**Dire Dawa University**

**College of Social Sciences and Humanities**

**Department of Geography and Environmental Studies (GeES)**

**Curriculum for Graduate Students**

Specialization in:

Disaster Risk Management (DRM)

Geographic Information System and Remote Sensing (GIS& RS)

Integrated Dryland Management (IDM)

River Basin Dynamics and Management (RBDM)

Urban and Regional Development Planning (URDP)

Land Use and Administration (LUA)

**Course Descriptions**

**9.4.1. GeES 611: Environmental Change and Management**

Credit Hour =3(5ECTS)

**Description**:

This course introduces the nature and relevance of key environmental challenges such as climate change, desertification ecosystem pollution, ozone depletion, salinization, extreme climate events. The course will provide an introduction to a range of important environmental and sustainability topics, with a focus on their human dimensions. Human dimensions encompass the societal, political, economic, technological and cultural aspects of managing and responding to contemporary environmental change and sustainability problems. The course offers research and opinions on use and conservation of natural resources, protection of habitats and control of hazards, spanning the field of environmental management without regard to traditional disciplinary boundaries. It will also provide a critical survey of the contemporary field of environmental policy, planning and management in the national and international contexts. The course will introduce students to the dominant management models that have been applied historically.

**Methods of delivery**

 Lectures

 Group and individual presentations

 Course paper

**Methods of Assessment/Evaluation**

 Continuous assessment (50%)

 Paper and/or final exam (50%)

**Recommended readings**

Bernard Lehmer (2005) “Climate Change, Human Water Use and Freshwater Ecosystems in

Africa: Looking toward the future” in Michele L. Thieme et al. *Freshwater Ecosystems of*

*Africa and Madagascar: A Conservation Assessment*, Island Press, Washingtom D.C.

USA pp. 86-89.

Climate Change 2001: Impacts, Adaptation and Vulnerability.

http://www.grida.no/publications/other/ipcc%5Ftar/?src=/climate/ipcc\_tar/wg2/index.htm

Ebi, K.L. et al. (2003) “Weather and Climate: Changing Human Exposures” in McMichael, A.J.

et al, *Climate Change and Human Health, Risks and Responses*, WHO Geneva, pp. 18-

42. Englewood Cliffs, New Jersey.

Houghton ,Sir J. (2004) *Global Warming: The Complete Briefing*. 3rd Edition,

CambridgeUniversity Press. 2003) Climate Change.

McMichael, A.J, Campbell-Lendrum, D., Corvalan C. et al. (Eds) (2003) *Climate Change and*

*Human Health: Risks and Responses.*WHO, Geneva.

Obasi, G.O. P. (2002) “Climate Change and Natural Resources, Policy and Management” in

UNESCO, Knowledge for Sustainable Development, an insight into the *Encyclopedia of*

*Life Support Systems*. Vol. 1, pp. 71-82.

Olmos, Santiago (2001)Vulnerability and Adaptation to Climate Change: Concepts, Issues,

Assessment Methods

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**9.4.2. GeES 613: Population and Environmental Resources Management**

Credit Hour =3(5ECTS)

**Description**:

This course outlines the relationship between population, resources and environment in the light

of population growth and socio-economic development. It discusses various geographical,

demographical and economic links between population characteristics and utilization of

resources and their implications to the environment. Specifically it deals with contemporary

debates on population and environmental resources. It also gives a detail explanation on the link

between population growth and economic development. Like wise it also asses various policies

in relation to sustainable development. Finally case studies on population and environmental

resources from developing countries will also be included in the course.

**Course delivery**

 Lectures,

 Selected readings, presentations and discussions of the reading

 Case studies,

 Assignments and seminars

**Methods of Assessment/Evaluation**:

 Seminar presentation 25%

 Assignments 25%

 Final Exam 50%

**Recommended readings**

Cochet, H., (2004), Agrarian Dynamics, population growth and resource Management. The Case

ofBurundi. GeoJournal 60:111-122

De Souza, R., J. S. Williams and F.A. B. Meyerson, (2003): Critical Links: Population, Health

and the Environment. Population Bulletin Vol. 58 No. 3 Population Reference Bureau

Goudie, A., (1990). The Human Impact on the Natural Environment. Basil Blackwell

Jones, H., (1990), Population Geography, Paul Chapman Publishing Ltd, London

Kpedekpo, G.M.K., 1982: Essentials of Demographic Analysis for Africa, Heinemann, London.

Kwesi-Gaisie, S. (1996). Demographic Transition: The Predicament of Sub-Saharan Africa.

Health Transition Review Supplement to vol. 6, pp 345 -369

Newell, C., (1984), Methods and Models in Demography, TheGuilford Press, New York.

Population Reference Bureau Staff, (2004), ‘Transitions in World Populations’

Population Bulletin.Vol 59 No.1.

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**9.4.3. GeES 615: Spatial Information Systems**

Credit Hour =3(5ECTS):- 2 hours lecture and l hour lab practice per week. Pre-requisite to all

subsequent GIS and RS related courses.

**Description**:

This course provides an intensive introduction to fundamental geographic information system

(GIS) theory, as well as practical, hands-on experience with state-of-the-art software. The course

is designed to accommodate students from a variety of academic backgrounds, and with no

previous GIS experience. This course provides an overview and introduction to the concepts,

theory, application and introductory practical skills on Geographical Information Science and

GIS software (mainly ESRI’s ArcGIS software). In addition, sources and acquisition of GIS data

(mainly on basics of remote sensing) will be discussed. Specifically the course covers topics

such as Geographic phenomena, Geographic information and spatial data types, Data processing

systems, Data quality, spatial referencing, spatial data entry and preparation, spatial data

analysis, Spatial data visualization. Classes consist of a two hour lecture each week, which

integrate live software demonstrations to illustrate the linkages between theory and practice.

Students should learn new functions on their own, and have the necessary preparation to

continue in more advanced GIS courses and GIS based research.

**Recommended knowledge**

 Basic computer sills, basic mathematics

**Hardware and Software Required**

 PC, GIS software

**Methods of delivery**

 Lecture

 Intensive practical works

 Lab exercise

 Group discussions

**Methods of Assessment/Evaluation**

 Midterm (20%), Final (60%), Practical assignment (20)

**Recommended readings**

Blok, C.A. (2005). Dynamic Visualization variables in Animation to support Montoring of

Spatial Phenomena.Enschede/Utrech, the Netherlands

Burrough, P.A. and McDonnell, R.A. 1998. Principles of Geographic Information Systems:

Spatial Information Systems and Geostatistics.Oxford University Press.

Chou, Y-H. 1997. Exploring Spatial Analysis in Geographic Information Systems.OnWord

Press.

Clarke, K.C. (2002). Geographic Information Systems and Environmental Modeling. Prentice

Hall, New Delhi.

de By, R.A. et al (2004). Principles of Geographic Information Systems. ITC, Enschede.

Heywood, I. et al (2002). An Introduction to Geographical Information Systems. Prentice

Hall,London etc.

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**9.4.4. GeES 612: Advanced Research Methodology in GeES: Methods & Techniques**

**Credit Hour =3(5ECTS):**- 2 hour lecture and 1 hour laboratory per week (on statistical

packages like SPSS).

**Description:**

The course is designed to introduce students to methods and techniques for the purpose of

building up of their practical research skill. It has two parts. Part one of this course focuses on

approaches to solving geographic problems, and addresses topics such as general notes on issues

of development,; problem discovery and process of definition in development research; general

approaches/methods to development research; guide to research proposal writing; survey

research methods **(**sampling design and sampling procedures, errors in survey research,

questionnaire design, participatory approach to research, personal interviews); experimentation;

research report writing. In addition, qualitative studies such as case studies, Ethnographic Studies

and Phenomenological Studies are some concerns among others.

