

# **Institution of Surveyors of Kenya**

## **Professional Examination Syllabus for the GIS, ES and LS Chapters**

### **Revised May 2017**

#### **1.0 INTRODUCTION**

The Institution of Surveyors of Kenya (ISK) Diploma Syllabus for the Chapters of Geospatial Information Management Surveyors (GIS), Engineering Surveyors and Land Surveyors Chapters.

#### **2.0 OBJECTIVES OF THE DIPLOMA**

The diploma aims to assess the candidate's competence to carry out the work of a Full Member of the Institution of Surveyors of Kenya. The diploma requires that one is competent to perform related tasks or functions, in both technical and soft skills.

#### **3.0 COURSE DELIVERY, ASSESSMENT AND GRADING STRUCTURE**

##### **3.1 Lecture Delivery**

The teaching for the written examinations will be delivered through:

- i) Lectures which will be largely participatory and interactive
- ii) e-learning mode where possible will be encouraged.

##### **3.2 Course Assessment and Grading**

The courses will be assessed through formal Written Examinations, Technical Papers and submission of Production Jobs. The written examinations will be administered as per the prescribed Institution of Surveyors of Kenya examination regulations.

#### **COURSE OUTLINE**

<b>CODE</b>	<b>COURSE</b>
ISK 314	Professional Practice and Ethics (Common Paper)
ISK 315	Basic Accounts and Finance (Common Paper)
ISK 316	Project Management (Common Paper)
ISK 317	Land Information Management (Common Paper)
ISK 318	Technical Paper
ISK 319	Production Jobs - GIS
ISK 320	Production Jobs - ES
ISK 321	Production Jobs - LS
ISK 322	Oral Examination (Common Paper)

Each course unit that is examined as a written examination shall comprise 12 lecture hours.

## 4.0 EXAMINATION AND REGULATIONS

- 4.1 A candidate shall be allowed to sit for professional examinations only when he/she has met the prescribed professional examinations requirements by the ISK council;
- 4.2 Examinations shall be conducted at the set time as approved and announced by the ISK council;
- 4.3 All candidates unless exempted, must sit the written examination.
- 4.4 Each written examination shall be in the form of a three-hour written paper.
- 4.5 Candidates wishing to be exempted from the Written Examinations should write a letter asking for exemption and provide relevant certificates as well as course transcripts for the paper for which exemption is requested.
- 4.6 Written Examinations, Technical Papers, Production Jobs and Oral Examinations will be marked out of 100%;
- 4.7 The pass mark for each paper in 4.4 shall be fifty percent (50%);
- 4.8 Attendance of all lectures for candidates sitting the written examinations is mandatory. Failure to attend the lectures may lead to disqualification.
- 4.9 Compensation shall be allowed for **two** (2) written papers only, within any professional examination year, for marks between **46- 49%**<sup>1</sup>. For every one (1) compensation mark, two (2) marks shall be taken from the compensating paper. Compensating papers shall, therefore, have adequate marks to allow for the deductions to be made; preferably **58%** and **above**. Marks for compensation for the two papers will be done from two different papers.
- 4.10 A Candidate who fails in any examination shall be required to repeat the failed paper at the next professional examination **sitting unless such a candidate communicates in advance giving reasons why they are not in a position to sit such examination.**
- 4.11 **Re-sitting of examinations should not extend beyond 2 years and if a candidate fails to sit the examinations within the 2 years, such a candidate would have to begin the examinations a fresh.**
- 4.12 Candidates who are re-sitting the examinations must attend the lectures for the subjects they are being re-examined failure to which they will be barred from sitting the examinations.
- 4.13 A candidate who fails to obtain the pass mark in the Production Job(s) may on the recommendation of the Education Functions Committee and approved by the ISK Council be allowed to resubmit the Production Job(s) in the next professional examination;
- 4.14 A candidate who, for good cause (supported with authentic documentary evidence) fails to sit or submit technical paper(s) may be allowed to sit for the written paper(s) and submit the Production Job(s) and Technical Paper concerned when the professional examination is next scheduled, without paying additional fees. The EFC will exercise discretionary powers and the decision will not be questioned.

