



**Vishwaniketan's**  
**Institute of Management Entrepreneurship & Engineering Technology**  
**[iMEET]**

**Date-** 21/01/2020

**Notice**

**Subject-** Regarding surveying subject feedback

All the second year students are hereby informed that, kindly give your valuable feedback on surveying subject on or before on 28/01/2020. Also, collect feedback form from subject faculty.

  
**Subject Faculty**



**HOD**

**Civil Department**  
**Head of Department**  
**Civil Engineering**  
**Vishwaniketan's iMEET**

  
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## Semester- IV

Course Code	Course Name	Credits
CEC403	Surveying	03

Contact Hours			Credits Assigned			
Theory	Practical	Tutorial	Theory	Practical	Tutorials	Total
03	-	-	03	-	-	03

Theory					Term Work/Practical/Oral			Total
Internal Assessment			End Sem. Exam	Duration of End Sem. Exam	TW	PR	OR	
Test-I	Test-II	Average						
20	20	20	80	03 hrs	-	-	-	100

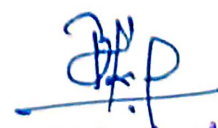
## Rationale

As it is always said “well begun is half done”. All civil engineering projects such as buildings, roads, bridges, railways, airports, dams, water treatment plants, sewage treatment plants begin with surveying. Knowledge of surveying is thus fundamental and very useful to all civil engineers. In this course, the students are well informed about the principles and methods of surveying. The students are made conversant with various instruments which are used in the field to take measurements for preparation of drawings. The course introduces the advancements in instruments and methods of surveying. The study deals with the methods of computing land areas and volume of earthworks. The course also covers horizontal and vertical curves.

## Objectives

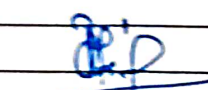
The students will be able to learn:

1. The basic principles and classification of surveying.
2. Various methods of measurements in surveying.
3. The appropriate techniques of surveying and skills of collecting field data for preparing drawings.
4. Advancements in instruments and methods of surveying.
5. The methods of computing areas and volumes using the site specific data for various purposes.
6. The setting out techniques of curves.



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Module	Course Modules/ Contents	Periods
1	<b>Introduction</b>	5
	1.1 Definition, principles, objectives, fundamental classification-plane and geodetic.	
	1.2 Chaining, Ranging and offsetting: Definitions, Principles, Instruments required, Obstacles, conventional signs and symbols.	
	1.3 Bearings - Different types, compass - prismatic, surveyor, dip, declination and local attraction, compass traversing	
2	<b>Levelling and Contouring</b>	8
	2.1 Definitions, basic terms, types of instruments-dumpy level and Auto level, principal axes of dumpy level, temporary and permanent adjustments	
	2.2 Booking and reduction of levels, plane of collimation (HI) and rise-fall methods, computation of missing data, distance to the visible horizon, corrections due to curvature and refraction, reciprocal levelling, Numerical problems	
	2.3 Differential levelling, profile levelling, fly levelling, check levelling, precise levelling, sources of errors, difficulties in levelling work, corrections and precautions work in levelling	
	2.4 Contouring: terms, contour, contouring, contour interval, horizontal equivalent Direct and indirect methods of contouring, interpolation of contours, uses of Contours and characteristics of contour lines. Grade contour	
3	<b>Theodolite Surveying</b>	8
	3.1 Various parts and axes of transit, technical terms, temporary and permanent adjustments of a transit, measurement of horizontal and vertical angles, Methods of repetition and reiteration.	
	3.2 Different methods of running a theodolite traverse, Latitudes and departures, rectangular coordinates, traverse adjustments by Bowditch's, transit and Modified transit rules, Gales Traverse Table, Numerical Problems.	
	3.3 Miscellaneous use of theodolite for various works such as prolongation of a straight line, setting out an angle, bearing measurements, Omitted measurements, Problems in using theodolite traversing, errors in theodolite traversing.	
4	<b>Indirect and Advanced Methods of Measurement</b>	7
	4.1 Tacheometry-Principle, Objective, Suitability and different methods of tacheometry, Stadia formula, Radial contouring , numerical on stadia method only	
	4.2 Electronic Distance Measurement: Working Principles, types, applications in surveying	
	Total Station- Working Principles, applications in surveying	
	4.3 Introduction to GPS	
	<b>Plane Table Surveying, Areas and Volumes</b>	5

  
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5	5.1	Definition, principle, accessories required for plane table surveying, merits and demerits, temporary adjustments, Different methods of plane table surveying	
	5.2	Areas: Area of an irregular figure by trapezoidal rule, average ordinate rule, Simpson's 1/3 rule, various coordinate methods. Planimeter: types including digital planimeter, area of zero circle, uses of planimeter.	
	5.3	Volumes: Computation of volume by trapezoidal and prismoidal formula, volume from spot levels, volume from contour plans.	
6	<b>Curves</b>		6
	6.1	Horizontal Curves-Definitions of different terms, necessity and types of curves. Methods of setting out Simple circular curves- linear methods and Angular methods (Numericals on simple circular curves only)	
	6.2	Vertical curves- Definitions, geometry and types. Tangent correction and chord gradient methods.	
<b>Total</b>			<b>39</b>

### Contribution to Outcomes

After completion of the course, the learner will be able to:

1. 1. Apply the principles of surveying and field procedures to conduct the various surveys
2. Use various methods for taking linear and angular measurements
3. Collect, record and analyse the field data for preparing drawings.
4. Explain the advancements in instruments and methods
5. 5. Calculate the area of land and volume of earthwork
6. Set out curves

#### Internal Assessment (20 marks):

Consisting **Two Compulsory Class Tests:**

First test based on approximately 40% of the contents and second test based on remaining contents (approximately 40% but excluding contents covered in Test I)

#### End Semester Examination (80 marks):

Weightage of each module in end semester examination will be proportional to number of respective lecture hours mentioned in the curriculum

1. The question paper will consist of **six questions, each carrying 20 marks.**
2. **Question 1** will be **compulsory** and should cover **maximum contents of the curriculum**
3. **Remaining questions will be mixed in nature** (for example if Q.2 has part (a) from module 3 then part (b) will be from any other module other than module 3 )
4. Only **Four** questions need to be solved.