The second part of the course comprises quantitative method in geography that may be

generalized into three major groups: *descriptive technique, inferential techniques and model*

*making techniques.* Descriptive techniques are used to summarize information about places,

areas, location patterns, or trends, or fluctuations through time; in order to provide a single

comprehensive index or graphs and thereby facilitate accurate descriptions and comparisons. An

inferential technique is a method of data acquisition from a sample and is essential to estimate

the extent to which a sample may be regarded as representative of the whole, or the degree to

which a collected data supports a hypothesis. Model making techniques is more advanced

method which is used to summarize reality, processes, and changes. Some of such models are

*simulation models*, *gravity model* and *generallinear models, etc*. This course focuses on the last

two techniques, by presumptuous that *descriptive technique* is simple and students have had

sufficient knowledge and practice in their undergraduate studies. Thus, how to mathematically

and statistically model geographic problems is the focus of this course. The application of

nonparametric tests, bivariate and multivariate statistical techniques and model making

techniques are central issues. Finally, Students should be equipped with techniques of reference

and bibliography writing using modern software like Mendeley, or endnotes.

**Methods of delivery**

 Lectures

 Group and individual presentations

**Methods of Assessment/Evaluation**

 Continuous assessment (50%)

 Paper and/or final exam (50%)

**Recommended readings**

Ebdon, D., 1985. Statistics in Geography. Second Ed. Basil Blackwell

Flowerdew, R., Martin, D. ,Eds., 1997. Methods in Human Geography: A Guide for students

doing a Research Project. Longman.

Hammond, R., Mccullagh, P., 1978. Quantitative Techniques in Geography: An Introduction.

Second Ed. Clrendon press, Oxford

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Lindsay, J. M., 1997. Techniques in Human Geography.Routledge.

Pal, S. K., 1982. Statistical Techniques: A Basic Approach to Geography. Tata McGraw-Hill.

New Delhi.

Spiegel, M.R., 1981.Theory and Statistics in SI Units.Fifth Ed. McGraw-Hill Book Company.

New York

Wheeler, J. O., Muller P. O., 1986. Economic Geography.Second Ed. Jon Wiley & Sons. New

York.

Zikmund, W.G., 2000. Business Research Methods.Sixth Ed. The Dryden press.

**9.4.5. GeES 710: MSc Research and Thesis Writing**

Credit Hour = 6(11ECTS)

**Description**:

After writing the research proposal and data collection in the field (if applicable) the actual data

analyses and thesis writing has to be done. This period mainly consist of individual work on the

research problem as described in the proposal. The data, which has been collected will be

analyzed, literature reviewed, conclusions drawn and final report will be prepared. Finally, the

thesis will have to be defended for the thesis examining board.

**GeES 621: Disaster Risk Management**

Credit Hour =3(5ECTS)

**Description**:

Introduction to DRM: Basic Concepts, The course covers the types of disasters, classification of

disasters, causes and consequences, principles of disaster management (risk reduction,

response, recovery), risk (vulnerability, capacity, hazard), types of vulnerability and their

characteristics, vulnerability and their contributing factors and disaster risk reduction (risk

assessment, mitigation, adaptation, preparedness) relationship between DRM and disaster

preparedness, critical elements, indicators and contingency planning.

**Method of Delivery:**

 Lecture, assignments, practical field trips, presentation, Disaster video and case study.

**Methods of Assessment/Evaluation**

 Continuous assessment (25%)

 Case study presentation (25%)

 Paper and/or final exam (50%)

**Recommended readings**

Bryan S Turner (2010). Disaster Management and Leadership (2nd edition).Routledge

International Handbooks

Integrated Research on Disaster Reduction (IRDR) (2011). The FORIN project: Forensic

investigations of disasters. Paris: International Council for Science.

Stephan, B and Selvaraj,R. (2008) .Disaster risk management systems analysis guide k

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Food and Agriculture Organization of the United Nations.Rome, 2008

UN ISDR (2004), *Living with Risk: A global review of disaster reduction initiatives* (Geneva:

UN International Strategy for Disaster Reduction), [1]

United Nations International Strategy for Disaster Reduction (2011) Global Assessment

Report on Disaster Risk Reduction: Revealing Risk, Redefining Development.

Geneva: UN/ISDR.

MukeshKapoor, (2010). Disaster Management.Saurabh Publishing House, New Delhi

NaimKapucu, Arjen Bain, (2015). Disaster Crisis Management.Tayler and Francis

Group LTD.

Wilkinson, E. (2012). Transforming disaster risk management: a political economy approach.

ODI Background Paper. London: Overseas Development Institute.

Mitchell, T., Mechler, R. and Harris, K. (2012). Tackling exposure: Placing disaster risk

management at the heart of national economic and fiscal policy. CDKN Guide.

London: Climate and Development Knowledge Network.

Wisner B et al. (2004). *At Risk: Natural hazards, people’s vulnerability and*

*disasters* (London: Routledge)

"A Needless Toll of Natural Disasters", Op-Ed, *Boston Globe*, 23 March 2006, byEric

Schwartz (UN Secretary General’s Deputy Special Envoy for Tsunami

Recovery

Mitchel, T.and Wilkinson, E.(2012) Disaster Risk Management in post-2015 policy

frameworks: Forging a more resilient future. Overseas Development Institute .London

**9.4.6. GeES 622: Early Warning Systems**

Credit Hour =3(5ECTS)

**Description**:

Understanding Early Warning System, Defining Early Warning System (EWS), and Community

Based Early Warning System, Essential features of Community Based Early Warning Systems,

Early Warning Practices and Systems. Key Elements of Early Warning Systems: Risk

Knowledge, Monitoring and Warning, Dissemination and Communication, Response

Capabilities, Essentials of EWS: Effectiveness, Efficiency, Equity, Legitimacy.

Observation and Monitoring of Hazard for Early Warning, Exploring the existing Observation

and monitoring Systems: - Upgrading of Existing Systems, Developing New Systems, Capacity

Building, Challenges. Communication and Dissemination Plan: Tools and Equipments,

Communication and Dissemination levels, Recognizing and Understanding Warning Messages,

Capacity Building, Challenges.

**Method of Delivery:**

 Lecture, assignments, term paper presentation, video, referring temperature, rain fall,

pressure maps and graphs.

**Methods of Assessment/Evaluation**

 Continuous assessment (25%)

 Presentation (25%)

 Paper and/or final exam (50%)

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**Recommended readings**

ADPC (2007). Safer Cities 20: Community-based early warning systems and evacuation:

Planning, development and testing. Community Based Early Warning System and

Evacuation: Planning, Development and Testing: Protecting Peoples’ Lives and

Properties from Flood Risks in Dagupan City, Philippines

Basher, Reid (2006)."Global early warning systems for natural hazards: systematic and

people-centered". *Philosophical Transactions of the Royal Society*.

Basher, Reid (2006). "Global early warning systems for natural hazards:

systematic and people-centered". *Philosophical Transactions of the Royal Society*.

"Japan provides early warning example". UN World Conference on Disaster Risk Reduction.

15 Mar 2015.

JochenZschau Andreas and N.Kuppers, (2003). Early warning systems for natural disaster

Reduction. Springer, Newyork

Michael H. Glantz, (2009). Early Warning Systems for climate-water-and weather-related

Hazards. United Nations University Press

Rober A. Meyers (2010). Extreme Events: Complexity in Forecasting and Early Warning.

Springer. London

Peter Walker, (1989). Famine Early Warning Systems: Victims and Destination. Earth Scan

Publishing, London

U.S. Indian Ocean Tsunami Warning System Program (USIOTS) (2007). Tsunami Warning

Center Reference Guide supported by the United States Agency for International

Development and partners, Bangkok, Thailand.

National Science and Technology Council (2005). Tsunami Risk Reduction for the United

States: A Framework for Action. A Joint Report of the Subcommittee Disaster

Reduction and the United States Group on Earth Observations.