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<sup>1</sup> Referred to as border cases

- 4.15 Any candidate who attends any examination drunk or under the influence of any banned substance or behaves in a manner that is disorderly shall be disqualified from that examination.
- 4.16 Mobile telephones will not be allowed in the examination room.
- 4.17 Candidates will be required to keep a log book for the mandatory two years. This rule will be applied two years from the publishing of the revised syllabus. The ISK office will avail the template.

## **5.0 APPEALS**

When an appeal is made it must be:

- in writing and accompanied by an administration fee (as prescribed by the Institution of Surveyors of Kenya)
- made by the candidate and not a third party
- clear in stating the grounds upon which the appeal is being made
- supported by appropriate evidence
- received by the Institution of Surveyors of Kenya not later than 14 days after results have been posted.

The decision made by the EFC and the Institution of Surveyors of Kenya Council will be final.

## **6.0 COURSE UNITS**

### **ISK 314: Professional Practice and Ethics**

This course will examine in general information on Professional Practice and Professional Institutions (definitions, institutional structure, policy guidelines, and scale of fees). It will describe the rights and duties inherent in the relationship with a client and prepare the candidate for the complicated ethical issues he/she confronts on a daily basis. The knowledge and skills required by the professional in practice and the contents of the Licensed Surveyors code of ethics, business ethics and social audit will be covered.

At the end of the course the candidate will know the history of the Institution of Surveyors of Kenya (ISK), Structure (Chapters), Membership, Affiliation, Constitution and By-laws, The Council & Standing Council Committees, Rules on Professional Practice etc. as well as the Statutes/Acts governing Land Surveying practice in Kenya.

### **ISK 315: Financial Management for Surveyors**

The objectives of the course will be to acquaint the candidate with an overview of financial records, accounting principles and standards as an aid to professional practice. Topics to be covered shall include; The goals of a business, book keeping and accounting, international accounting standards, financial statement, income statement, cash flow statement, budget estimates, assets and liabilities, shareholder's equity, taxation and making returns. The unit will also focus on how to cost projects and prepare Financial Proposals.

At the end of the unit the candidate should be able to demonstrate knowledge and understanding of accounting concepts and the format and preparation of management and company accounts, including profit and loss statements, cash flow statements and balance sheets. Should be able to provide evidence of interpretation of company accounts and balance sheets in your area of practice and application of appropriate accounting and regulatory standards and finally be able to provide evidence of reasoned advice given to clients with regard to profit and loss statements and balance sheets.

### **ISK 316: Project Management for Surveyors**

This course unit aims at equipping the candidates with skills to independently carry out and efficiently manage projects within the Geospatial field. At the end of this unit, the candidate should be able to:

- Coordinate and manage interdisciplinary and intra-disciplinary consultations and networking;
- Prepare budgeting and cost estimates, cost control and address legal issues in management;
- Monitor and evaluate ongoing projects;
- Undertake project proposal writing; and
- Develop and implement fundable proposals.

The course will cover: **Project management process:** Project definition, selection, planning, design, commissioning, development, closure. Interdisciplinary and intra-disciplinary collaborations, networking. **Project manager:** Qualities, competence, ethics. **Human resource:** Management, team motivation, planning, feasibility studies. Project time management, costs, and quality. **Budgeting:** Estimates, cost control. Procurement and expenditure. Communication, meetings control. Risk analysis and hazard assessment. **Dissemination of project results:** Information Systems, report writing, seminars, workshops, conferences and publications. **Project appraisal:** Evaluation; performance, effectiveness, efficiency, relevance and sustainability. Contractual arrangements. Legal aspects. Project management software. Project case studies in Land Surveying, GIS, and Engineering Survey. In addition, the course will also cover Project Proposal Writing.

