SKIKSHAN MANDAL, KARAD

MAHILA MAHAVIDYALAYA, KARAD

Centre for Skill Development

Certificate Course in Geographical Information System

Objectives:

1. To Introduce new aspects of G.I.S. field to Students.
2. To enhance G.I.S. software proficiency of students.
3. To enhance employability of students.

Fees: 1000/-

Duration of the Course: 5 Weeks

Batch size: 20

Syllabus:

1. **Remote Sensing : 8 Hrs**
   - Remote Sensing – Definition and History of R.S.
   - Basic Concepts –
   - Electro Magnetic Energy
   - Wavelength
   - Velocity
   - Frequency
   - **Interaction of E.M.R.**
   - Transmission of Energy
   - Absorption of Energy
   - Emittance of Energy
   - Scattering of Energy
   - Reflection of Energy
   - Electromagnetic Spectrum
   - Gamma to Radio waves
   - Remote Sensing System
   - Sources of Energy
   - Types of R.S. – Active and Passive R.S.
   - Aerial Camera
   - Types of Camera – Panchromatic (B&W)

- Color Camera
- Infrared Camera
- Types of Sensor
- Active Sensor
- Passive Sensor
- Types of Aerial Photographs
- Based on Angle –
- Vertical , Oblique, High Oblique
- Based on Scale –
- Large Scale, Medium Scale, Small Scale
- Satellite R.S.
- Types of Satellite
- Marginal Information on Imagery and Elements of Visual Interpretation
- Marginal Information – Fiducial Marks, Nadir Point, Principal Point etc.
- Elements of Visual Interpretation
- Tone/ Color
- Texture
- Size
- Shape
- Shadow
- Pattern
- Association

2. Global Pensioning System G.P.S. 3 Hrs

- Definition, History & Development of GPS
- GPS systems of Various Countries
- Segments of GPS
  Space Segment
  Control Segment
  User Segment
- Working Principal of GPS
  Triangulation Principal
- Sources of GPS Errors
  Satellite Geometry, Optical Error, Atmospheric Error, Clock Error,
- Application of GPS
  Civilian, Navigation, Cartography, Emergency Services, Military Application

3. Geographical Information System GIS : 7 Hrs

- Definition and Scope of GIS
- Components of GIS
  Hardware, Software, Data, Method, People

- Nature of Geographic Data
  Raster Data and Vector Data
- Functioning of GIS
- Data Capture
- Data Transfer
- Data Editing
- Data Verification
- Data Deriving
- Data Presentation
- Introduction to GIS Software
- India in GIS
- GIS policy
- Application of GIS
- **PRACTICAL WORK : 2 Week**
- Study of Stereographic Images
- Interpretation of air photographs and satellite imageries (LANDSAT, SPOT,
- IRS, CARTOSAT, NOAA)
- Handheld Practical of GPS
- GIS work with Gmap GIS, gVSIG, Falcon View, Google Maps, Bhuvan Geoportal etc