INSTITUT AGRONOMIQUE ET VETERINAIRE HASSAN II

**Filière de Formation en Topographie**

Département de Cartographie Photogrammétrie

# DEVELOPMENT OF A CONVENIENT CURRICULUM FOR THE ENHANCEMENT OF SURVEYING STUDIES IN MOROCCO

:

**Pr. Mohammed ESSADIKI**

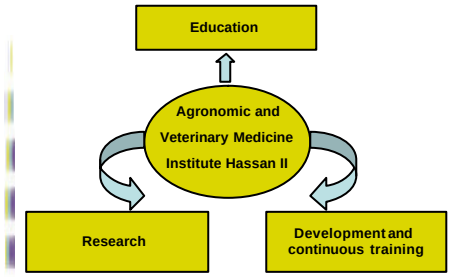
**(Morocco)**



## Introduction



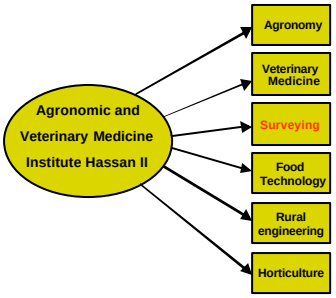
### Education of Surveying at IAV in Morocco




## Introduction



### Education of Surveying at IAV in Morocco




## Introduction



### Education of Surveying at IAV in Morocco

To be in accordance with the new reform in our Universities and with the international curricula

The duration of studies will be five years, instead of six years

Two levels: two basic year studies, and three professional years

Process of reviewing and reforming our curriculum

## BACKGROUND



### School of Surveying

1970: establishment of the school of Surveying funded with the framework of Canadian cooperation

1970-1989: the Surveying curriculum was four years (Ingénieur d'application)

1986: the curriculum was reviewed for being six years studies (Ingénieur d'Etat)

2004: studies became five years, in accordance with new reform of universities, technological advances, and the international curricula (Bologna Declaration)

## BACKGROUND



### School of Surveying

More than 800 Surveying Engineers graduated from the school of Surveying

1996: the profession of Surveyors was organized under the National Order of Surveyors (ONIGT)

## ADMISSION

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### Admission Requirements at IAV Hassan II

National and International Candidates with «Baccalauréat» : high school diploma

*(10 to 20% from African countries and others)*

Among 10 000 applications 400 students are selected

The first year "APESA" is a common preparatory year for all students

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### Admission Requirements to Surveying School

Surveying requirements:

- 30 – 40 students are admitted from APESA
- Few students from universities (after 2 years studies at the University) selection is made by «competition exam »
- 10-14 students from the two preparatory years to engineering schools (Classes préparatoires aux grandes écoles d'ingénieurs)

## NEW CURRICULUM

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### The Former Curriculum

- Initially, the school of Surveying has been focused on producing surveyors for public activities with four years program
- To answer the need in public and private sectors, the study program passed to six years since 1986

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### The Former Curriculum

- Until early 1990s, the education was more dominated by conventional methods, and was carried out the needs of the Agriculture Ministry, in general, and Land Registration, Cadastral and Cartography Administration, (ANCFCC) in particular
- Since the mid of 90s, the demand for land surveyors was more diversified.

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### The New Curriculum

- The first basic year program (APESA) is shared with all schools of the IAV institute. At the end of it, students are required to choose their option according to their desire and rank
- The second basic year is reserved for fundamental courses in mathematics, physics, statistics, electronics, computation, and foreign languages as well as communication.

