

NARSS TRAINING COURSES FOR THE FISCAL YEAR 2021 / 2022

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 – Egyptian 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)
- Editing Data with ArcGIS administrator (GIS 3)
- Building Geodatabases (GIS 4)
- Cartography and Mapping (GIS 5)
- Network Analyst (GIS 6)
- Working with Geometric Networks for Utilities (GIS 7)
- Introduction to ArcSDE Server (GIS 8)
- 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)
- Climate Changes identification using RS & GIS
- Atmospheric Studies using RS & GIS

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:	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: 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

Instructors & Lecturers

Group of Professors and Specialists in the fields of

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Remote sensing and Image processing

Geographic Information System

Geology

Hydrogeology

Geomorphology

Landuse planning

Urban planning

Editing Data with ArcGIS (GIS 3)

*(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:	
	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: Basic editing workflow
- LECTURE 2: Preparing to edit
- LECTURE 3: Editing geometry
- LECTURE 4: Editing attributes
- LECTURE 5: Data integration and quality control
- LECTURE 6: Data integration and data alignment techniques
- LECTURE 7: Sharing and editing
- LECTURE 8: Implementing the editing workflow

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

Building Geodatabases (GIS 4)

(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: Organizing your data in the Catalog
- LECTURE 2: Importing data into your geodatabase
- LECTURE 3: Creating subtypes and attribute domains
- LECTURE 4: Creating relationships between objects
- LECTURE 5: Building a geometric network
- LECTURE 6: Creating annotation
- LECTURE 7: Creating layers for your geodatabase data
- LECTURE 8: Creating a topology

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

Cartography and Mapping (GIS 5)

(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
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COURSE TOPICS AND OUTLINES

LECTURE 1: Learning the fundamentals of representations

LECTURE 2: Interacting with representation properties

LECTURE 3: Performing edits with representations

LECTURE 4: Working with free representations

LECTURE 5: Using geoprocessing tools for representations

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

Network Analyst (GIS 6)

(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
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Time formal:	5 hours
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COURSE TOPICS AND OUTLINES

- LECTURE 1: Creating a network dataset
- LECTURE 2: Creating a multimodal network dataset
- LECTURE 3: Finding the best route using a network dataset
- LECTURE 4: Finding the closest fire stations
- LECTURE 5: Calculating service areas and creating an OD cost matrix
- LECTURE 6: Creating a model for route analysis
- LECTURE 7: Servicing a set of orders with a fleet of vehicles
- LECTURE 8: Finding best routes to service paired orders
- LECTURE 9: Choosing optimal store locations using location-allocation

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

Working with Geometric Networks for Utilities (GIS 7)

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: Geometric networks overview**
- LECTURE 2: Building a geometric network**
- LECTURE 3: Defining rules and behavior**
- LECTURE 4: Network analysis**
- LECTURE 5: Editing a geometric network**

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

Introduction to ArcSDE Server (GIS 8)

Course room:	Hussein Younis Hall
Labs room:	Mohammed Abdel Hady Hall
Training duration:	5 days
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	9:00 AM – 12:00 PM
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: installing SQL
- LECTURE 2: Adding and connecting to a database server
- LECTURE 3: Adding users
- LECTURE 4: Creating and adding geodatabases
- LECTURE 5: Administering user permissions
- LECTURE 6: Adding and Editing data
- LECTURE 7: Administering database servers and geodatabases

Instructors & Lecturers

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Remote sensing and Image processing

Geographic Information System

Geology

Hydrogeology

Geomorphology

Landuse planning

Urban planning

Production of Thematic maps (i.e) Soil, 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

Instructors & Lecturers

Group of Professors and Specialists in the fields of

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Remote sensing and Image processing

Geographic Information System

Geology

Hydrogeology

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Landuse planning

Urban planning

Integration between Remote Sensing and Geographic Information Systems

(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 12:00 PM – 1:00 PM 1:00 PM – 3:00 PM
Break:	5 hours
Time formal:	25 hours
Time for practice & exercises:	

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

Instructors & Lecturers

Group of Professors and Specialists in the fields of

Soils and Agricultures

Remote sensing and Image processing

Geographic Information System

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Geomorphology

Landuse planning

Urban planning

Fundamentals of Remote Sensing (RS 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: 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

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

Digital Image Processing (RS 2)

(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: 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

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

Softwares application (SW)

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

Course room:	Hussein Younis Hall
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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: 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

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

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:	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: 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

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

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:	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: DRYLAND ENVIRONMENT HYDROLOGY AND PROCESSES

LECTURE 2: IMAGE PROCESSING FOR HYDROLOGIC APPLICATIONS

LECTURE 3: FLASH FLOOD RECOGNITION AND MAPPING

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

**LECTURE 5: REMOTE SENSING DATA FOR GIS HYDROLOGIC
MODELING**

Instructors & Lecturers

Group of Professors and Specialists in the fields of

Soils and Agriculture

Remote sensing and Image processing

Geographic Information System

Geology

Hydrogeology

Geomorphology

Landuse planning

Urban planning

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

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

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

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

Climate Changes identification using RS & GIS

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: 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

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

Atmospheric Studies using RS & GIS

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: Atmospheric correction

- Multi spectral images
- Hyper spectral images

LECTURE 2: Temperature extraction from

LECTURE 3: Thermal bands of:

- TM image
- ETM+ image
- ASTER image

LECTURE 4: Producing thermal images profiles

LECTURE 5: Rain distribution using GIS technique

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

Price List

No:	Course	Five-day session	Price per trainee
1	Fundamentals of GIS (GIS 1)	From Sunday to Thursday	LE 1000
2	Advanced GIS (GIS 2)	From Sunday to Thursday	LE 1200
3	Editing Data with ArcGIS (GIS 3)	From Sunday to Thursday	LE 1200
4	Building Geodatabases (GIS 4)	From Sunday to Thursday	LE 1200
5	Cartography and Mapping (GIS 5)	From Sunday to Thursday	LE 1200
6	Network Analyst (GIS 6)	From Sunday to Thursday	LE 1200
7	Working with Geometric Networks for Utilities (GIS 7)	From Sunday to Thursday	LE 1200
8	Introduction to ArcSDE Server (GIS 8)	From Sunday to Thursday	LE 1200
9	Production of Thematic maps (i.e)Geologic and Geomorphologic maps	From Sunday to Thursday	LE 1000
10	Integration between Remote Sensing and Geographic Information Systems	From Sunday to Thursday	LE 1000
11	Fundamentals of Remote Sensing (RS 1)	From Sunday to Thursday	LE 1000
12	Digital Image Processing (RS 2)	From Sunday to Thursday	LE 1200
13	Softwares application (SW)	From Sunday to Thursday	LE 1200
14	Applications of Remote Sensing on Oil and Mineral Resources (Ap 1)	From Sunday to Thursday	LE 1200
15	Applications of Remote Sensing on Hydrology and Hydrogeology (Ap 2)	From Sunday to Thursday	LE 1200
16	Applications of Remote Sensing on Coastal and Marine Resources (Ap 3)	From Sunday to Thursday	LE 1200
17	Applications of Remote Sensing on Soil and Agriculture Resources (Ap 4)	From Sunday to Thursday	LE 1200
18	Climate Changes identification using RS & GIS	From Sunday to Thursday	LE 1200
19	Atmospheric Studies using RS & GIS	From Sunday to Thursday	LE 1200

Discounts

50 % for university undergraduate students (500 / 600)

25 % for university Post graduate students (Ms and PhD students) (750 / 900)