### **ISK 317: Land Information Management**

The objective of this unit will be to provide candidates with the necessary land management knowledge and practice to enable them execute their duties in support of overall goal of Land Management in Kenya. The course will focus on: Land Tenure; Land Information Management Systems; Overview of Land Law; Legal and Institutional Frameworks for Land Registration; and Spatial Data Infrastructure.

### **ISK 318: Technical Papers**

Candidates unless exempted will be required to submit a Technical Paper. The technical paper will describe a process, progress, or results of technical or scientific research or the state of a technical or scientific research problem. The purpose of the Technical Paper will be to demonstrate a candidate's competency in written skills. The Technical Paper shall be provided as per the template defined by ISK.

### **ISK 319: Production Jobs - GIS**

A candidate will be required to submit 3 production jobs focusing on but not limited to the following areas.

- a) Geospatial Information System (GIS)
  - Data collection and analysis
  - Database Development
  - Data Modeling
  - Application Development or Programming
- b) Remote Sensing
  - Image Classification for applications like:-
    - Land Use Land Cover Change Studies
    - Vegetation/Water Indices Studies
    - Disaster Management
- c) Photogrammetry
  - Development of a DTM
  - Development of an Orthophoto

### **ISK 320: Production Jobs - ES**

A candidate will be required to submit 2 production jobs with details as follows:

- a) Setting out of engineering structures, such as roads, dams, buildings, etc; and
- b) A topographical survey of at least 5 Hectares of a medium density area

### **ISK 321: Production Jobs - LS**

A candidate will be required to submit 2 production jobs with details as follows:

- c) A fixed survey of at least thirty (30) plots in one or several schemes in which one of the schemes has at least seven (7) plots. In addition, a curvilinear boundary should be included in at least one (1) of the schemes; and
- d) A Control or geodetic or hydrographic surveying task of an acceptable size

### **ISK 322: Oral Examination**

The oral exam will be an opportunity for a Candidate to demonstrate knowledge and competence. In addition, it will be an opportunity for the examiners to test the candidate's presentation and communication skills. The oral examinations will be based on:

- The subject and content of the Technical Paper;
- The Production Jobs presented
- Experience and knowledge related to the discipline including Ethics and the general rules governing ISK and Knowledge of current issues of concern to the profession.
- Knowledge of survey processes and procedures.

### **Assessment Checks**

At any time the ISK may undertake a random check, asking the candidate to provide evidence to support the information they have provided on the technical papers or in the oral examination. If a random check finds any irregularities, or a complaint is made against the candidate the candidate may need to provide further information, and/or attend another oral examination. The principal may also be required to

provide more information to support the candidates work and when cases of integrity are suspected. This may result in the candidate's technical papers being cancelled and their case being referred for further disciplinary investigation.

## **7.0 CHAPTERS IN THE INSTITUTION OF SURVEYORS OF KENYA**

### **1. GIS Chapter**

Candidates seeking to be qualified as Full Members must sit the following papers:

ISK 314	Professional Practice and Ethics (Common Paper)
ISK 315	Basic Accounts and Finance (Common Paper)
ISK 316	Project Management (Common Paper)
ISK 317	Land Information Management (Common Paper)
ISK 318	Technical Paper
ISK 319	Production Jobs - GIS
ISK 322	Oral Examination (Common Paper)

### **2. Engineering Surveyors Chapter**

Candidates seeking to be qualified as Full Members must sit the following papers:

ISK 314	Professional Practice and Ethics (Common Paper)
ISK 315	Basic Accounts and Finance (Common Paper)
ISK 316	Project Management (Common Paper)
ISK 317	Land Information Management (Common Paper)
ISK 318	Technical Paper
ISK 320	Production Jobs - ES
ISK 322	Oral Examination (Common Paper)

### **3. Land Surveyors Chapter**

Candidates seeking to be qualified as Full Members must sit the following papers:

ISK 314	Professional Practice and Ethics (Common Paper)
ISK 315	Basic Accounts and Finance (Common Paper)
ISK 316	Project Management (Common Paper)
ISK 317	Land Information Management (Common Paper)
ISK 318	Technical Paper
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