**9.4.7. GeES 624: Policies, Strategies and Institutions in DRM**

Credit Hour =3(5ECTS)

**Description**:

This course lays the foundation for students on understanding of policy, strategies and

institutions in the DRM and humanitarian arena. It includes concepts and theories, types,

statements, policy practices, humanitarian actors involved in DRM, funding sources and

mechanisms. The course will also elucidate historical perspectives of Ethiopian DRM policies,

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strategies and institutions. It gives emphases to global policies, strategies, standards and

institutions. The course includes the concepts and definitions of policy, strategy and institutions;

type of policies, strategies and institutions in DRM, policy statements and instruments that

influence Humanitarian Sectors.

**Method of delivery**:

 Lectures, discussion, questioning and answering, readings, assignments, individual and

/or group works and presentation.

**Methods of Assessment/Evaluation**

 Group presentation (25%)

 Term paper (25%)

 Final exam (50%)

**Recommended readings**

**9.4.8. GeES 626: GIS & Remote Sensing for Hazard and Risk Assessment**

Credit Hour =3(5ECTS)

**Description**:

This course is dedicated to providing detailed topics related to hazard, vulnerability and risk

assessment with geospatial data. The detailed topics that will be covered in this course are

identified as follows:

 Spatial data requirements in disaster management

 Basic GIS and RS concepts in the context of disaster management

 Hazard, vulnerability and risk assessments with geodata (focusing on physical and

socio-economic vulnerability, and multi-hazard risk assessment)

 Participatory GIS for community-based disaster risk management

 GPS-based field data collection for hazard and vulnerability.

**Recommended knowledge**

Basic computer skills, basic mathematics, working with software like ArcGIS, ArcView, ILWIS,

ERDAS, etc.

**Hardware and Software Requirements**

 PC, GIS and Image Processing Software

**Methods of delivery**

 Lecture

 Intensive practical works

 Lab exercise

 Group discussions

 Field works

**Methods of Assessment/Evaluation**

 Assignments (both practical and theoretical) (300%), Exam (30%), Field work project

(30), Presentation (10%)

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**Recommended readings**

A.L.,Masser, I.,Rengers, N.,Ottens,Urban**disaster** management : a case study of earthquake **risk**

assessment in Cartago, Costa Rica *Montoya, H.F.L.*

Chaudhry. B.S., Arya. V.S., Babu. T.P., Ruhal.D.S., (1999).“ Satellite application for monitoring

flood hazard in Haryana, India: A case study” In: Nieuwenhuis G.J.A., Vaughan. R.A., and

Molenaar. M (eds) Operational remote sensing for sustainable development.,A.A.Balkema

publishers, Rotterdam The Netherlands., pp.281-284.

Chen, K., Blong, R. and Jacobson, C. (2003).Environmental Management, “Towards an

Integrated Approach to Natural Hazards Risk Assessment Using GIS: With Reference to

Bushfires”. Springer New York: Volume31, Number 4.

Coppock Terry, J., (1995). “GIS & natural hazards: An overview from a GIS perspective”., In: A

Carrara and F.Guzzetti.(eds) Geographical Information System in assessing natural hazards.

Kluwer academics publishers, The Netherlands., pp.21-34.

Joerin, F., Consuegra, D., and Vitalini, F., (1995). “Flood delineation and impact assessment in

agricultural land using GIS technology”., In: A Carrara and F. Guzzetti. (eds) Geographical

Information System in assessing natural hazards., Kluwer academics publishers, The

Netherlands., pp.177-198.

Lanza, L., and Siccardi, F., (1995) “The role of GIS as a tool for the assessment of flood hazard

at the regional scale” In: Geographical Information System in assessing natural hazards.,(eds) A

Carrara and F.Guzzetti., Kluwer academics publishers, The Netherlands., pp.199-217.

Spiteri, A (1996). .Remote sensing '96 : integrated applications for **risk** assessment and **disaster**

prevention for the mediterranean : proceedings of the 16th EARSeL symposium Malta 20 - 23

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**9.4.9. COMP 631: Computer Programming**

Credit Hour =3(5 ECTS):- l hour lecture and 2 hours laboratory

**Description**:

Fundamental concepts of Computer Programming; Introduction to problem solving and

algorithms; Programming Languages, Compiler based programming languages and Interpreter

based programming languages; Program constructs and compilation; Basic Elements of

Programming [data types(intrinsic and user-defined), variables, variables initialization,

assignment statements, control statements and loops; Input and output statements]; files systems

(reading and writing from and to files); Intrinsic and user-defined subprograms (procedures and

functions); Principles of Object oriented (OO) programming; OO programming languages

general overview; Basic programming in Python/C++; program construct, data types, object,

classes, methods; Operators and expressions; Control Structures (Loops and Sequences); Types

and Functions; data structures; Abstract data type: Records, structure definition statement,

Strings; Inheritance and polymorphism; Files: Main operations of a sequential file: open, reset,

rewrite, read, write, compiling debugging and Error Handling.

**Hardware and Software Requirements**

 PC’s,

**Methods of delivery**

 Lecture

 Intensive practical works (the course is dominantly practice based)

 Lab exercise

**Methods of Assessment/Evaluation**

 Home works (15%), Midterm (20%), Final (30%), Project presentation (30%)

**Recommended Readings**

 Learning Geospatial Analysis with Python, J. Lawhead, Packt Publishing.

 Python for Data Analysis, W. McKinney, O'Really.

 Python Geospatial Development, 2nd edition, E. Westra, Packt Publishing.

 Python scripting for ArcGis, P.A. Zandbergen, ESRI Press.

**9.4.10. GeES 632: Advanced GIS**

Credit Hour =3(5ECTS)2 hours lecture and 2 hour laboratory.

**Description**:

This course further develops hands-on skills with industry-standard GIS software beyond the

level acquired in Spatial information systems for application in a wide variety of areas including

urban infrastructure management, marketing and location analysis, environmental management,

geologic and geophysical analysis and the social sciences.

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In particular, it aims to make the transition from GIS as a descriptive, data management tool to

GIS as an analytical research tool for drawing policy-relevant conclusions from vector data..

Upon completion of ***Advanced GIS***, you should have a thorough understanding of the

fundamentals of a modern GIS software environment and the necessary applied skills to

independently complete a GIS project including establishing objectives, reviewing literature

and/or practices elsewhere, identifying, acquiring, converting and integrating the required data,

creating GIS layers (themes) in multiple different formats, editing, correcting and modifying GIS

layers, conducting geographic analyses, customizing software applications, and drawing and

presenting legitimate conclusions and results. The course will cover topics such as:

 GIS Data Processing using *ArcToolbox* and *Modelbuilder*

 Spatial Analysis using *ArcMap*

 Analyzing Tables using *ArcMap*

 Georeferencing

 CAD Conversion

 Creating & Editing Geodata: Lines and Line Topology

 Networks and Network Modeling

 Polygon Processing and Analysis

 Customizing ArcGIS

 Point Pattern Analysis and Spatial Statistics

 3D visualization of geospatial data

**Hardware and Software Requirements**

 PC’s, (preferably one system per student) with ArcGIS software, and internet access.

**Methods of delivery**

 Lecture

 Intensive practical works (the course is dominantly practice based)

 Lab exercise

 Field works (Data collection and verification)

 Group discussions and presentations

 Field Survey

**Methods of Assessment/Evaluation**

 Home works (15%), Midterm (20%), Final (30%), Project presentation (30%)

**Recommended readings**

Bernhardsen, T. 1999. Geographic Information Systems: An Introduction.2nd Edition.Wiley.

Blok, C.A. (2005). Dynamic Visualization variables in Animation to support Montoring of

Spatial Phenomena.Enschede/Utrech, the Netherlands

Burrough, P.A. and McDonnell, R.A. 1998. Principles of Geographic Information Systems:

Spatial Information Systems and Geostatistics.Oxford University Press.

