



# Master of Management in the field of ICT Policy and Regulation

- MM (ICT PR)



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Wits University Graduate School of  
Public and Development Management

**Africa's Leading School of Governance**



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# The Wits Graduate School of Public and Development Management (P&DM) - the continent's leading school of governance - is continually developing innovative and cross-cutting curricula to meet the unfolding needs of regional public and development managers and policymakers.

The Graduate School of Public and Development Management (P&DM) at the University of the Witwatersrand has, since its inception in 1993, been at the cutting edge of public and development management training and research.

Today Wits P&DM produces more postgraduate degrees in the field of public and development management than any other university in Southern Africa. Wits P&DM provides quality management education for leaders and decision-makers in the public policy and development fields.

The school is involved in a range of activities that include postgraduate degrees, executive management development, research and development support. Since the school's inception, staff have engaged in applied policy research and consulting to support the transformation process in South Africa and beyond.

As a student at P&DM, you will have access to academics with a practical understanding and knowledge of public and development management, public policy content and processes, cutting-edge research, and innovative teaching and learning strategies aimed at enhancing your professional skills and understanding.

## **Vision**

Africa's leading school of governance.

## **Mission**

Growing management and leadership for public service, development and democratic governance, through:

- Promoting learning through excellence in teaching and mentoring;
- Facilitating social dialogue to enhance policy formation and implementation;
- Fostering research to ensure quality academic output for social and economic development;
- Collaborating with, especially those in Africa, and international academic communities to create and disseminate knowledge;

- Providing support to practitioner communities;
- Ensuring that the fundamental tenets of academic freedom and practice are always respected.

## **Master of Management in the field of ICT Policy and Regulation - MM (ICTPR)**

### **Background**

Information and communications technology (ICT) policy and regulation play critical roles in shaping the markets, services and technologies that increasingly define the economic and social environment of future information societies.

This degree is designed to meet the needs not only of policy-makers, regulators and operators, but also of communication managers of large and small organisations, user and consumer groups, NGOs and others involved in or affected by ICT sector policy and regulation. The degree has been developed by P&DM's specialist Learning Information Networking Knowledge (LINK) Centre and was launched in August 2004.

The LINK Centre is a leading information and knowledge hub, providing training, research and consultancy in the information and communications technology (ICT) arena in order to develop public, private, NGO and community-based capacity within the Southern African region.

For over ten years LINK has provided ICT policy and regulatory training through its highly acclaimed professional development Certificate in Telecommunications Policy, Regulation and Management. It has also provided training programmes for, inter alia, the Commonwealth Telecommunications Organisation, South Africa's Parliamentary Portfolio Committee on Communications and, in conjunction with NetTel@Africa, a collaborative project to meet the advanced training needs of ICT regulators, operators and others on the African continent.

The LINK Centre manages a public interest applied policy research programme, through the Research ICT

Africa (RIA) Network, producing analyses of key ICT policy, strategy and regulatory issues, and delivering a range of research outputs, including continent-wide ICT access and usage surveys and national ICT sector performance reviews. LINK also publishes the respected and accredited *Southern African Journal of Information and Communication* as a forum for research and academic debate in the region.

The Master of Management in ICT Policy and Regulation includes curriculum content derived from the substantial training experience of the LINK Centre and enriched by its diverse research programmes.

This exciting degree programme has been developed in response to the dynamic demands of the broad ICT sector. Marked by exponential technological development, as well as rapid local and global economic change, this innovative sector requires ongoing review and analysis of its policy and regulatory environment, together with interventions appropriate to the social, political and economic challenges facing developing countries.

African countries, including South Africa, participate in numerous global forums that deal with the issues of telecommunications, broadcasting and ICT policy transformation, and require high levels of skill to ensure quality of inputs.

National regulatory agencies and regional regulatory associations require significant human capital and knowledge development in order successfully to address their respective challenges. Technological convergence of previously distinct sectors presents significant future challenges for government policymakers and for industry.

