

NARSS TRAINING COURSES

Introduction

NARSS, The National Authority for Remote Sensing and Space Sciences is the pioneering Egyptian institution in the field of remote sensing. NARSS is an outgrowth of a Remote Sensing Center, established in 1972 under the – Egyption Academy of Scientific Research and Technology. In 1994 the Authority was established as an organization under the State Ministry of Scientific Research to promote the use of state of the art in space technologies to serve development projects in the country and to introduce High Tech capabilities in national and regional planning among other applications.

NARSS has a core of approximately 65 qualified scientists and professionals in different disciplines. It is equipped with modern facilities including an aircraft with aerial camera, laser system data acquisition equipment, a digital data processing laboratory (for processing satellite images and aircraft digital data), a photographic laboratory (for production of topographic and planimetric maps from aerial, terrestrial and space photographs). Also it has Training Labs equipped with modern work stations connected with NARSS internal information network and internet.

NARSS is pleased to offer the following courses in remote sensing and Geographic Information Systems (GIS)

- Fundamentals of Geographic Information Systems (GIS 1)
- Advanced Geographic Information Systems (GIS 2)
- Production of Thematic maps (i.e) Soil, Geologic and Geomorphologic maps
- Integration between Remote Sensing and Geographic Information Systems
- Fundamentals of remote sensing (RS 1)
- Digital image processing (RS 2)
- Softwares application (SW)
- Applications of remote sensing on oil and mineral resources (Ap 1)
- Applications of remote sensing on hydrology and hydrogeology (Ap 2)
- Applications of remote sensing on coastal and marine resources (Ap 3)
- Applications of remote sensing on soil and agriculture resources (Ap 4)
- Applications of Climate Changes

The attached documents include details about these courses, time frames, and cost.

Fundamentals of Geographic Information Systems (GIS 1)

(Application on Agriculture, Soils, Geology, Geomorphology and Landuse & Urban planning)

Course room:	Hussein Younis Hall
Labs room:	Mohammed Abdel Hady Hall
Training duration:	5 days
Time schedule:	
	9:00 AM – 12:00 PM
Break:	12:00 PM – 1:00 PM
	1:00 PM – 3:00 PM
Time formal:	5 hours
Time for practice & exercises:	25 hours

COURSE TOPICS AND OUTLINES

LECTURE 1: GIS FUNDAMENTALS

LECTURE 2: DATA MODELS AND DATA FORMATS

LECTURE 3: WORKING WITH TABLES

LECTURE 4: GEO-REFERENCING

LECTURE 5: ANALYSIS POWER OF GIS

LECTURE 6: MAP PRODUCTION

Instructors & Lecturers

Group of Professors and Specialists in the fields of

Soils and Agricultures

Remote sensing and Image processing

Geographic Information System

Geology

Hydrogeology

Geomorphology

Landuse planning

Urban planning

Advanced Geographic Information Systems (GIS 2)

(Advanced Application on Agriculture, Soils, Geology, Geomorphology and Landuse & Urban planning)

Course room:	Hussein Younis Hall
Labs room:	Mohammed Abdel Hady Hall
Training duration:	5 days
Time schedule:	
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Break:	12:00 PM – 1:00 PM
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COURSE TOPICS AND OUTLINES

LECTURE 1: GEODATABASE CONCEPTS AND DESIGN

LECTURE 2: SPATIAL ANALYST (1)

LECTURE 3: SPATIAL ANALYST (2)

LECTURE 4: 3D ANALYST (1)

LECTURE 5: 3D ANALYST (2)

LECTURE 6: GEOSTATISTICAL ANALYEST

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Production of Thematic maps (i.e)Geologic and Geomorphologic maps

*(Application on Agriculture, Soils, Geology, Geomorphology and Landuse & Urban
planning)*

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COURSE TOPICS AND OUTLINES

LECTURE 1: DATA EXTRACTION THROUGH DIGITAL IMAGES OF SATELLITES

LECTURE 2: MAJORITY ANALYSIS

LECTURE 3: RASTER TO VECTOR CONVENTION

LECTURE 4: DATA EDITING

LECTURE 4: GEOMETRIC CORRECTION

LECTURE 5: TRANSFORMATIONS AND PROJECTIONS

LECTURE 6: MAPPING AND LAYOUTS

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Integration between Remote Sensing and Geographic Information Systems

