



**Sonopant Dandekar Shikshan Mandali's  
Sonopant Dandekar Arts, V.S. Apte Commerce &  
M.H. Mehta Science College, Palghar**

**Department of Geography**

**Certificate Course**

**In**

**MODERN SURVEYING AND ADVANCED  
DIGITAL CARTOGRAPHY [GIS & GPS]**

**[Geographical Information System & Remote Sensing ]**

**2021-22**

Sonopant Dandekar Shikshan Mandali's  
**SONOPANT DANDEKAR ARTS, V.S. APTE COMMERCE AND  
M.H. MEHTA SCIENCE COLLEGE, Palghar.**  
**Department of Geography Certificate Course**

Date: 12<sup>th</sup> November, 2021

To,  
Dr. Kiran Save  
Principal  
Sonopant Dandekar Arts, V.S. Apte Commerce and  
M.H. Mehta Science College,  
Palghar.

**Subject:** Proposal for Organizing Course in "MODERN SURVEYING AND ADVANCED  
DIGITAL CARTOGRAPHY [GIS & GPS]"

**Name of the Programme:** MODERN SURVEYING AND ADVANCED DIGITAL  
CARTOGRAPHY [GIS & GPS]

**Organizer:** Department of Geography

**Objectives and Learning Outcomes:**

1. To understand basic principles of digital cartography and modern surveying.
2. To train in various cartographic techniques for preparation of maps and diagrams.
3. To acquaint with the skills of modern surveying tools.
4. To know the technical knowhow and develops skills of digital data analysis.
5. To apply the knowledge and skills of digital cartography in preparing maps.
6. To apply digital cartographic skills in understanding of land use, environment and conservation.

**Duration:** - 40 Hrs.

**Eligibility:** - FY / SY/ TYBA Geography or any students interested in GIS

(Geographical Information System) who is 12<sup>th</sup> pass and can be of any stream.

**Fees:** -Rs 200 only.

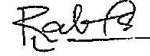
**Intake Capacity:** 30 students

**Total Marks: 100 [50 Marks Theory Exam and 50 Marks Practical work ]**

Kindly give the permission for said course and we look forward for your kind cooperation.

Thanking You,

Yours sincerely.



**Course Coordinator**

**Dr. Rahane Balasaheb Bhaurao**  
**Dept. of Geography**

*Permitted*  
*Kulam*

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## **NOTICE**

### **DEPARTMENT OF GEOGRAPHY**

#### **Certificate Course in**

#### **MODERN SURVEYING AND ADVANCED DIGITAL CARTOGRAPHY [GIS & GPS]**

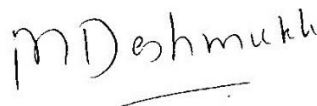
All the students of Senior College are hereby informed that Department of Politics is organizing a **Certificate Course in Modern Surveying and Advanced Digital Cartography [GIS & GPS]** from 17<sup>th</sup> December 2021 for the students interested in digital mapping, computerized cartography and modern methods of surveying.

Enrolment for the above course should be done on or before 15<sup>th</sup> December 2021 at the Dept. of Geography.

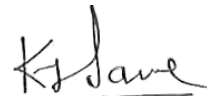
For the payment of Course Fee Rs. 200/- payment contact College Office. After successful completion of the course, participants will get certificate from the college.



**Dr. B B Rahane**  
Assistant Professor,  
Dept. of Geography/ EVS  
Sonopant Dandekar  
College, Palghar



**Prof. Mahesh Deshmukh**  
Vice Principal & IQAC  
Coordinator, Sonopant  
Dandekar College, Palghar



**Dr. Kiran Save**  
Principal Sonopant  
Dandekar College, Palghar  
**PRINCIPAL**  
**Sonopant Dandekar Arts College,**  
**V.S. Apte Commerce College &**  
**M.H. Mehta Science College**  
**PALGHAR (W.R.)**  
**Dist. Palghar, Pin-401404**