Chou, Y-H. 1997. Exploring Spatial Analysis in Geographic Information Systems.OnWord

Press.

Clarke, K.C. (2002). Geographic Information Systems and Environmental Modeling. Prentice

Hall, New Delhi.

de By, R.A. et al (2004). Principles of Geographic Information Systems. ITC, Enschede

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Delaney, J. 1999. Geographical Information Systems: An Introduction.Oxford.

De Mers, M.N. 2000.Fundamentals of Geographic Information Systems.Wiley.

Heywood, I. et al (2002). An Introduction to Geographical Information Systems. Prentice

Hall,London etc.

Kennedy, M. 1996. The Global Positioning System and GIS.Ann Arbor Press.

**9.4.11. GeES 634: Advanced Remote Sensing**

Credit Hour =3(5ECTS):- 2 hours lecture and 1 hour laboratory.

**Description**:

In the previous course of “Fundamentals of Remote sensing” you have tried to see the basic

principles of remote sensing. The final remote sensing process is completed by the analysis of

the data using image interpretation techniques. Some key elements, or cues from the imagery,

such as shape, size, pattern, tone or colour, shadow and association, are used to identify a variety

of features on earth. The techniques of remote sensing and image interpretation yield valuable

information on earth resources. This course therefore provides concepts of image interpretation.

You will also become familiar with the basic practices of image processing and analysis. This

course will cover the following topics:

 Digital Image processing –concepts

 Digital image representation,

 Visual perception, sampling and quantization,

 Pixel connectivity,

 Fourier transforms,

 Image enhancement,

 Classification

 Filtering,

 Image segmentation,

 Edge detection,

 Representation schemes, descriptors, morphology, recognition and interpretation.

 Applications and case study

**Hardware and Software Requirements**

 PC’s, (preferably one system per student) with image processing software like ERDAS

and internet access.

**Methods of delivery**

 Lecture

 Intensive practical works (the course is dominantly practice based)

 Lab exercise

 Field works (Data collection and verification)

 Group discussions and presentations

**Methods of Assessment/Evaluation**

 Home works (15%), Midterm (20%), Final (30%), Project presentation (30%)

**Recommended readings**

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Arnold, R.H., 1997, Interpretation of Airphotos and Remotely Sensed Images, Prentice-Hall,

New York.

Avery, T.E. and G.L. Berlin, 1992, Fundamentals of Remote Sensing and Airphoto

Interpretation, Fifth Edition, Macmillan, New York.

Bakkar, W.H. et al (2004). Principles of Remote Sensing. ITC, the

Netherlands.

Curra, P.J. (1986). Principles of Remote Sensing. John Wiley & Sons, New

York.

Jensen, J.R., 2007, “Remote Sensing of the Environment: An Earth

Resource Perspective”, 2nd Edition, Prentice Hall.

Jensen, J.R., 2004, “Introductory Digital Image Processing – A Remote

Sensing Perspective”, 3rd Edition, Prentice Hall.

Lillesand, T.M. and Kiefer, R.W., 2004, “Remote Sensing and Image

Interpretation”, 5th Edition, John Wiley & Sons.

**9.4.12. GeES 636: Principle of Spatial Database**

Credit Hour =3(5ECTS):- 1 hours lecture and 2 hours laboratory

**Description**:

Databases in context; DBMS software packages; Relational data model; Set theory and

mathematical logic as a foundation for database querying; Database querying using SQL/Oracle;

Database design.

**Hardware and Software Requirements**

 PC’s

**Methods of delivery**

 Lecture

 practical works (the course is dominantly practice based)

 Lab exercise

**Methods of Assessment/Evaluation**

 Home works (20%), assignments (20%), Final (30%), Project presentation (30%)

**Recommended readings**

 Tolpekin, V. & Stein, A. (eds) (2013): The core of GI Science: a systems-based

approach, ITC, Enschede, The Netherlands.

 Kang-Tsung Chang 2002, ‘Introduction to Geographic Information Systems’ Tata

McGraw Hill, New Delhi.

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 C. P. Lo and Albert K. W. Yeung 2005 “Concepts and Techniques of Geographic

Information Systems” Prentice Hall of India, New Delhi.

 Burrough Peter A. and Rachael McDonnell -Principles of Geographical Information

Systems, Oxford University Press, New York, 1998.

 Maguire David J., Goodchild Michael F., P. A. Longley and Rhind David W. -

Geographical Information Systems: Principles, Techniques, Management and

Applications, Longman Group, U. K, 1991.

 Goodchild M. F. and Karen K. Kemp – Developing a Curriculum in GIS: The NCGIA

Core Curriculum Project, University of California, Santa, Barbara 1990.

 Ian Heywood, Sarah Cornelius and Steve Carver – An Introduction to GIS, Longman,

New York, 2000.

 Mishra H. C. – A Handbook on GIS, GIS India, Hyderabad, 2000.

 Smith T.R. and Piquet D. - GIS London Press, London, 1985.

 Taylor DRF – GIS: The Micro Computer and Modern Cartography, Pergamon Press,

Oxford, 1991.

 C. P. Lo, Yeung and Albert K. W. - Concepts & Techniques of Geographical Information

Systems, Prentice Hall of India, New Delhi, 2003.

 Quihao Weng – Remote Sensing and GIS Integration: Theories, Methods and

Applications, McGraw Hill, 2010.

 Gottfried Konecny – Geoinformation: Remote Sensing, Photogrammetry and Geographic

Information System, Taylor and Francis, Newyork and London, 2003.

 Sahab Fazal – GIS Basics, New Age International Publisher, 2008.

 Rolf A.de By (Ed) – Principles of Geographic Information System: An Introductory Text

Book, ITC Educational Textbook Series, Netherland, 2001.

**9.4.13. GeES 641: Dryland Ecosystems**

Credit Hour =3(5ECTS)

**Description**:

This course deals about Location, Geology, Geomorphology and soils of Drylands; Climate and

Hydrology in Drylands; Dryland Cultures and Population characteristics; and Dryland

Economies.

**Methods of delivery**

 Lecture

 Group discussion

 Field visit

**Methods of Assessment/Evaluation**

 Field report (35%), assignments (15%), Final (50%)

**Recommended readings**

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 Adejuwon, J. 2006. Food Security, Climate Variability and Climate Change in Sub

Saharan West Africa. AIACC Final Reports: Project No. AF 23. Washington, DC, USA:

The International START Secretariat.

 Bates, B.C.; Kundzewicz, Z. W.; Wu, S.; Palutikof, J. P. (eds.) 2008. Climate Change and

Water: Technical Paper of the Intergovernmental Panel on Climate Change. Geneva:

IPCC Secretariat. 210 pp.

 BCPR (UNDP Bureau for Crisis Prevention and Recovery). 2004. Reducing Disaster

Risk: A Challenge forn Development.

 Below, R.; Grover-Kopec, E.; Dilley, M. 2007. Documenting Drought-Related Disasters.

The Journal of Environment & Development 16(3): 328-344.

 Bernardino, M. C.; Corte Real, J. 2004. A Drought Risk Assessment for Europe.

Geophysical Research Abstracts 6: 03742.

 Burke, E. J.; Brown, S. J.; Christidis, N. 2006. Modeling the Recent Evolution of Global

Drought and Projections for the Twenty-First Century with the Hadley Centre Climate

Model. Journal of Hydrometeorology 7: 1113–1125.

**9.4.14. GeES 642: Regional Development Policy and Planning**

Credit Hour =3(5ECTS)

**Description**:

This course deals with three major aspects. Firstly, it deals wit issues and problems in regional

and locals development. It focuses on issues like unequal regional development, problem

regions, urban agglomeration etc. Second, it deals with regional development policies and

strategies. This part begins by conceptualizing policy in general and public policy in particular.