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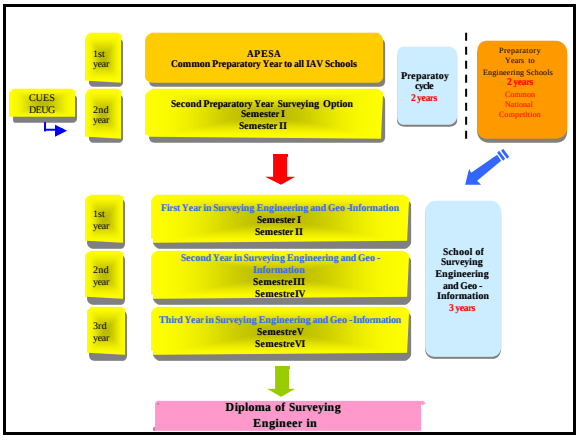
### The New Curriculum

- The three last years of the professional program encompasses courses specifically conceived to meet the requirements of the market.

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### The New Curriculum

All courses can be divided into seven distinguished axes:

1. Geodetic sciences and surveying concerned by all courses in the domain of geodesy and topography (land surveying),
2. Cartography and photogrammetry that includes all courses used for mapping,
3. GIS and remote sensing with all courses of geographical information systems, database development and design, and remote sensing,

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### The New Curriculum

4. Cadastre and land systems that contains land consolidation, cadastre, rural and urban land management,
5. Computation and adjustment with all courses concerning the geodetic adjustment and computation applied in surveying and mapping,

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### The New Curriculum

6. Technical and Professional Training that enables students to practice within private or public companies for a period of time varying from two weeks to two months,
7. Support subjects that include all courses of legislation and law, economics, business management, ecology, and languages.

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### The New Curriculum

An important component in the former Surveying Education Program was training and field works

- Every year of their studies, students have field work or a training
- All these training and field works were maintained in the new curriculum
- . changes will be the methods of collecting spatial data using the new technologies

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### The New Curriculum

•To reinforce the education program,

- studying visits are organized at professional and specialized administration in the field of surveying
- a series of seminars are prepared by professionals from private and public sectors, in the purpose of presenting various aspects of the profession

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### Research and Final Project

- The new program preserves all research activities.
  - Students research
  - Doctorate research
  - Contractual research

However, the research conducted by students will be in one semester only. It will be more a practical final project than a fundamental research.

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### Main changes

- System of semesters (two semesters per year).
- Each semester is 14 to 16 weeks
- Average total "credit" hours of a semester is around 400 hours.
- Courses are grouped into "modules"
- Maximum total credit hours of a module is 120 hours
- The last two weeks of a semester are reserved to evaluation and exams.

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### New Curriculum

New Programs of the last three years

## METHODOLOGY

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### The Approach

Several steps:

- The evaluation of the existing curriculum of six years studies, by emerging its weak and strong points.
- Bibliographic research (library, internet, etc.), and the development of a new teaching materials that introduce students in diverse disciplines to emerging Geographic Information Science Technologies.

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### The Approach

- internal discussion with colleagues and the administration of our Institute, mainly on "modules" and "credit" that will be integrated in our curriculum for the first time.
- the evaluation of the draft of the curriculum with faculty members of our School of Land Surveying and make modification when it was necessary

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### The Approach

- the evaluation of the curriculum by the National Order of Surveyors (ONIGT) and Land Registration, Cadastral and Cartography Agency (ANCFCC).
- Organization of seminars (future), in the perspective of giving more explanation, enhancing the curriculum and having more suggestions from various partners.

## EVALUATION

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### Evaluation and dissemination

• To assess the effectiveness of the new curriculum and the course materials developed, students, faculty members will be subjected to evaluations.

• The organization of seminars will allow to enhance the curriculum and to modify it based on evaluations and suggestions.


سطات
مراكش
SETTAT
MARRAKECH


## Introduction



### Education of Surveying at IAV in Morocco

**The main objective of this study is a development of a convenient curriculum for the enhancement of surveying studies in morocco, using new technologies and in accordance with the demand and the new reform in our Universities.**

## NEW CURRICULUM



### The New Curriculum

- **The combination of remote sensing and other Geographic Information (GI) technologies, such as global positioning systems (GPS) and Geographic Information Systems (GIS) allows us to know the geographic spatial location of these and other spatial phenomena and how they interact.**

- **All these technologies are called Geographic Information Science (GIScience) Technologies.**