## Brochure



Sonopant Dandekar Shikshan Mandali's  
**Sonopant Dandekar Arts, V. S. Apte Commerce and  
M. H. Mehta Science College. Palghar**  
**DEPARTMENT OF GEOGRAPHY**

### **CERTIFICATE COURSE IN MODERN SURVEYING AND ADVANCED DIGITAL CARTOGRAPHY [GIS & GPS]**

#### **Objectives and Learning Outcomes:**

1. To understand basic principles of digital cartography and modern surveying.
2. To train in various cartographic techniques for preparation of maps and diagrams.
3. To acquaint with the skills of modern surveying tools.
4. To know the technical knowhow and develops skills of digital data analysis.
5. To apply the knowledge and skills of digital cartography in preparing maps.
6. To apply digital cartographic skills in understanding of landuse, environment and conservation.

**Duration : - 40 Hrs.**  
**Eligibility: - FY / SY/ TYBA Geography or  
any students interested in GIS  
( Geographical Information System )  
who is 12th pass and can be of any  
stream.**  
**Fees: -Rs 200 only.**

**Course Starting from  
17th December 2021**

**FOR MORE INFO CONTACT NOW  
Dr B. B. RAHANE  
9890817219**

## Course Content

Cartography: concept, history and applications, Maps: Concept, components and types, Preparation and reading of thematic and topographical maps, Digital cartography – concept, components and applications, **Modern Surveying and Mapping- I** Remote Sensing Technology and use of Mobile Applications, Introduction to different android apps to learn world map , Geo tagging and mapping , Measuring of distance and height with the help of mobile apps, **Modern Surveying and Mapping- II** GPS Survey, DGPS (Differential Global positioning System) and GNSS (Global Navigation Satellite System), GPS Area calculation, Drone surveying, Internet in geographical studies, mobile apps for weather data collection. **Practical Component:** Data analysis and representation – SPSS and Excel, Area Calculation Survey and Map preparation, Field visit and Landuse Survey Application of different Android Apps , Google Earth and Open Street Map – Measuring of elevation with the help of Altimeter

**After completion of this course exam will be taken and course completion certificate will be given to students.**

### Certificate Course Syllabus and Expert Committee

Sr. No.	Name	Designation
1.	<b>Dr. Kiran J. Save</b>	Principal, Sonopant Dandekar College, Palghar
2.	<b>Prof. Mahesh Deshmukh</b>	IQAC Cordinator, Sonopant Dandekar College, Palghar
3.	<b>Dr. B. B. Rahane</b>	Course Coordinator, Head, Dept. of Geography
4.	<b>Dr. Hemant M Pednekar</b>	Expert in Cartography Ex. Principal Sonopant Dandekar College, Palghar
5.	<b>Prof. Dnyaneshwar D. Bombe</b>	Expert in GIS and Surveying, Head, Dept. of Geography, Sathye College VileParle , Mumbai

### List of subject teachers / Expertise faculty

Sr. No.	Name of the Subject teacher / Expertise	Topics / subtopics to be teach
1.	<b>Dr. Hemant Pednekar</b> Ex. Principal and Head Dept. Geography, Sonopant Dandekar College, Palghar	Cartography: concept, history and applications , Preparation and reading of thematic and topographical maps,

2.	<b>Dr. B. B. Rahane</b> Course Coordinator, Head, Dept. of Geography	Introduction to different android apps to learn world map, Area Calculation Survey and Map preparation
3.	<b>Prof. Dnyaneshwar D. Bombe</b> Head, Dept. of Geography, Sathye College VileParle, Mumbai	Maps: Concept, components and types, Remote Sensing Technology and use of Mobile Applications, Digital cartography – concept, components and applications, Geo tagging and mapping
4.	<b>Prof Dinesh J Nahire</b> ASC Colleege Onde, Vikramgad	Internet in geographical studies, mobile apps for weather data collection
5.	<b>Dr. Sanjay D Aghav</b> Chetana College , Bandra East Mumbai.	Data analysis and representation – SPSS and Excel