Regional policies related to decentralization policy, regional industrial policy, rural regional

policy, urban development policy, environmental management, institutional and human

development policy will be examined. On top of this policy instruments such as infrastructure,

fiscal incentives and etc will be examined. This section also draws on illustrative examples of

different regional policies in different parts of the world. Finally, this course deals with planning

issues for regional development including planning styles, methodological and organizational

principles and problems. The course mainly addresses :Issues and problems in regional and local

development; Regional development policies and strategies; Regional development policy

instruments; Case studies on different regional policies in different parts of the world; Planning

issues for regional development.

**Method of delivery**

 Seminar presentation

 Selected readings, presentations and discussions of the reading

 Group work

 Individual assignment

**Methods of Assessment**

 Seminar presentation 20 %

 Presentation and discussions of readings 20 %

 Group Work 15%

 Individual assignment 20%

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 Exam 25%

**Recommended readings**

Amin Ash (1999). An institutional perspective on regional economic development. International

journal of urban and regional research v. 23

Cecilia Tacoli (1998) Rural urban Interactions: A guide to the literature environment and

urbanization, V.10, No.1

Giles Clarke (1994) Reappraising urban planning process as an instrument for sustainable urban

development and managementstudies, V32, No 4-5

Hihorst Jos (1998) Industrialization and Local \regional development revisited: development and

change

Mike Douglas (1997) A regional net work Strategy for reciprocal rural urban linkage

Nancy Chen and et al (1998) what do we know about recent trends in urbanization? In

Bilosborow R.E(ed) Migration, urbanization and development: New

directions and issues, UNFPA proceedings of the symposium on

internal migration and urbanization in developing countries. New york.

Park Shi- Hyun and Heo Jang, (2000) Toward a new rural development program: The rural

settlement development project. Journal of Rural Development, V.23

TegegenGebreegziabher( 1998). The influence of decentralization on some aspects of local and

regional development planning in Ethiopia. Eastern Africa Social

science Research Review, 14(1)

**9.4.15. GeES 644: Dryland Natural Resources Management**

Credit Hour =2 (3ECTS)

**Description**:

Major topics included in this course include: Introduction to Natural Resources Management;

Water resources management in Drylands; Land and land-based resources management in

Drylands; Livestock resource management Drylands; Climate change adaptation in Drylands.

**Methods of delivery**

 Lecture

 Group discussion

 Field visit

**Methods of Assessment/Evaluation**

 Field report (35%), assignments (15%), Final (50%)

**Recommended reading**

Cochet, H., (2004), Agrarian Dynamics, population growth and resource Management. The Case

ofBurundi. GeoJournal 60:111-122

De Souza, R., J. S. Williams and F.A. B. Meyerson, (2003): Critical Links: Population, Health

and the Environment. Population Bulletin Vol. 58 No. 3 Population Reference Bureau

Goudie, A., (1990). The Human Impact on the Natural Environment. Basil Blackwell

Jones, H., (1990), Population Geography, Paul Chapman Publishing Ltd, London

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Kpedekpo, G.M.K., 1982: Essentials of Demographic Analysis for Africa, Heinemann, London.

Kwesi-Gaisie, S. (1996). Demographic Transition: The Predicament of Sub-Saharan Africa.

Health Transition Review Supplement to vol. 6, pp 345 -369

Newell, C., (1984), Methods and Models in Demography, TheGuilford Press, New York.

Population Reference Bureau Staff, (2004), ‘Transitions in World Populations’

Population Bulletin.Vol 59 No.1.

**9.4.16. GeES 646: Integrated Dryland Development Planning**

Credit Hour =3(5ECTS)

**Description**:

The course mainly concerns on: Theories and Principles of Development; Regional planning

theories; Dryland Development options; Integrated Development Planning Design; Integrated

Dryland Development Planning.

**Methods of delivery**

 Lecture

 Group discussion

**Methods of Assessment/Evaluation**

 Presentation (30%), assignments (20%), Final (50%)

**Recommended reading**

Abegaz G., Muleta S. 2003. *Sustainable land use forum. Training of trainers*

*on integrated watershed management,* Addis Ababa, Ethiopia, p109.

Brooks, K.N., P.F. Ffolliott, H.M. Gregersen and L.F. DeBano. 2003. *Hydrology and*

*the Management of Watersheds*. 3 ed. Iowa State Press. Ames.

Buck, L.E., J.P. Lassoie and E.C.M. Fernandes (eds.). 1998. *Agroforestry in*

*sustainable agricultural systems*. CRC Press, Boca Raton.

Daba, S., Reiger, W., Strauss, P., 2003. Assessment of gully erosion in eastern

Ethiopia using photogrammetric techniques, catena 50, 273-291.

FAO., 1996. Guidelines for planning irrigation and drainage investment project.

Food and Agricultural organization of the United Nations, Rome, Italy.

Gregersen, H.M., P.F. Ffolliott and K.N. Brooks. 2007. *Integrated*

*Watershed Management – Connecting People to their Land and Water.*

CAB International – UK.

Hurni, H., 1985. Soil conservation manual for Ethiopia: a field manual for

Conservation implementation. Soil Conservation Research Project, Addis Ababa.

MacDicken, K.G., and N.T. Vergara. 1989. *Agroforestry: classification and*

*management*. New York: John Wiley & Sons.

Langbein, W.B., Schumm, S.A., 1958. *Yield of sediment in relation to mean*

*annual precipitation.* Trans. Amer. Geophysics 39, 1076-1084.

Smaling, E.M.A., Fresco, L.O., 1993. *A decision support model for monitoring*

*nutrient balances under agricultural land uses*. Geoderma 60, 235–256.130

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Sonneveld, B.G.J.S., 2002*. Land under pressure: the impact of water erosion on*

*Food production in Ethiopia*. Shaker Publishing, Masstricht, The Netherlands.

Yirdaw, E., 1996. *Deforestation and Forest Plantations in Ethiopia. In*

*Sustainable Forestry Challenges for Developing Countries*, edited by P.

M. Palo and G. Mery, 327–42.

**9.4.17. GeES 648: Seminar on Best Practices in Integrated Dryland Development**

**Planning**

Credit Hour =1 (2ECTS)

**Description**:

In this course the students will learn how to evaluate scientific papers. Then, they are required to

evaluate recent publications in journals, newspapers, and magazines; analyze critically for

scientific content, and assess their potential application and implications for dryland regions.

Students are required to present the results of their project, research, or literature review. The

seminar will focus on current trends, issues and controversies in: land management; erosion;

environmental monitoring; climate change; theory of development; land administration (rural,

urban), etc, in context of drylands. The seminar project will also include presentation and

documentation on certain topics (of students’ interest) in collaboration with different

stakeholders emphasizing on best practices of development activities in dryland areas.

**Methods of delivery**

 Lecture and Group discussions

**Methods of Assessment/Evaluation**

 Home works (20%), paper (30%), Project presentation (50%)

**GeES 651: Fluvial Geomorphology**

Credit Hour =3(5ECTS)

**Description**:

This course deals on key concepts of fluvial geomorphology in, which introduces the huge

variety of fluvial forms that are seen worldwide followed by

 The fluvial system, examining equilibrium, scale and the complex interrelationships that

exist between variables.

 Relevant aspects of hydrology, with particular emphasis on the characteristicsof different

flow regimes, flood frequency–magnitude relationships and channel-forming flows.

 A general discussion of sediment sources which covers weathering, mass wasting and

slope erosion processes.

 Explanation on how sediment is transferred through the fluvial system.

 Flow processes within the channel

 processes oferosion, sediment transport and deposition

 Channel form and the natureof morphological adjustments and the space and time scales

over which they take place.

