

**PGCGI**

**Assignment Booklet**

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

**ASSIGNMENTS  
JANUARY & JULY 2022 CYCLES**

**Valid from January 1, 2022 to December 31, 2022**

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)**

**(2022)**

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 School of Sciences.

Wishing you all the best to complete the programme successfully.

**Programme Coordinator**  
**PGCGI**  
**School of Sciences**  
**e-mail: [pgcgi@ignou.ac.in](mailto: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: .....

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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, 2022** (for January 2022 Cycle) if you wish to appear in the June 2022 TEE and by **30<sup>th</sup> September, 2022** (for July 2022 Cycle) if you wish to appear in the December 2022 TEE.

**Due Date of Submission\*: For January 2022 Cycle: March 31, 2022  
For July 2022 Cycle: September 30, 2022**

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

# Tutor Marked Assignment

## MGY-001: Introduction to Geoinformatics

Course Code: MGY-001  
Assignment Code: MGY-001/TMA/2022  
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.
  - \* For question numbers 1 to 4, write your detailed answer in ~500 words.
  - \* For question numbers 5, write your answer in ~200 words.
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1. Elaborate the four distinct classification types of map projection with suitable diagrams. (15)
2. Define geospatial data. Explain the two types of spatial data with suitable diagrams as appropriate. (15)
3. Discuss the recent trends and advancements in the field of remote sensing. (15)
4. Describe the role of geoinformatics in land use and land cover studies. (15)
5. Write short notes on the following:
  - a) Types of remote sensing data products (5)
  - b) Identification of physical features in topographical maps (5)
  - c) Mobile GIS (5)
  - d) Indian Space Research Organisation (5)
  - e) Comparison between COTS and FOSS (5)
  - f) Digital Elevation Model (5)
  - g) Visual aspects of maps (5)
  - h) Applications of geoinformatics in flood forecasting (5)

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# Tutor Marked Assignment

## MGY-002: Remote Sensing and Image Interpretation

Course Code: MGY-002  
Assignment Code: MGY-002/TMA/2022  
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.
  - \* For question numbers 1 to 4, write your detailed answer in ~500 words.
  - \* For question numbers 5, write your answer in ~200 words.
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1. Define spectral signature. Describe spectral signature of vegetation and water with the help of neat well labelled diagrams. (15)
2. What is image classification? Explain the methods and steps of supervised image classification. (15)
3. Give an account of elements of image interpretation. (15)
4. What is image enhancement? Describe various techniques of image enhancement. (15)
5. Write short notes on the following:
  - a) Spectral resolution (5)
  - b) Geometric correction (5)
  - c) Importance of ground truth data (5)
  - d) Comparison between TCC and FCC (5)
  - e) Comparison between Across-track and along-track scanners (5)
  - f) Cartosat and Oceansat (5)
  - g) NDVI and its significance (5)
  - h) Electromagnetic spectrum (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/2022  
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.
  - \* For question numbers 1 to 4, write your detailed answer in ~500 words.
  - \* For question numbers 5, write your answer in ~200 words.
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1. Elaborately discuss topological modelling with the help of suitable examples and diagrams, wherever required. (15)
2. Explain in detail the spatial data structure with the help of neat well labelled diagrams. (15)
3. What do you understand by vector analysis? Explain the methods involved in vector analysis with the help of neat well labelled diagrams. (15)
4. Discuss the sources of errors in GPS observation. (15)
5. Write short notes on the following:
  - a. GPS Positioning Service (5)
  - b. GLONASS (5)
  - c. Spiral model (5)
  - d. Components of GIS (5)
  - e. Components of data quality (5)
  - f. Interoperability (5)
  - g. Non-cartographic outputs (5)
  - h. Raster to vector conversion (5)

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