Signature  
Head of the Department  
Department of Management Studies



# Syllabus

## DIGITAL CARTOGRAPHY GIS & RS [Geographical Information System & Remote Sensing]

<b>Syllabus</b>			
<b>Units</b>	<b>Particulars</b>		<b>Total Lectures</b>
<b>Unit I</b>	<b>Introduction to Cartography</b>		
<b>1.1</b>	Cartography: concept, history and applications	<b>02</b>	<b>08</b>
<b>1.2</b>	Maps: Concept, components and types	<b>02</b>	
<b>1.3</b>	Preparation and reading of thematic and topographical maps	<b>02</b>	
<b>1.4</b>	Digital cartography – concept, components and applications	<b>02</b>	
<b>Unit II</b>	<b>Modern Surveying and Mapping- I</b>		
<b>2.1</b>	Remote Sensing Technology and use of Mobile Applications	<b>02</b>	<b>09</b>
<b>2.2</b>	Introduction to different android apps to learn geography	<b>02</b>	
<b>2.3</b>	Geo tagging and mapping	<b>02</b>	
<b>2.4</b>	Measuring of distance and height with the help of mobile apps [Case study on Geo Tagging and use of android apps for geographical study]	<b>03</b>	
<b>Unit III</b>	<b>Modern Surveying and Mapping- II</b>		
<b>3.1</b>	GPS Survey, DGPS and GNSS	<b>03</b>	<b>09</b>
<b>3.2</b>	GPS Area calculation, Drone surveying	<b>02</b>	
<b>3.3</b>	Internet in geographical studies, mobile apps for weather data collection	<b>02</b>	
<b>3.4</b>	Case study on GPS and internet for geographical study	<b>02</b>	
<b>Unit IV</b>	<b>Practical Component</b>		
<b>4.1</b>	Data analysis and representation – SPSS and Excel	<b>04</b>	<b>14</b>
<b>4.2</b>	Area Calculation Survey and Map preparation	<b>03</b>	
<b>4.3</b>	Field visit and Landuse Survey : Application of different Android Apps	<b>03</b>	
<b>4.4</b>	Google Earth and Open Street Map – Measuring of elevation with the help of Altimeter • Field visit and Report Writing	<b>04</b>	

### Students Enrolled for the Course

Sr. No.	Student Name
1	BHANDARI UMESH PRAKASH
2	BHONE SAYLI ASHOK
3	BHURE DNYANESHWARI PRABHAKAR
4	BHUYAL MANALI MANOHAR
5	DHAPSHI ROHIT SURENDRA
6	DHODADE KAILAS SURESH
7	DWIVEDI ASTHA ASHOK
8	GAIKWAD AKASH RAMAKANT
9	GAVIT PRATIK BHARAT
10	HADAL NITESH KRISHNA
11	JADHAV APEKSHA AJAY
12	JADHAV CHAITANYA SOMA
13	KHARPADE KAILAS BABURAV
14	KUDAL POOJA BHAUSAHEB
15	LAHANGE SANYUKTA SHAILESH
16	LILAKA SURAJ RAMA
17	MORI SANJAY SADU
18	PATIL RUCHIKA VASANT
19	PAYAL KIRAN RAJENDRA
20	RATHOD SHRUSHTI RAJESH
21	SAHANI MEENA SURAJBHAN
22	SOMAN RAHUL SANTOSH
23	SUTAR SUMIT JAYRAM
24	TAMBADI AMOL AMRUT
25	TOKARE NIKITA PRAKASH
26	VADHAN KIRAN RAGHUNATH
27	VARTHA SAHIL RAJU
28	WAD DIPAK HARISHCHANDRA
29	YADAV SHRUSHTI RAJENDRA