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 The response of fluvial systems to environmental change(climate change, human activity,

tectonics and changes in base level) and Management of river channels.

**Methods of delivery**

 Lecture

 Group discussion

 Field visit

**Methods of Assessment/Evaluation**

 Field report (35%), assignments (15%), Final (50%)

**9.4.18. GeES 652: Surface and Groundwater Hydrology**

Credit Hour =3(5ECTS)

**Description**:

Generally, this course deals on the circulation of water in the hydrosphere, the physical and

chemical characteristics of water and the interactions between the water cycle and the

environment. This course, however, will be limited to the so-called surface-hydrology, mainly

focuses on the water balance of the surface waters – being the water in rivers and lakes – and on

the processes that are relevant to the transformation of precipitation to river runoff. Hereby, little

attention will be paid neither to the atmospheric processes nor to the ground water processes.

Specifically the following topics will be covered.

 Water and sustainable development

 Practical applications of hydrology

 The hydrologic cycle

 The hydrologic system

 The water balance (models in water balance computation)

 Measurement and estimation techniques of hydrological elements

**Methods of delivery**

 Lecture

 Group discussion

 Field visit

**Methods of Assessment/Evaluation**

 Field report (35%), assignments (15%), Final (50%)

**9.4.19. GeES 654: Integrated Watershed Management**

Credit Hour =3(5ECTS):- 3 hour lecture and 1 hour labratory

**Description**:

This course examines principles, procedures, methods, and applications of Integrated Watershed

Management such as terrain analysis, stream network delineation, soil erosion control and

analysis, river basin management, anthropogenic changes to watershed hydrology, integrated

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watershed restoration, elements of agricultural hydrology, sustaining on-site productivity;

reducing soil movement off-site (sedimentation); improving stream flow patterns and volume;

improving water quality.The course also contains the following topics:Watershed characteristics

and landforms, Principles of watershed management; Watershed hydrology,Soil erosion,

sediment yield and soil conservation, Stream Ecology, Watershed management towards rural

communities, etc.

**Methods of delivery**

 Lectures

 Group and individual presentations

 Field visit

**Methods of Assessment/Evaluation**

 Continuous assessment (written report and or term paper) (50%)

 Paper and/or final exam (50%)

**Recommended readings**

Abegaz G., Muleta S. 2003. *Sustainable land use forum. Training of trainers*

*on integrated watershed management,*Addis Ababa, Ethiopia, p109.

Brooks, K.N., P.F. Ffolliott, H.M. Gregersen and L.F. DeBano. 2003. *Hydrology and*

*the Management of Watersheds*. 3 ed. Iowa State Press.Ames.

Buck, L.E., J.P. Lassoie and E.C.M. Fernandes (eds.). 1998. *Agroforestry in*

*sustainable agricultural systems*. CRC Press, Boca Raton.

Daba, S., Reiger, W., Strauss, P., 2003. Assessment of gully erosion in eastern

Ethiopia using photogrammetric techniques, catena 50, 273-291.

FAO., 1996. Guidelines for planning irrigation and drainage investment project.

Food and Agricultural organization of the United Nations, Rome, Italy.

Gregersen, H.M., P.F. Ffolliott and K.N. Brooks. 2007. *Integrated*

*Watershed Management – Connecting People to their Land and Water.*

CAB International – UK.

Hurni, H., 1985. Soil conservation manual for Ethiopia: a field manual for

Conservation implementation. Soil Conservation Research Project, Addis Ababa.

MacDicken, K.G., and N.T. Vergara. 1989. *Agroforestry: classification and*

*management*. New York: John Wiley & Sons.

Langbein, W.B., Schumm, S.A., 1958.*Yield of sediment in relation to mean*

*annual precipitation.* Trans. Amer. Geophysics 39, 1076-1084.

Smaling, E.M.A., Fresco, L.O., 1993. *A decision support model for monitoring*

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*nutrient balances under agricultural land uses*. Geoderma 60, 235–256.130

Sonneveld, B.G.J.S., 2002*. Land under pressure: the impact of water erosion on*

*Food production in Ethiopia*. Shaker Publishing, Masstricht, TheNetherlands.

Yirdaw, E., 1996. *Deforestation and Forest Plantations in Ethiopia. In*

*Sustainable Forestry Challenges for Developing Countries*, edited by P.

M. Palo and G. Mery, 327–42.

**9.4.20. GeES 656: GIS and RS for Hydrology and Watershed Management**

Credit Hour =3(5ECTS): 2 hours Lecture and 1hour Laboratory

**Description**:

The students will become familiar with advanced topics and emerging scientific issues pertinent

to hydrologic science. As such, this course moves from cartographic modelling through

advanced spatial analysis and geostatistics to the application of distributed hydrologic modelling.

Topics include watershed assessment for erosion potential and grazing capacity, appropriate

interpolation techniques for rainfall and elevation data, kriging and the derivation of spatial

statistics, impact of scale and error on watershed analyses, and integration of lumped and

distributed rainfall-runoff models with GIS. The detailed topics are listed below:

 The Arc/Info Data Model; Re-introduction of Basic Skills

 Land classification

 Capability assessment

 Interpolation techniques; inverse distance weighting, spline, Thiessen

 Advanced interpolation; kriging

 Hydrologically correct digital elevation models (DEMs)

 Improved DEMs; SAR, orthophotography

 Spatial statistics

 Lumped runoff modeling; impact of GIS resolution on results

 Influence of interpolated surfaces on research

 GIS and physically-based distributed modelling

**Recommended knowledge**

 Basic computer skills, basic mathematics, working with software like ArcGIS, ArcView,

ILWIS, ERDAS, etc.

**Hardware and Software Requirements**

 PC, GIS and Image Processing Software

**Methods of delivery**

 Lecture

 Intensive practical works

 Lab exercise

 Group discussions

 Field works

**Methods of Assessment**

65

 Assignments (both practical and theoretical) (300%), Exam (30%), Field work project

(30), Presentation (10%)

**Recommended readings**

Beven, K.J. and I.D. Moore (Editors). 1992. Terrain Analysis and Distributed

ModellinginHydrology. John Wiley & Sons, New York.

Kalma, J.D. and M. Sivapalan (Editors). 1995. Scale Issues In Hydrological Modelling. John

Wiley & Sons, New York.

Warren, S.D., V.E. Diersing, P.J. Thompson and W. D. Goran. 1989. An erosion-based land

classification system for military installations. Environmental Management 13(2): 251-257.

Djokic, D., and D. R. Maidment, 1992. Application of GIS network routines for water flow and

transport. Journal of Water Resources Plannning and Management 119(2): 229-245.

Tarboton, D.G., R.L. Bras and I. Rodriguez-Iturbe. 1992. On extraction of channel networks

from digital elevation data. In: Beven, K.J. and I.D. Moore (Editors). 1992. Terrain Analysis and

Distributed Modelling in Hydrology. John Wiley & Sons, New York. pp. 85-104.

Stuede, M.M. and D.M. Johnston. 1990. Runoff volume estimation using GIS techniques. Water

Resources Bulletin 26(4): 611-620.

Bhaskar, N. R, W. P. James, and R. S. Devulapalli, 1992.Hydrologic parameter representation

estimation using geographic information system. Journal of Water Resources Planning and

Management 118(5):492-512.

Blaszczynski, J., 1994. Watershed soil erosion, runoff and sediment yield prediction using

geographic information systems: a manual of GIS procedures. USDI-BLM Report BLM/SC/ST-

94/006+7000.

**9.4.21. GeES 661: Urban and Rural Development Linkage**

Credit Hour =3(5ECTS)

**Description**:

This course focuses on rural-urban linkages and their potential for rural development in

developing countries. It builds a theoretical foundation for understanding relationships and

interplay between urban and rural sectors. It further identifies potential areas for consideration in

development policy for enhancing rural development through rural-urban linkages. This course

gives a detail explanation on:An over view of rural urban linkages; What are rural urban linkage;

Why do we give a special emphasis; Contemporary rural urban policy approach;The value added

of a rural-urban linkage perspective in policy; Successful rural urban policies.