#### Recommended Books:

1. Surveying and Levelling: R. Agor, Vol. -I, 11<sup>th</sup> Edition, Khanna Publishers (ISBN8174092358)

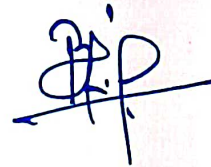
  
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2. Surveying and Levelling: Kanetkar and Kulkarni, Vol. -I, 24<sup>th</sup> Edition, Pune Vidyarthi Griha, Pune. (ISBN 8185825114)
3. Surveying and Levelling: Dr. B.C. Punmia, Vol.-I, 16<sup>th</sup> Edition, Vol. -II 4<sup>th</sup> Edition, Laxmi Publications (ISBN 9788170088530)
4. Surveying and Levelling: N N Basak, 2<sup>nd</sup> Edition, Tata McGraw Hill, New Delhi. (ISBN 9789332901537)

**Reference Books:**

1. Surveying: Volume -I: Dr K.R. Arora, Standard Book House.
2. Surveying and Levelling (2nd Edition): R. Subramanian; Oxford Higher Education.
3. Surveying and Levelling (Vol.-I): S.K. Duggal, Tata McGraw Hill
4. Textbook of Surveying, C Venkatramaiah, University Press, Hyderabad, Latest Edition
5. Fundamentals of Surveying, S.K. Roy, Prentice Hall India, New Delhi
6. Surveying for Engineers, John Uraine and Bill Price, Palgrave Macmillan
7. Surveying: Theory and Practice, James Anderson, Edward M. Mikhail, Tata McGraw Hill

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## Student Subject Feedback Form

Name of Student Prasad S. Patil

Course and Branch SE

Subject Name:- Survey

Roll No.

Date:- 24 Feb 2020

		Very Good	Good	Average	Acceptable	Poor
		1	2	3	4	5
1.	Is the syllabus creating interest in you?		✓			
2.	Is there link between the chapters?	✓				
3.	Are reference books available?		✓			
4.	Did the syllabus fulfil the expectations?	✓				
5.	How was the syllabus overall?		✓			

Suggestion: Related sessions like this are required.

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## Student Subject Feedback Form

Name of Student Prathmesh More

Course and Branch S.E. CIVIL

Subject Name:- surveying

Roll No. 05

Date:- 25 Feb 2020

		Very Good	Good	Average	Acceptable	Poor
		1	2	3	4	5
1.	Is the syllabus creating interest in you?		✓			
2.	Is there link between the chapters?	✓				
3.	Are reference books available?			✓		
4.	Did the syllabus fulfil the expectations?		✓			
5.	How was the syllabus overall?			✓		

Suggestion: Need to practical course improvement.  
total station operating knowledge required  
so conducting total station hands on workshop or session

  
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# Student Subject Feedback Form

Name of Student Mane Prizanka

Course and Branch SE, Civil.


Subject Name:- Surveying.

Roll No.

Date:- 25th Feb 20

		Very Good	Good	Average	Acceptable	Poor
		1	2	3	4	5
1.	Is the syllabus creating interest in you?		✓			
2.	Is there link between the chapters?	✓				
3.	Are reference books available?	✓				
4.	Did the syllabus fulfil the expectations?		✓			
5.	How was the syllabus overall?		✓			

Suggestion: More hands on training sessions are  
required

  
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# Student Subject Feedback Form

Name of Student Janardan J. Hambhe

Course and Branch - SE

Subject Name:- surveying

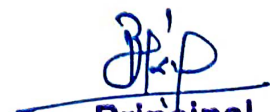
Roll No.

Date:- 25 Jan

		Very Good	Good	Average	Acceptable	Poor
		1	2	3	4	5
1.	Is the syllabus creating interest in you?	✓				
2.	Is there link between the chapters?		✓			
3.	Are reference books available?		✓			
4.	Did the syllabus fulfil the expectations?		✓			
5.	How was the syllabus overall?	✓				

Suggestion: -----

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## Analysis of Feedback by Students on Surveying

Feedback was collected from the Students on curriculum. A five-point scale feedback form on curriculum was developed for the same. We had received a total of 50 responses from the students of SE Civil programme on the curriculum designed by Mumbai University.

**Table showing Feedback by Students on Subject of Surveying**

Sr. No	Particulars	Response in %				
		Very Good	Good	Average	Acceptable	Poor
		1	2	3	4	5
1.	Is the syllabus creating interest in you?	30	12	7	1	1
2.	Is there link between the chapters?	24	10	6	10	0
3.	Are reference books available?	25	14	8	3	0
4.	Did the syllabus fulfil the expectations?	35	5	4	6	0
5.	How was the syllabus overall?	42	8	0	0	0

  
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Most of the students are of the opinion that the syllabus is interesting with a good link between the chapters. Few of the students felt that more reference books could be made available. Overall, the syllabus was able to meet the expectations of the students.

### Feedback from students

1. The content is well organized and focused on practical situations.
2. Very good hands on training.
3. I enjoyed the course and learned a lot from it. The content is well organized and focused on practical situation.

Following are the suggestion received from students which was based on surveying syllabus.

1. Actual field experience is required to use need hands on Training.
2. Acquire skill for handling the instrument.
3. Knowledge about modern instruments and practice to handling and actual application.

  
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