*(Application on Agriculture, Soils, Geology, Geomorphology and Landuse & Urban
planning)*

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COURSE TOPICS AND OUTLINES

REMOTE SENSING WORK

LECTURE 1: USING RASTER IMAGES IN DIFFERENT FORMATS

LECTURE 2: SPATIAL AND SPECTRAL SUBSET

LECTURE 3: RADIOMETRIC CORRECTION

LECTURE 4: GEOMETRIC CORRECTION

LECTURE 5: DATA EXTRACTION

LECTURE 6: RASTER TO VECTOR CONVERSION

LECTURE 7: DATA MANIPULATION

LECTURE 8: DATA EDITING

LECTURE 9: MAPPING AND LAYOUTS

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Fundamentals of Remote Sensing (RS 1)

(Application on Agriculture, Soils, Geology, Geomorphology and Landuse & Urban planning)

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COURSE TOPICS AND OUTLINES

LECTURE 1: ELECTROMAGNETIC RADIATION AND PHYSICS OF REMOTE SENSING

LECTURE 2: TYPES OF SENSORS

LECTURE 3: OPTICAL REMOTE SENSING

LECTURE 4: THERMAL REMOTE SENSING

LECTURE 5: HYPERSPECTRAL REMOTE SENSING

LECTURE 6: MICROWAVE RADIOMETRY

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Digital Image Processing (RS 2)

(Application on Agriculture, Soils, Geology, Geomorphology and Landuse & Urban planning)

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COURSE TOPICS AND OUTLINES

LECTURE 1: IMAGE PREPROCESSING

LECTURE 2: RADIOMETRIC ENHANCEMENT

LECTURE 3: SPECTRAL ENHANCEMENT

LECTURE 4: SPATIAL ENHANCEMENT

LECTURE 5: MULTISPECTRAL ANALYSIS AND CLASSIFICATION

LECTURE 6: REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS

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Landuse planning

Urban planning

Softwares application (RS 3)

(Application on Agriculture, Soils, Geology, Geomorphology and Landuse & Urban planning)

Course room:	Hussein Younis Hall
Labs room:	Mohammed Abdel Hady Hall
Training duration:	5 days
Time schedule:	
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COURSE TOPICS AND OUTLINES

LECTURE 1: INTRODUCTION TO APPLICATION SOFTWARES

LECTURE 2: BASIC TOOLS

LECTURE 3: IMAGE CORRECTION TOOLS

LECTURE 4: IMAGE ENHANCEMENT

LECTURE 5: IMAGE CLASSIFICATION

LECTURE 6: MAPPING PRODUCTION

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Remote Sensing Applications on Oil and Mineral Resources

(AP 1)

Course room:	Hussein Younis Hall
Labs room:	Mohammed Abdel Hady Hall
Training duration:	5 days
Time schedule:	
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Break:	12:00 PM – 1:00 PM
	1:00 PM – 3:00 PM
Time formal:	5 hours
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COURSE TOPICS AND OUTLINES

LECTURE 1: CONCEPTUAL FRAMEWORK OF OIL AND MINERAL EXPLORATION

LECTURE 2: ROCK AND MINERAL DEFINITION USING MULTISPECTRAL IMAGERIES

LECTURE 3: SPECTROSCOPIC REMOTE SENSING

LECTURE 4: THERMAL REMOTE SENSING IN MINERAL EXPLORATION

LECTURE 5: PRODUCTION OF MINERAL MAP

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Remote Sensing Applications on Hydrology and Hydrogeology (AP 2)

Course room:	Hussein Younis Hall
Labs room:	Mohammed Abdel Hady Hall
Training duration:	5 days
Time schedule:	
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Break:	12:00 PM – 1:00 PM
	1:00 PM – 3:00 PM
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COURSE TOPICS AND OUTLINES

LECTURE 1: DRYLAND ENVIRONMENT HYDROLOGY AND PROCESSES

LECTURE 2: IMAGE PROCESSING FOR HYDROLOGIC APPLICATIONS

LECTURE 3: FLASH FLOOD RECOGNITION AND MAPPING

**LECTURE 4: DRYING UP OF TOSKA LAKES: A CASE STUDY FROM
EGYPT**

LECTURE 5: REMOTE SENSING DATA FOR GIS HYDROLOGIC MODELING

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Remote Sensing Applications on Coastal and Marine Resources (AP 3)