**Method of delivery**:

 Lectures,

 supportive selected readings,

 presentations and discussions of the reading and case studies,

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 assignments and seminars will be used in the course

 Field experience

**Methods of Assessment/Evaluation**:

 Presentation of case studies 20 %

 Field report 15%

 Seminars 25 %

 Exam 40%

**Recommended readings**

Bah, M, Cisse, S, Diyamett, B, Diallo, G, Lerise, F, Okpara, E Tacoli, C, and Okalli, D

(2003), “Changing rural-urban linkages in Mali, Nigeria and Tanzania” in *Environment*

*and Urbanization*Vol 15 (1):13-24.

Bakers, J. and P.O. Pederson (Eds), (1992), *The Rural – Urban Interface in Africa*

*Expansion and Adaptation.*NordiskaAfrikainstitutet, Uppsala.

Ellis, Frank (2000), *Rural Livelihoods and Diversity in Developing Countries*.Oxford

University Press.

Renkow, M; Dale Hoover (2000), “Commuting, Migration, and Rural-Urban Population

Dynamics” *Journal of Regional Science*, Vol 40 (2),261-287.

Start D (2001), “The Rise and Fall of the Rural Non-farm Economy, Poverty Impacts and

policy Options”, *Development Policy Review* 19(4), 491-505.

Tacoli, C, 1998, Rural – Urban Interaction.A Guide to the Literature.*Environment and*

*Urbanization,*vol 10 No. 1 pp 147 – 166.

Tacoli, C, (1998) *Bridging the Divide: Rural-Urban interactions and Livelihood*

*Strategies*.IIED.

**9.4.22. GeES 664: Urban Planning and Management in a Globalized World**

Credit Hour =3(5ECTS)

**Description**:

This course focuses on rapid urbanization in the 21st Millennium, the impact of globalization,

emerging urban planning approaches and urban governance in view of ecological urbanization

and sustainable cities development and management. Thus this course gives due emphasis to the

link between urbanization and globalization, urban impacts of globalization, emerging

approaches to globalization, strive to ensure Urban Development Prospectus and at last deals

with ecological urbanization and how to build sustainable Cities. This course strives to give a

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detail explanation on: The salient links between urbanization and globalization; Urban impacts of

globalization; Emerging approaches to globalization; Urban development prospects; Ecological

urbanization to build sustainable cities.

**Method of delivery**

 Active Lecturing

 Seminars,

 Supportive selected readings,

 Presentations and discussions of the reading,

 Group Assignments will be used in the course

**Methods of Assessment**

 Assignments both (individual and group) 25%

 Seminars 20 %

 Presentation on selected readings 15%

 Class work 15%

 Exam 25 %

**Recommended readings**

Beall, J. (2002). “Globalization and Social exclusion in cities: framing the debate with lessons

from Africa and Asia” in *Environment and Urbanization,* Vol.14, No.1, pp.41-51.

ILO, (2004) *A fair globalization, The Role of the ILO*. Report of the Director General on the

World Commission on the Social Dimension of Globalization.

Rakodi, C. (1997). *The Urban Challenge in Africa: Growth and Management of its large*

*Cities.* United Nations University Press, Tokyo, New York and Paris.

Sassen, S. (2002).“Locating cities on global circuits”, in *Environment and Urbanization,*Vol .14,

No.1, pp.13-30.

UN-Habitat.(2001). *Cities in A Globalizing World*. Global Report on human Settlements

2001.Earthscan, Publications Limited, London 2nd Sterling, VA.

Van Vliet, W. (2002).“Cities in a globalizing World: from engines of growth to agents of

change” in *Environment and Urbanization*Vol 14 (1) 31-40.

**9.4.23. GeES 666: Urban Governance**

Credit Hour =3(5ECTS)

**Description**:

**Course description**

The course urban governance broadly studied under two umbrellas.Part one set a framework to

position good urban governance tools within the broader context of promoting sustainable

urbanization. This part deals with the need for good urban governance as a prerequisite for

sustainable urbanization. Achieving good urban governance through translating urban

governance principlesinto practical measures; measuring the quality of urban governance

through urban governance indicators, use of local and global indexes; developing a

frameworkfor participatory decision making to enhance sustainable urban development efforts at

various stages of public policy formulation, implementation and monitoring are the concepts

incorporated in this course. This course focuses on tools to support transparencyin local

governance: assessment, access to information, ethics and integrity, institutional reforms;

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Participatory budgetingas a mechanism to promote inclusive urban governance, Dimensions of

participatory budgeting, its contribution to good urban governance and achieving MDGs; Design

of local governance capacity building programmes in supporting sustainable urban development.

This course mainly address: The need for Urban governance; Achieving good urban governance;

Measuring the quality of urban governance; Inclusive urban governance; Transparency in local

governance; Design of local governance capacity building programs.

**Course delivery**

 Lectures,

 Selected readings, presentations and discussions of the reading

 Case studies,

 Assignments and seminars will be used in the course

**Methods of Assessment/Evaluation**

 Seminar presentation 20%

 Case studies 20%

 Class work 15%

 Term Paper 25%

 Final exam 20%

**Recommended readings**

Badcock, B. (2002) Making cense of cities: A Geographical survey.Arnold, London

Bounds,M. (2004) Urban Social Theory: City, self and Society. Oxford university press,

Newyork.

Collingwood, V. (2002) Good governance and the World Bank.NuffieldCollege,

Oxforduniversity. Viewed online (http://www.ucl.ac/uk/dpuprojects/

drivers\_urb\_change/urb)

Devas, N. (1999). Who run cities? Relation ship between urban governance, service Delivery

and poverty. . Theme paper 4: International Development Departement, School of public

policy, university of Birmingham, Birmingham.

Hall, T. (1998) Urban Geography.Routledge Contemporary Human Geography

Series.Routledge, London.

Kaplan, D.H., Wheeler, J.O and Holloway, S.R. (2004) Urban Geography. John Wiley and Sons,

New York.

Nick Devas**,** 2007**.** Urban Governance Voice and Poverty in the Developing University of

Birmingham.

Pacione, M. (2005). Urban Geography, A global perspective, 2nd ed. Rouledge, New York

Potter, R. and Lioyd-Evas, S. (1998) The city in developing world. Addison Wesley Longman.

Tannerfeldt, G. and Ljung, P. (2006). More urban less poor: An introduction to urban

development and management, Earthscan publishing, London.

Tostensen, A., Tvedten, I. and Vaa M. (2001) The urban crisis, governance and associational

Life. In Tostensen, A., Tvedten, I. and Vaa M. (Eds) Associational Life in Africa Cities:

popular responses to the urban crisis. NordiskaAfrikanistituet, Stockholm, 7-26.

**9.4.24. GeES 671: Integrated Land use Planning and Management**

Credit Hour =3(5ECTS)

**Description**:

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The course will provide with a wider view of integrated land use planning concepts, practice and

paradigm shift in the context of developed and developing countries with the aim of enabling

student to deal with the linkages and interfaces of the different plans with land development .

The content of the course includes integrated planning, structure planning, land use planning,

local level planning, land budgeting, land development, land management, planning cycle,

practicing project.

**Method of delivery**

 Active Lecturing

 Presentations and discussions of the reading,

 Group Assignments will be used in the course

 Field experience

**Methods of Assessment**

 Assignments both (individual and group) 15%

 Project work (20%)

 Field report (15%)

 Final Exam 50 %

**Recommended reading**

Borrough and McDonal, 1998. GIS Method land capability classification method

Dent and Young, 1980; The USDA general land capability classification method (LCC)

FAO, 1983, Land use planning and environmental Impact Assessment

FAO, 1984-; Forestry land use planning

FAO, 1985; Irrigation land use planning

FAO, 1976, 1983, 1984, 1985, 1991; FAO suitability method.