## ATTENDANCE RECORD

### MODERN SURVEYING AND ADVANCED DIGITAL CARTOGRAPHY

Attendance Record: -

Time: - 3PM TO 5 PM

Attendance			
Sr. No.	Roll No.	Student Name	Signature
1	707	BHANDARI UMESH PRAKASH	<i>Bhandari</i>
2	<del>625</del> 782	BHONE SAYLI ASHOK	ABSENT
3	685	BHURE DNYANESHWARI PRABHAKAR	<i>Bhure</i>
4	622	BHUYAL MANALI MANOHAR	<i>Mr Bhuyal</i>
5	651	DHAPSHI ROHIT SURENDRA	<i>Dhapshi</i>
6	764	DHODADE KAILAS SURESH	<i>Dhodade</i>
7	605	DWIVEDI ASTHA ASHOK	<i>Dwivedi</i>
8	50011	GAIKWAD AKASH RAMAKANT	<i>Gaikwad</i>
9	670	GAVIT PRATIK BHARAT	<i>Gavit</i>
10	648	HADAL NITESH KRISHNA	<i>Hadal</i>
11	701	JADHAV APEKSHA AJAY	<i>Jadhav</i>
12	746	JADHAV CHAITANYA SOMA	<i>Jadhav</i>
13	50009	KHARPADE KAILAS BABURAV	<i>Kharpade</i>
14	603	KUDAL POOJA BHAUSAHEB	<i>P. Kudal</i>
15	684	LAHANGE SANYUKTA SHAILESH	<i>Lahange</i>
16	678	LILAKA SURAJ RAMA	<i>Lilaka</i>
17	709	MORI SANJAY SADU	<i>Mori</i>
18	781	PATIL RUCHIKA VASANT	<i>Patil</i>
19	50012	PAYAL KIRAN RAJENDRA	<i>Payal</i>
20	644	RATHOD SHRUSHTI RAJESH	<i>S. Rathod</i>
21	787	SAHANI MEENA SURAJBHAN	<i>Sahani</i>
22	690	SOMAN RAHUL SANTOSH	<i>Soman</i>
23	664	SUTAR SUMIT JAYRAM	<i>Sutar</i>
24	667	TAMBADI AMOL AMRUT	<i>Tambadi</i>
25	647	TOKARE NIKITA PRAKASH	<i>Nikita</i>
26	777	VADHAN KIRAN RAGHUNATH	<i>Vadhan</i>
27	679	VARTHA SAHIL RAJU	<i>Sahil</i>
28	694	WAD DIPAK HARISHCHANDRA	<i>Wad</i>
29	610	YADAV SHRUSHTI RAJENDRA	<i>Yadav</i>
30	Ep.	Dole Vivek [Ex Studenet]	<i>Dole</i>

