Assignment Booklet

POST GRADUATE CERTIFICATE IN GEOINFORMATICS (PGCGI)

ASSIGNMENTS
JANUARY & JULY 2023 CYCLES

Valid from January 1, 2023 to December 31, 2023

Tutor Marked Assignments (TMA) for
MGY-001
MGY-002 &
MGY-003

It is compulsory to submit the Assignments before filling in the Term-End Examination (TEE) Form

ignou
THE PEOPLE'S UNIVERSITY

School of Sciences
Indira Gandhi National Open University
Maidan Garhi, New Delhi-110 068 (INDIA)

(2023)

Dear Learner,

Welcome to the Post Graduate Certificate Programme in Geoinformatics (PGCGI).

As per the laid down guidelines of the University, you need to complete the assignment for each course. Each assignment has 5 questions. All the questions are compulsory. It is important that you should write the answers to all the questions in your own words. You should remember that writing answers to assignment questions will improve your writing skills and prepare you for the term-end examination.

This booklet includes assignments for the following three courses:

MGY-001: Introduction to Geoinformatics

MGY-002: Remote Sensing and Image Interpretation

MGY-003: Global Navigation Satellite System and Geographic Information System

It is compulsory to submit the assignments within the stipulated time to be eligible for appearing the term-end examination. You will not be allowed to appear for the term-end examination for a course if you do not submit the assignment for that course within the due date. As per the University guidelines, if you appear in the term-end examination of a course without submitting its assignment, the result of the term-end examination is liable to be cancelled/ withheld.

The assignments constitute the continuous component of the evaluation process and have 30% weightage in the final grading.

Before you write the assignments, first go through the course material and then prepare the assignments carefully by following the instructions pertaining to assignments. Your responses should not be a verbatim reproduction of the textual materials provided for self-learning purposes but it should be in your own words.

If you have any doubt or problem pertaining to the course material and assignments, contact the concerned Programme in-charge or Academic Counsellor at your Study Centre. If you still have problems, do feel free to contact us at the School of Sciences, IGNOU, New Delhi.

Wishing you all the best to successfully complete the programme.

Programme Coordinator
PGCGI
School of Sciences
e-mail: pgcgi@ignou.ac.in

INSTRUCTIONS

1. On the first page of the assignment response sheet, write the course code, course title, assignment code, name of your programme study centre (PSC) and date of submission.

2. Your enrollment number, name and full address should be mentioned on the top right corner of the first page.

3. Write the Course title, assignment number and the name of the study centre you are attached to, in the centre of the first page of your response sheet.

4. The top of the first page of your response sheet should be like the following:

NAME: …..................…………......................…………....................................

ENROLLMENT NO.: ....…………...........................

CYCLE OF ADMISSION: …...………..................................…………..............................

PROGRAMME CODE: ....…………...............................

ASSIGNMENT CODE: …………………………..…………...

COURSE CODE: …………………………….............……….................................

COURSE TITLE: …………………………….............……….................................

REGIONAL CENTRE CODE: .... …………................................

STUDY CENTRE: ....…………...............................

ADDRESS: …….........……………….................…....…………...............................

…….........……………….....…....…………...............................

....…………...............................

CONTACT NUMBER: ....…………...........................

DATE OF SUBMISSION: ……….………..................……….................................

Strictly follow the above format. If you do not follow this format, your script will be returned to you and you will be asked for re-submission.

5. Read the instructions related to assignments given in the Programme Guide.

6. Please note that unless you submit the assignments contained in this booklet within the stipulated time, you would not be permitted to appear for the term-end examination.

Note the following points before you start writing the assignments:

- Use only A-4 size paper for writing your responses. Only hand written assignments will be accepted. **Typed or printed copies of assignments will not be accepted.**

- Tie the pages after numbering them carefully.

- Write the question number for each answer.

- All the questions are compulsory.

- Keep a copy of the assignment answer sheets with you before submission for future reference.

- Answer each assignment on separate sheet.