For further information on the School and the LINK Centre see:

<http://link.wits.ac.za>

<http://www.pdm.mgmt.wits.ac.za> and

<http://www.researchictafrica.net>

## Curriculum

The curriculum of the MM (ICTPR) aims to build multiple competencies critical for policy and regulation in the ICT sector. These include skills in policy analysis, policy design, regulation and regulatory impact assessment, and applied policy research.

The programme of the Master of Management in ICT Policy and Regulation comprises eight (8) compulsory modules, a research methods course, an elective course, and a research report.

The objective of the programme is to:

- provide participants with a sound foundation in the theoretical bases for various approaches to ICT policy and regulation; and to

- promote the development of high quality applied policy research skills.

The research report, which comprises 50% of the assessment, allows candidates to specialise in a selected area within the broad ICT sector that is closely focused on their particular research interests or work experience.

Two (2) fundamental courses provide the contextual and technological foundation for policy and regulation in the ICT sector, giving both global and local perspectives.

The six (6) core courses translate this foundation into practical and applicable skills and expertise.

Once fundamental and core foundations have been established, students have the opportunity to specialise by selecting an elective. This thematic specialisation, together with the research report, enables students to build their knowledge, skills and understanding in a specific focus area. The choice of electives includes courses within the broader fields of public and development management and law. Elective courses are subject to demand.

Course delivery and assessment tools include a combination of face-to-face lectures, on-line resources, group assignments, individual activities and examinations.

The programme is available on the basis of part-time study over 24 to 36 months, commencing in January each year. Students are required to attend lectures largely through one-week block release sessions, but occasionally through evening classes and Saturday sessions.

Normally students will complete a week-long orientation programme and five (5) courses (two fundamental plus three core courses) in the first year of study, and their remaining five (5) courses in year two, leaving their third year to focus on the research report.

| <b>Fundamental Courses (year one)</b>   |
|---|
| <ul style="list-style-type: none"> <li>• Global Trends Affecting ICT Regulation</li> <li>• ICT Technologies</li> </ul>  |
| <b>Core Courses (year one)</b>  |
| <ul style="list-style-type: none"> <li>• ICT Policy, Law and Institutions</li> <li>• ICT Market Structures and Regulatory Reform</li> <li>• Costing and Pricing</li> </ul>            |
| <b>Core Courses (year two)</b>  |
| <ul style="list-style-type: none"> <li>• Approaches to Regulation</li> <li>• Universality and Quality of Service Regulation</li> <li>• ICT Resource Allocation and Control</li> </ul> |

### Elective Courses (choice of one, in year two)

- Telecommunications Market Analysis
- Broadcasting Policy and Regulatory Trends
- ICT Applications
- Policy Frameworks for the Digital Economy
- Content Regulation in the Information Age
- Policy Monitoring and Evaluation
- Advanced Broadcasting Law (via Wits Law School)
- Cyberlaw (Law School)
- Intellectual Property Law (Law School)
- Media Law (Law School)
- Space and Satellite Law (Law School)
- Telecommunications Law (Law School)

### Research

- Research Methods (year two)
- Research Report (year three)

### Degree Outcomes

By the end of the programme, the successful student will be able to:

- Demonstrate an advanced understanding of a comparative range of information and communications technology policy and regulatory frameworks;
- Apply high-level conceptual and analytical tools to the ICT policy and regulatory environment in African and developing country contexts;
- Critically analyse, assess and evaluate the complex and rapidly changing ICT organisational, regulatory and policy environment;
- Undertake and present critical comparison of the African ICT environment with international models and best practice benchmarks;
- Undertake advanced independent research into ICT issues, and formulate and present appropriate results and conclusions.