McRae and Burnham, 1981; The USDA general land capability classification method (LCC).

**9.4.25. GeES 672: System Development and Analysis for land Administration**

Credit Hour =3(5ECTS)

**Description**:

The course will provide system development tools for efficient land administration. These

include system design, system improvement, and problem solving, follow-up systems.The

content of the course includes concepts and techniques in system development, system for land

administration, system investigation, systems analysis and design, Object-oriented analysis,

system and the environments, simulation and testing, training and transition, operations and

maintenance, life cycle, management and control, practicing project etc.

**Method of delivery**

 Active Lecturing

 Presentations and discussions of the reading,

 Group Assignments will be used in the course

**Methods of Assessment**

70

 Assignments both (individual and group) 25%

 Project work (25%)

 Final Exam 50 %

**9.4.26. GeES 674: Urban land and good governance**

Credit Hour =3(5ECTS)

**Description**:

The course provides concepts of good governance and its applications in the urban land sector.

The course will provide also ethical rules and regulations as well as customer services delivery

methods.The content of the course includes concepts of good governance, urban good

governance in Ethiopia, methods of customer services delivery, efficiencies measurement,

ethical rules and regulations of the land sector.

**Method of delivery**

 Active Lecturing

 Presentations and discussions of the reading,

 Group Assignments will be used in the course

**Methods of Assessment**

 Assignments both (individual and group) 25%

 Project work (25%)

 Final Exam 50 %

**Recommended Readings**

Badcock, B. (2002) Making cense of cities: A Geographical survey.Arnold, London

Bounds,M. (2004) Urban Social Theory: City, self and Society. Oxford university press,

Newyork.

Collingwood, V. (2002) Good governance and the World Bank.NuffieldCollege,

Oxforduniversity. Viewed online (http://www.ucl.ac/uk/dpuprojects/

drivers\_urb\_change/urb)

Devas, N. (1999). Who run cities? Relation ship between urban governance, service Delivery

and poverty. . Theme paper 4: International Development Departement, School of public

policy, university of Birmingham, Birmingham.

Hall, T. (1998) Urban Geography.Routledge Contemporary Human Geography

Series.Routledge, London.

Kaplan, D.H., Wheeler, J.O and Holloway, S.R. (2004) Urban Geography. John Wiley and Sons,

New York.

Nick Devas**,** 2007**.** Urban Governance Voice and Poverty in the Developing University of

Birmingham.

Pacione, M. (2005). Urban Geography, A global perspective, 2nd ed. Rouledge, New York

Potter, R. and Lioyd-Evas, S. (1998) The city in developing world. Addison Wesley Longman.

Tannerfeldt, G. and Ljung, P. (2006). More urban less poor: An introduction to urban

development and management, Earthscan publishing, London.

Tostensen, A., Tvedten, I. and Vaa M. (2001) The urban crisis, governance and associational

Life. In Tostensen, A., Tvedten, I. and Vaa M. (Eds) Associational Life in Africa Cities:

popular responses to the urban crisis. NordiskaAfrikanistituet, Stockholm, 7-26.

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**9.4.27. Laws 676: Land and Property Law**

Credit Hour =3 (5ECTS)

**Description:**

The purpose of this course is to treat rules and laws applicable to property and land. For land is

one form of property, it is also natural to discuss briefly about the nature and the philosophical

backgrounds of property. Generally, land-related issues such as land policy, tenure security,

access to and equitable distribution of land, land rights and their protection, transfer of land

rights, land administration, land disputes, land conservation and productivity, and investments in

land play crucial role in the socio-economic and political life of Ethiopia. Regardless of its

paramount importance to us, Land Law has started to be treated as a separate specific subject of

law only recently. It consists of rules regarding real property, i.e. land and buildings. Real

property, land, is divided into property units.

This course also allow the students in the program to appreciate the purpose and context of

property and land law and to develop a sound knowledge and understanding of the basic

principles underlying land policy and land law in Ethiopia. The course covers the salient features

urban land policy and laws of Ethiopia including the roles and responsibilities of diverse actors

in the land sector in the context of the current federal state structure. Thus, the powers of Federal

as well as State governments in land policy and law making and land administration will be

explored. The course will also introduce students with experience of other countries in the field

with a view to enable them grasp the diverse perspectives of land ownership, land management,

land administration, land dispute resolution, mode of acquisition, transfer and extinction of rights

in property and land.

**Method of delivery**

 Active Lecturing

 Case studies

 Presentations and discussions of the reading,

 Group Assignments will be used in the course

**Methods of Assessment**

 Assignments both (individual and group) 25%

 Project work (25%)

 Final Exam 50 %

**Recommended Readings**

 Arthur Linton Corbin, Corbin on contracts law, West Pblishing Co., 1952

 Claude D. Rohwer and Anthony M. Skrocki, contracts in Nut Shell, 2000

 David H. Vernon, Contracts: Theory and practice, Analysis and Skills Series, Times

Mirror Books, 1991

72

 Ernest C. German Commercial Law, German American Chamber of Commerce.INC.,

1956

 G. Leroy Certoma, The Italian Legal System, Butterworths, London,1985

 G.H. Treitel , The Law of Contract, 11th ,Sweet&Maxwell,2003

 George Krzeczunowicz, FormationandEffectofContractsinEthiopianLaw, Addis Ababa

University,1983

 GirmaGizaw Ethiopian Contract Law , General Provisions Commercial Printing

Press,Addis Ababa,2002

 J.C.Smith, The Law of Contract, London, Sweet &maxwwell, 1989

 Kessler & Gilmore; Contracts, cases and materials, Second edition,

 Lon L. Fuller & Melvin Aron Eisenberg, Basic Contract law, Third Edition,

 Merton Ferson; the Rational basis of Contracts and related Problems in Legal Analysis

 P.D.V. Marsh, Comparative Contract Law, England, French, Germany, Gower

Publishing,USA, 1994

 Rene David Commentary on Contracts in Ethiopia ,Hailesellasie I University, 1973

**9.4.28. GeES 711: Teaching Geography and Environmental Studies**

Credit Hour = 3(5 ECTS)

The course concerns a more professional approach to teaching Geography and Environmental

Studies. The first part the course provides an outline of the experience of learning and teaching

from the student’s point of view, out of which grows a set of principles for effective teaching in

Geography and Environmental Studies. Part two shows how these ideas can enhance educational

standards, looking in particular at four problems facing every GeES teacher: organizing the

content of courses, selecting teaching methods, assessing student learning, and evaluating the

effectiveness of teaching. Case studies of exemplary teaching, based on the experiences of actual

lecturers, are used to connect the ideas to practice and to illustrate how we can all improve our

teaching no matter how adverse the conditions in which we work. The final part of the course

covers in more detail at appraisal, performance indicators of teaching, accountability and

educational development and training.

**Method of delivery**

 Active Lecturing

 Case studies

 Presentations and discussions of the reading,

 Group Assignments will be used in the course

**Methods of Assessment**

 Assignments both (individual and group) 25%

 Project work (25%)

 Final Exam 50 %

**Recommended Readings**

1. Haggett, Peter. 1972. Geography : A Modern Syenthesis. New York: Harper and Row.

2. Heinch R. etal. 1993. Instructional Media and the New Technologies for Instruction. 4th ed. New

York. Macmillan Publishing Company.

3. Holt-Jensen, Arid. 1988. Geography: History and Concepts: A Studies Guide. 2nd ed. London: Paul

Chapman Publishing ltd.

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4. Lounsbury, Jehen F. 1979. Introduction to Geographic Field Method and Techniques. Columbus:

Merrill.