

**Assignment Booklet**  
**POST GRADUATE CERTIFICATE IN GEOINFORMATICS**  
**(PGCGI)**

(For learners having taken admission in July 2023 admission cycle  
in the old PGCGI Programme worth 16 Credits)

**ASSIGNMENTS**  
**JANUARY CYCLE**

**Valid from January 1, 2025 to June 30, 2025**

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**



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

**(January to June 2025)**

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 to 6 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 **31<sup>st</sup> March, 2025** (for January 2025 Cycle) if you wish to appear in the **June 2025 TEE**.

**Due Date of Submission\*: For January 2025 Cycle: March 31, 2025**

\* 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

Course Code: MGY-001  
Assignment Code: MGY-001/TMA/2025  
Max. Marks: 100

**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.  
\* Write your answers in about 200 and 500 words for short notes and long answers, respectively.

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1. Give an account of the recent trends and advancements in the field of remote sensing, GIS and photogrammetry. (15)
2. What is the difference between land use and land cover? Discuss Land Use and Land Cover classification systems with emphasis on Indian context. (15)
3. What is a map? Explain its different elements with suitable examples and diagrams. (10)
4. Describe the application potential of geoinformatics in environmental studies. (10)
5. Write short notes on the following:
  - a) Geoinformatics as a multidisciplinary subject (5)
  - b) Criteria for selecting a suitable map projection (5)
  - c) Digital Elevation Model and its sources (5)
  - d) Role of geoinformatics in monitoring, prevention and management of oil spills (5)
  - e) Contour representation for different types of landforms (5)
  - f) Concept of Datum (5)
  - g) Application of geoinformatics in social science studies (5)
  - h) BIP data format (5)
  - i) National agencies dealing with geospatial data (5)
  - j) Role of geoinformatics in atmospheric studies (5)

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# Tutor Marked Assignment

## MGY-002: Remote Sensing and Image Interpretation

Course Code: MGY-002  
Assignment Code: MGY-002/TMA/2025  
Max. Marks: 100

**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.  
\* Write your answers in about 200 and 500 words for short notes and long answers, respectively.

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1. Describe spectral signatures of soils, minerals and rocks and the factors influencing it. (15)  
Support your answer with neat well labelled diagrams, wherever required.
2. Discuss various types of image resolutions giving suitable examples (10)
3. Give an overview of image classification methods. (15)
4. What is geometric error? Describe various techniques used for geometric correction of a remote sensing image. (10)
5. Write short notes on the following:
  - a) Electromagnetic spectrum (5)
  - b) Stefan-Boltzmann and Wien's laws (5)
  - c) Landsat series of satellites (5)
  - d) Indian space programmes (5)
  - e) BSQ data format (5)
  - f) Minimum mappable unit (5)
  - g) Digital image and its types (5)
  - h) Field equipments required for ground truthing (5)
  - i) Image enhancement (5)
  - j) Post classification steps (5)

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# Tutor Marked Assignment

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

Course Code: MGY-003  
Assignment Code: MGY-003/TMA/2025  
Max. Marks: 100

**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.  
\* Write your answers in about 200 and 400 words for short notes and long answers, respectively.

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1. Explain GIS data models. Support your answer with suitable diagrams, wherever necessary. (10)
2. What is data quality? Discuss in detail the data quality issues. (10)
3. Discuss the types of GPS receivers and data format. (10)
4. Explain the various operations in raster and vector analysis. Draw neat well-labelled diagrams, wherever required. (10)
5. Give an account of the applications of GNSS giving suitable examples. (10)
6. Write short notes on the following:
  - a) Map digitisation (5)
  - b) Organisational aspects of GIS (5)
  - c) Format conversion (5)
  - d) Quadtree data structure (5)
  - e) GAGAN (5)
  - f) GLONASS (5)
  - g) Types of database (5)
  - h) Cartographic GIS outputs (5)
  - i) Approaches and models of GIS design (5)
  - j) Sources of errors of DGPS (5)

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