### Fundamental Courses

#### Global Trends Affecting ICT Regulation

- Impact of ICT on the social, economic and political environment;
- Overview of ICT technologies: from semaphore to bluetooth;
- Global trends driving ICT sector reform: from monopoly provision to competition, liberalisation, privatisation, deregulation;
- The institutional environment of ICT regulation: policy, law, institutions – scope, principles, role and functions;
- The telecommunications market in South Africa: drivers and trends;
- The broadcasting market in South Africa: drivers and trends;
- Policy formulation, implementation and monitoring: a theoretical introduction;
- Globalisation, the information age and the

knowledge economy;

- Emergent and conflicting processes in the field of communications policy;
- ICT sector governance: global, regional and national institutions and initiatives;
- Digitised information and intellectual property rights.

#### ICT Technologies

- A framework for convergence and the architecture of the PSTN;
- Wireless networks: fixed-wireless, mobile, GSM, 3G, WiFi, WiMax;
- The Internet, TCP / IP, VoIP and Internet telephony;
- Networks & infrastructures: optical networking, transmission, switching and architecture; packet-switched networks, protocols and routing;
- Call traffic, holding times and network dimensioning;
- Broadcasting technologies and infrastructure: radio, TV, digital broadcasting, signal distribution;
- Satellite communications technologies, architectures and applications;
- ICT applications;
- Broadband, next-generation networks, multi-media and the future;
- Technological convergence and its implications.

#### Core Courses

##### ICT Policy, Law and Institutions

- Reform of telecommunications and broadcasting in South Africa: an overview;
- Separation of powers and functions: government, the regulator, operators;
- Compliance with international treaties and commitments;
- Constitutional and legal frameworks for ICT policy, law and institutions;
- Policy formulation parameters and processes, policy analysis and evaluation;
- Competition policy, legislation and institutions in South Africa;
- Electronic communications legislation in South Africa: telecommunications policy, legislation & institutions;
- Electronic communications legislation in South Africa: broadcasting policy, law and institutions;
- Electronic commerce legislation in South Africa;
- ICT policy, law and institutions, and the regulation of the ICT sector.

##### ICT Market Structures and Regulatory Reform

- Economic characteristics of network industries, their structure and significance;
- Relationship between policy, market design and regulation – the case of South Africa;
- Review of the European ICT market and market case study;

- Changing ICT market boundaries and their impact on ICT regulation.

### Costing and Pricing

- Theories of economic regulation;
- Telecommunications cost concepts;
- Cost accounting in telecommunications: separation of accounts, CoA/CAM;
- Regulation of wholesale and retail prices in telecommunications – rate of return, price cap, LRIC;
- Price regulation in South Africa;
- Benchmarking telecommunications prices: South Africa;
- Monitoring and evaluating telecommunications price trends;
- Price regulation simulation.

### Approaches to Regulation

- Governance and the regulatory state;
- Rationales and theories of regulation;
- Institutional design and structures of regulation;
- Principles of regulation: independence, transparency, accountability;
- Legal instruments: policy, law, regulation, licensing;
- Regulatory tools: interconnection; tariffs and price regulation; universal access;
- Licensing: principles, types and content of licences;
- Monitoring and enforcement: standards and self-regulation;
- Regulatory accountability and procedures
- International impacts on domestic regulation.

### Universality and Quality of Service Regulation

- ICTs and development: the digital divide, universal access and universal service;
- Access policies and strategies: models, approaches, institutional frameworks and funding of universality interventions;
- Regulation and licensing to promote access: targets, incentives and monitoring;
- Funding mechanisms to promote access: subsidies and incentives;
- Quality of service: approaches, principles, standards, measurement and enforcement;
- Consumer protection: principles, standards, enforcement and dispute resolution.

### ICT Resource Allocation and Control

- Interconnection: introduction and overview;
- Determining interconnection prices;
- Interconnection: legislation and interconnection guidelines;
- Interconnection simulation exercise;
- The electromagnetic spectrum and frequency band planning;
- Regulating the electromagnetic spectrum: allocation and assignment of frequencies;
- Type approvals: emission restrictions and equipment standards;

- Facilities leasing and rights of way;
- Numbering and naming systems: number plans, number assignment, e-num, carrier pre-select, number portability.