Course room:	Hussein Younis Hall
Labs room:	Mohammed Abdel Hady Hall
Training duration:	5 days
Time schedule:	
	9:00 AM – 12:00 PM
Break:	12:00 PM – 1:00 PM
	1:00 PM – 3:00 PM
Time formal:	5 hours
Time for practice & exercises:	25 hours

COURSE TOPICS AND OUTLINES

LECTURE 1: COASTAL PROCESSES

LECTURE 2: COASTAL PROCESSES AND COASTAL ZONE MANAGEMENT

LECTURE 3: BIOLOGICAL ASPECTS OF REMOTE SENSING

LECTURE 4: LAND/SEA INTERACTION

LECTURE 5: Remote Sensing Applications on Coastal Zone

Instructors & Lecturers

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Remote sensing and Image processing

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Geomorphology

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Remote Sensing Applications on Soil and Agricultural Resources (AP 4)

Course room:	Hussein Younis Hall
Labs room:	Mohammed Abdel Hady Hall
Training duration:	5 days
Time schedule:	
	9:00 AM – 12:00 PM
Break:	12:00 PM – 1:00 PM
	1:00 PM – 3:00 PM
Time formal:	5 hours
Time for practice & exercises:	25 hours

COURSE TOPICS AND OUTLINES

LECTURE 1: HYPERSPECTRAL DATA FOR IDENTIFYING MINERALS

LECTURE 2: EARLY WARNING SYSTEM AND REMOTE SENSING

LECTURE 3: REMOTE SENSING AND PLANT PRODUCTIVITY

LECTURE 4: REMOTE SENSING AND CROPPING PATTERN SYSTEMS

LECTURE 5: CASE STUDY

Instructors & Lecturers

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Applications of Climate Changes

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COURSE TOPICS AND OUTLINES

LECTURE 1: SEA LEVEL RISE SCENARIOS

LECTURE 2: EROSION AND ACCRETION

LECTURE 3: USING THERMAL BANDS

LECTURE 4: COASTAL TOPOGRAPHY

LECTURE 5: COASTAL GEOMORPHOLOGY CHANGES

LECTURE 6: CASE STUDY

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Price List

No:	Course	Data	Price per trainee
1	Fundamentals of GIS (GIS 1)	04/01 – 08/01 29/03 – 02/04 21/06 – 25/06 18/10 – 22/10	\$ 700
2	Advanced GIS (GIS 2)	11/01 – 15/01 05/04 – 09/04 28/06 – 02/07 25/10 – 29/10	\$ 750
3	Production of Thematic maps (i.e)Geologic and Geomorphologic maps	18/01 – 22/01 12/04 – 16/04 05/07 – 09/07 01/11 – 05/11	\$ 700
4	Integration between Remote Sensing and Geographic Information Systems	25/01 – 29/01 19/04 – 23/04 12/07 – 16/07 08/11 – 12/11	\$ 700
5	Fundamentals of Remote Sensing (RS 1)	01/02 – 05/02 26/04 – 30/04 19/07 – 23/07 15/11 – 19/11	\$ 700
6	Digital Image Processing (RS 2)	08/02 – 12/02 31/04 – 07/05 26/07 – 30/07 22/11 – 26/11	\$ 750
7	Softwares application (SW)	15/02 – 19/02 10/05 – 14/05 02/08 – 06/08 06/12 – 10/12	\$ 750
8	Applications of Remote Sensing on Oil and Mineral Resources (Ap 1)	22/02 – 26/02 17/05 – 21/05 09/08 – 13/08 13/12 – 17/12	\$ 750
9	Applications of Remote Sensing on Hydrology and Hydrogeology (Ap 2)	01/03 – 05/03 24/05 – 28/05 16/08 – 20/08 20/12 – 24/12	\$ 750
10	Applications of Remote Sensing on Coastal and Marine Resources (Ap 3)	08/03 – 12/03 30/05 – 04/06 27/09 – 01/10 27/12 – 31/12	\$ 750
11	Applications of Remote Sensing on Soil and Agriculture Resources (Ap 4)	15/03 – 19/03 07/06 – 11/06 04/10 – 08/10	\$ 750
12	Applications of Climate Changes	22/03 – 26/03 14/06 – 18/06 11/10 – 15/10	\$ 700