- It is mandatory to write all assignments neatly in **your own handwriting. Write Your Name, Course Code, Enrollment No. and Cycle of admission** on all the assignments in bold letters**.**

- **Express your response in your own words. You are advised to restrict your response based on the marks assigned to it. This will also help you to distribute your time in writing or completing your assignments on time.**

- **The assignment has to be submitted at your Study Centre.**

You have to submit their completed assignments at the **Study Centre** allotted to you before the due date as set by the University.

It is desirable to keep with you a photocopy of the assignment(s) submitted by you.

*You have to submit the assignments to the Study Centre by **31st March, 2023** (for January 2023 Cycle) if you wish to appear in the June 2023 TEE and by **30th September, 2023** (for July 2023 Cycle) if you wish to appear in the December 2023 TEE.

Due Date of Submission*: For January 2023 Cycle: March 31, 2023
For July 2023 Cycle: September 30, 2023

* Please note that last date of submission may be changed by the University. Please check IGNOU website for updated information regarding due date of assignment submission.

Tutor Marked Assignment

MGY-001: Introduction to Geoinformatics

Note: * This assignment is based on the entire course.
* It is compulsory to answer all the questions.
* The marks for each question are indicated against it within brackets on the right hand side.
* Please write all answers in your own words; do not copy from the self learning materials.
* For question numbers 1 to 4, write your detailed answer in ~500 words.
* For question numbers 5, write your answer in ~200 words.

---

1. Describe different types of topographical maps of different scales prepared by SOI for India. (15)

2. Discuss the role of national agencies in the development of geoinformatics technologies. (15)

3. How can geoinformatics be used for earth resources management? Support your answers with Indian examples. (15)

4 What is geospatial data? Discuss different types of geospatial data. (15)

5. Write short notes on the following:
   a) Types of map projection (5)
   b) Trends in GIS (5)
   c) Universal Transverse Mercator (5)
   d) Indian Space Research Organisation (5)
   e) Free and open source software (FOSS) (5)
   f) Sources of digital elevation models (5)
   g) Career options in geoinformatics (5)
   h) Role of geoinformatics in e-governance (5)

*****

Tutor Marked Assignment

MGY-002: Remote Sensing and Image Interpretation

Note: * This assignment is based on the entire course.
* It is compulsory to answer all the questions.
* The marks for each question are indicated against it within brackets on the right hand side.
* Please write all answers in your own words; do not copy from the self learning materials.
* For question numbers 1 to 4, write your detailed answer in ~500 words.
* For question numbers 5, write your answer in ~200 words.

---

1. Describe the interaction of EMR with earth and atmosphere. Support your answer with the help of neat well labelled diagrams. (15)

2. Give an account of along-track and across-track scanners. (15)

3. What is ground truth data? Discuss in detail the methods for planning and collection of ground truth data. (15)

4. Describe various techniques used to remove the geometric errors of an image. (15)

5. Write short notes on the following:

    a) Spectral signature (5)
    b) Elements of image interpretation (5)
    c) Types of digital images (5)
    d) Indian remote sensing satellite series (5)
    e) Types of image resolution (5)
    f) MODIS (5)
    g) Image enhancement (5)
    h) Supervised image classification (5)

*****

Tutor Marked Assignment

MGY-003: Global Navigation Satellite System and Geographic Information System

Note: * This assignment is based on the entire course.
* It is compulsory to answer all the questions.
* The marks for each question are indicated against it within brackets on the right hand side.
* Please write all answers in your own words; do not copy from the self learning materials.
* For question numbers 1 to 4, write your detailed answer in ~500 words.
* For question numbers 5, write your answer in ~200 words.

---

1. Elaborately discuss the GNSS survey planning process with the help of suitable examples and diagrams, wherever required. (15)

2. Explain in detail the GIS data models with the help of neat well labelled diagrams. (15)

3. What is raster analysis? Explain various types of raster operations with the help of neat well labelled diagrams. (15)

4. What is data quality? Explain different components of data quality in GIS. (15)

5. Write short notes on the following:
   a) Location-allocation model (5)
   b) Geocoding (5)
   c) Systems cycle approach (5)
   d) Buffer operation (5)
   e) Organisational aspects of GIS (5)
   f) Structured Query Language (5)
   g) Components of GNSS (5)
   h) Applications of GNSS (5)

*****