### Elective Courses

*Below is a content breakdown for four of the 12 electives currently offered:*

#### Telecommunications Market Analysis

- Market assessment, market analysis and disaggregation;
- Competition theory;
- Interpreting financial statements and annual reports;
- Industry environment and intra-industry analysis;
- Macro economics: demand and supply;
- Public finance;
- Capital budgeting (IRR, NPV, BS);
- Game theory;
- Introduction to other research methodologies;
- Strategic market analysis.

#### Broadcasting Policy and Regulatory Trends

- Broadcasting history and evolution: global, Africa, SADC, South Africa;
- Broadcast policy and regulatory values and objectives;
- National broadcasting sector models: public service, commercial, community, state broadcasting;
- Technological and market trends in broadcasting, globally and in Africa;
- Policy and regulatory trends affecting broadcasting, globally and in Africa;
- Digital migration: policy, regulation and current status, internationally and in Africa.

#### ICT Applications

- e-commerce and e-business;
- e-government, e-health, e-learning and e-education;
- Access to information and the promotion of democracy;
- Privacy, security, encryption, digital signatures and data protection;
- Intellectual capital, labour markets, trade unions and human resource development;
- Intellectual property rights;
- Regulation of ICT content.

#### Policy Frameworks for the Digital Economy

- Comparative analysis of international frameworks to support e-commerce and e-government;
- Consumer protection;
- Convergence policy;
- Technology forecasting;
- Innovation and research and development;
- Enabling legislation: ECT and other Acts;
- Demand and supply in the digital economy.

## Research

### Research Methods

This course covers the postgraduate research context and process, the primary research output for proposal purposes and an overview of qualitative and quantitative methods, data collection, recording and analysis in the context of the ICT sector. The course is designed to take you through the various components of writing a proposal, doing research, and writing a report. You will be required to submit an acceptable proposal for your 50% research report in order to pass this course.

- Research inquiry and the research process;
- Problem and purpose statements;
- Research questions and research hypotheses;
- Literature reviews;
- Using databases;
- Theoretical approaches to research;
- Qualitative research methods;
- Interviews, data collection, coding and analysis;
- Quantitative research methods;
- Surveys, writing up and interpreting statistical results;
- Writing research proposals and supervision.

### Research Report

In order to obtain the degree of Master of Management in ICT Policy and Regulation, you are required to complete a research project and submit a 40 000 - 60 000 - word research report. The aim of the research project is to challenge you to apply analytical and practical research techniques to a topic chosen from your area of specialisation. You will be assigned a supervisor who will support and guide the preparation of the research report. The learning objective of the report is to give you an opportunity to self-manage a problem-solving exercise or research project on a topic of your own choice.

### Who should apply?

The MM (ICTPR) is a professional management qualification designed for middle to senior level managers and practitioners working in the broad ICT sector across Africa – in telecommunications, broadcasting, the IT industry and Internet applications. Our students include people from: sector regulators and regulatory associations; fixed and mobile operators; Internet service providers; broadcasters; signal distributors; government policy departments including communications, trade and industry, science and technology; science councils; university teaching departments; public sector ICT organisations; trade unions; consumer advocates; and the development sector.

### Admission requirements

As well as an honours degree or equivalent, you will need to have at least three years of relevant work experience. This may be salaried or voluntary, but must include organisational experience, either in management

or in policy design. RPL (recognition of prior learning) may be requested on an individual basis.

All applicants are required to complete an admissions test, which assesses comprehension, writing skills, numerical ability and conceptual and abstract thinking. Selection decisions are made on the basis of a holistic assessment of the following criteria:

- a bachelor's degree with honours, or with post graduate diploma or equivalent, preferably in the field of information and communications technologies, achieved at a suitable level;
- at least three years' working experience in an appropriate field;
- satisfactory completion of the admissions test measuring ability on cognitive, arithmetic and general reasoning.

### For further information, please contact:

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