDE, MEng & Env Man; international students on exchange)	58718	771	871	20 – 25 February	10 April
Food Security & Globalised Agriculture	12232	774	874	20 – 25 February	10 April
Sustainable Dev III (UCT, execs, PhD s/school)	Short course			06 – 11 March	24 April
Complexity Theory & Systems Thinking	11190	772	871	13 – 18 March	2 May
Development Theory & Practice	13355	771	N/A	13 – 18 March	2 May
Systems & Technologies for SA	12231	774	874	27 March-1 Apr	15 May
Leadership & Environmental Ethics	11491	773	873	27 March-1 Apr	15 May
Eco Design for Community Building	11188	776	876	03 – 08 April	22 May
Renewable Energy Policy	12531	771	871	15 - 20 May	3 July
System Dynamics Modelling	12530	771	871	15 - 20 May	3 July
DP Systems, Policy & Law	11182	772	872	15 - 20 May	3 July
Facilitation for Sustainability Transitions	11489	772	872	22 May – 2 June	18 July
Biodiversity & Ecosystem Services	11490	772	872	29 May–03 June	17 July
Advanced System Dynamics Modelling (MPhil elective)	13409	N/A	871	29 May–03 June	17 July
Food System Transitions	13359	771	871	05 – 10 June	24 July
Applied Economics	11198	775	874	19 - 24 June	7 August
Renewable Energy Financing	11651	771	871	19 – 24 June	7 August
DP & Environmental Analysis	55492	771	873	17 – 22 July	4 September
Corporate Governance & Sustainability	13354	771	871	17 – 22 July	4 September
Governance, Globalisation & Civil Society	11195	773	873	24 – 29 July	11 September
Sustainable Cities	11199	775	875	24 – 29 July	11 September
Sustainable Enterprise	60763	774	874	31 Jul–5 Aug	18 September
MPhil thesis submission (Dec graduation)					31 August
Comparative Studies in Regenerative Food Systems (INDIA)	13357	771	871	14 – 19 August	2 October
Economics of Sustainability Transitions (NEPAL)	13354	771	871	21 Aug– 2 Sept	9 October
Comparative Studies in Sust Living (NEPAL)	13356	771	871	Use this module for Corp Governance & Sust marks	
MPhil 2018 concept note				N/A	30 September
MPhil thesis submission (March graduation)					25 October
MPhil research colloquium / Research Dissemination	11273		871	06 – 07 Nov	06 November
MPhil research workshop / Research Methodology	51764		871	08 – 10 Nov	
MPhil 2018 research proposal				N/A	18 January 2018
Renewable Energy Systems	64890	714	814	03 – 08 April	
Introduction to Solar Energy	11294	747	847	26 June – 1 July	
Bio-Energy	64904	744	844	11 – 16 Sept	

Updated 7 December 2016

MASTER'S PROGRAMME in
Sustainable Development

P R O S P E C T U S 2 0 1 7