**Sonopant Dandekar Arts, V S Apte Com. & M H Mehta Science College,  
Palghar**

**Department of Geography Certificate Course – 2021-22**

**MODERN SURVEYING AND ADVANCED DIGITAL CARTOGRAPHY**

Attendance Record :- 2021-22

Time:- 3 to 5 pm

Sr. No.	Roll No.	Student Name	Date	Date	Date	Date
1	407	BHANDARI UMESH PRAKASH	<u>Um</u>	<u>Um</u>	<u>Um</u>	<u>Um</u>
2		BHONE SAYLI ASHOK				
3	635	BHURE DNYANESHWARI PRABHAKAR	<u>Bhure</u>	<u>Bhure</u>	<u>Bhure</u>	
4	622	BHUYAL MANALI MANOHAR	<u>Mr Bhuyal</u>	<u>Mr Bhuyal</u>	<u>Mr Bhuyal</u>	<u>Mr Bhuyal</u>
5	651	DHAPSHI ROHIT SURENDRA	<u>Elhit</u>		<u>Elhit</u>	<u>Elhit</u>
6	464	DHODADE KAILAS SURESH		<u>Dhodade</u>	<u>Dhodade</u>	<u>Dhodade</u>
7	605	DWIVEDI ASTHA ASHOK	<u>Astha</u>	<u>Astha</u>	<u>Astha</u>	<u>Astha</u>
8	50011	GAIKWAD AKASH RAMAKANT	<u>Arkas</u>	<u>Arkas</u>	<u>Arkas</u>	<u>Arkas</u>
9	670	GAVIT PRATIK BHARAT	<u>Pratik</u>		<u>Pratik</u>	<u>Pratik</u>
10	648	HADAL NITESH KRISHNA	<u>Nitesh</u>	<u>Nitesh</u>	<u>Nitesh</u>	<u>Nitesh</u>
11	701	JADHAV APEKSHA AJAY	<u>Apeksha</u>	<u>Apeksha</u>	<u>Apeksha</u>	<u>Apeksha</u>
12	746	JADHAV CHAITANYA SOMA		<u>Chaitanya</u>	<u>Chaitanya</u>	<u>Chaitanya</u>
13	50009	KHARPADE KAILAS BABURAV	<u>Karsh</u>		<u>Karsh</u>	
14	603	KUDAL POOJA BHAUSAHEB	<u>P. B. Kudal</u>	<u>P. B. Kudal</u>		<u>P. B. Kudal</u>
15	684	LAHANGE SANYUKTA SHAILESH	<u>Lahange</u>	<u>Lahange</u>		<u>Lahange</u>
16	678	LILAKA SURAJ RAMA	<u>Shilka</u>	<u>Shilka</u>	<u>Shilka</u>	<u>Shilka</u>
17	709	MORI SANJAY SADU	<u>Sanjay</u>	<u>Sanjay</u>	<u>Sanjay</u>	<u>Sanjay</u>
18	781	PATIL RUCHIKA VASANT	<u>Ruchika</u>	<u>Ruchika</u>		<u>Ruchika</u>
19	50012	PAYAL KIRAN RAJENDRA	<u>Payal</u>		<u>Payal</u>	
20	644	RATHOD SHRUSHTI RAJESH	<u>S. Rathod</u>		<u>S. Rathod</u>	<u>S. Rathod</u>
21	787	SAHANI MEENA SURAJBHAN	<u>Meena</u>	<u>Meena</u>	<u>Meena</u>	
22	690	SOMAN RAHUL SANTOSH	<u>Roman</u>	<u>Roman</u>	<u>Roman</u>	
23	664	SUTAR SUMIT JAYRAM		<u>S. E</u>	<u>S. E</u>	<u>S. E</u>
24	667	TAMBADI AMOL AMRUT	<u>Ambadi</u>	<u>Ambadi</u>	<u>Ambadi</u>	<u>Ambadi</u>
25	647	TOKARE NIKITA PRAKASH	<u>Nikita</u>		<u>Nikita</u>	<u>Nikita</u>
26	777	VADHAN KIRAN RAGHUNATH	<u>Ravadhan</u>		<u>Ravadhan</u>	<u>Ravadhan</u>
27	679	VARTHA SAHIL RAJU	<u>Sahil</u>	<u>Sahil</u>		<u>Sahil</u>
28	694	WAD DIPAK HARISHCHANDRA	<u>Dipak</u>	<u>Dipak</u>	<u>Dipak</u>	<u>Dipak</u>
29	610	YADAV SHRUSHTI RAJENDRA	<u>Yadav</u>	<u>Yadav</u>	<u>Yadav</u>	<u>Yadav</u>

Dr. B. B. Rahane

Dr. B. B. Rahane

## Syllabus Covered

Units	Details	Date	Time	Name of the Teacher
<b>Unit I</b>	<b>Introduction to Cartography</b>			
<b>1.1</b>	Cartography: concept, history and applications	18/12/2021	3 pm to 5 pm	Dr. HMP
<b>1.2</b>	Maps: Concept, components and types	19/12/2021	3 pm to 5 pm	Prof. D.D. Bombe
<b>1.3</b>	Preparation and reading of thematic and topographical maps	02/01/2022	3 pm to 5 pm	Prof. D.D. Bombe
<b>1.4</b>	Digital cartography – concept, components and applications	03/01/2022	3 pm to 5 pm	Prof. D.D. Bombe
<b>Unit II</b>	<b>Modern Surveying and Mapping- I</b>	02/01/2022		
<b>2.1</b>	Remote Sensing Technology and use of Mobile Applications	03/01/2022	3 pm to 5 pm	Prof. D.D. Bombe
<b>2.2</b>	Introduction to different android apps to learn world map	04/01/2022	3 pm to 5 pm	Dr. BBR
<b>2.3</b>	Geo tagging and mapping		3 pm to 5 pm	Prof. DDB
<b>2.4</b>	Measuring of distance and height with the help of mobile apps	13/01/2022	3 pm to 5 pm	Dr. BBR
	<b>[Case study on Geo Tagging and use of android apps for geographical study]</b>	14/01/2022	9:30am to 3:30am	Dr. BBR
<b>Unit III</b>	<b>Modern Surveying and Mapping- II</b>	21/01/2022		
<b>3.1</b>	GPS Survey, DGPS and GNSS	22/01/2022	3 pm to 5 pm	Prof. DDB
<b>3.2</b>	GPS Area calculation, Drone surveying	29/01/2022	3 pm to 5 pm	Prof. DDB
<b>3.3</b>	Internet in geographical studies, mobile apps for weather data collection	14/01/2022	3 pm to 5 pm	Dr. BBR
<b>3.4</b>	<b>Case study on GPS and internet for geographical study</b>	21/01/2022	9:30am to 3:30am	Prof. DDB
<b>Unit IV</b>	<b>Practical Component</b>	22/01/2022		
<b>4.1</b>	Data analysis and representation – SPSS and Excel	29/01/2022	3 pm to 5 pm	Prof. DDB
<b>4.2</b>	Area Calculation Survey and Map preparation	30/01/2022	3 pm to 5 pm	Dr. BBR
<b>4.3</b>	Field visit and Landuse Survey : Application of different Android Apps	02/02/2022	3 pm to 5 pm	Prof. DDB
<b>4.4</b>	Google Earth and Open Street Map – Measuring of elevation with the help of Altimeter	03/02/2022	3 pm to 5 pm	Prof. DDB
	<b>Field visit and Report Writing</b>	10/02/2022		Dr. BBR & Prof. DDB

## Report

The course on Cartography and Modern Surveying provided students with a comprehensive understanding of cartographic concepts, history, applications, and modern surveying techniques. It covered various topics including thematic and topographical map preparation, digital cartography, remote sensing technology, GPS surveying, and the use of mobile applications in geographical studies.

The Department of Politics at Senior College organized a Certificate Course in Modern Surveying and Advanced Digital Cartography [GIS & GPS]. The course commenced on 17th December 2021 and was aimed at students interested in digital mapping, computerized cartography, and modern surveying methods.

### Course Overview

Duration: - 40 Hrs.

(Geographical Information System) who is 12<sup>th</sup> pass and can be of any stream.

Fees: -Rs 200 only.

Intake Capacity: 30 students

Total Marks: 100 [50 Marks Theory Exam and 50 Marks Practical work]

Upon successful completion, participants received a certificate from the college, marking their achievement in the field of modern surveying and digital cartography.



Signature

Head of the Department

Department of Management Studies

SONOPANT DANDEKAR SHIKSHAN MANDALI'S

**S.D. ARTS, V.S. APTE COMMERCE & M.H. MEHTA SCIENCE  
COLLEGE, PALGHAR**



HIGHER EDUCATION TO ALL

This is to certify that Mr. / Miss Shikha Susai Rama  
Has successfully completed two month certificate course in

**GEOGRAPHIC INFORMATION SYSTEMS  
&  
BASIC REMOTE SENSING**

Organized by  
DEPARTMENT OF GEOGRAPHY  
COLLABORATION WITH MR.PRANAV RAUT, GIS CONSULTANT

*Pranav*  
HEAD OF DEPARTMENT

*Pranav*  
GIS CONSULTANT

*Kiran*  
PRINCIPAL

Date : 15-2-22