



AMRITA
VISHWA VIDYAPEETHAM
DEEMED TO BE UNIVERSITY

School For
**Sustainable
Futures**

DIGITAL AGRICULTURE INTERNSHIP

Community-Centered Data Collection,
Analytics & Visualization



DURATION

4 Weeks

(20 Working Days)

December 2026



COURSE FEE

₹15,000

per student

Includes Food & Accommodation



**REAL-WORLD
EXPERIENCE**

Work with real datasets
and rural communities



**TECHNOLOGY
IN ACTION**

IoT, GIS, Remote Sensing,
Python and more



**COMMUNITY
IMMERSION**

Live-in-Labs® and
field engagement



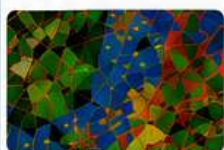
DATA TO IMPACT

Transform data into
insights for better
agricultural decisions

WHAT YOU WILL LEARN



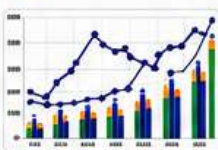
**GIS & REMOTE
SENSING**



- QGIS & Google Earth Engine
- Sentinel-2, Landsat, MODIS
- Land-use / land-cover mapping
- NDVI, EVI, NDWI, SAVI
- Spatial analysis



**CLIMATE &
AGRICULTURAL DATA**



- ERA5, NASA POWER
- IMD rainfall, CHIRPS
- Climate data extraction & analysis
- Rainfall & temperature variability



**IOT & ENVIRONMENTAL
MONITORING**



- ESP32 / Arduino
- Temperature, humidity, soil moisture, rainfall, light
- Data logging & cloud storage
- Sensor calibration



**PYTHON &
DATA ANALYTICS**



- Python for data analysis
- Pandas & data preprocessing
- Time-series analysis
- Data quality control



**DATA VISUALIZATION
& DASHBOARDS**



- Interactive visualizations
- Plotly & Streamlit
- Dashboard development
- Communicating insights



**COMMUNITY ENGAGEMENT
& LIVE-IN-LABS®**



- PRA tools & techniques
- Community interaction
- Field data collection
- Local knowledge integration

INTEGRATED DIGITAL AGRICULTURE PROJECT



IoT
Observations

+



GIS &
Remote Sensing

+



Climate
Data

+



Field & Community
Observations

+



Python
Analytics

A community-focused project integrating multiple datasets to develop data-driven recommendations for sustainable agriculture.

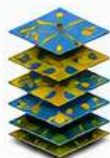
KEY DELIVERABLES

- ✓ Processed datasets (IoT, GIS, Climate, etc.)
- ✓ Data visualizations / interactive dashboard
- ✓ Technical project report
- ✓ Final project presentation



DATASETS

- IoT sensor observations
- Sentinel-2 • Landsat • MODIS
- ERA5 • NASA POWER
- IMD rainfall • CHIRPS
- Soil maps • DEM
- Village boundaries
- Farmer & community survey data



TOOLS & TECHNOLOGIES



Python



QGIS



Google
Earth Engine



Pandas



Plotly



Streamlit



ThingSpeak



Firebase



ESP32/Arduino

EXPECTED OUTCOMES

- ✓ Practical skills in data extraction & analysis
- ✓ Hands-on experience in field data collection
- ✓ Proficiency in IoT, GIS, RS & climate data
- ✓ Ability to build dashboards & visualize data
- ✓ Develop data-driven solutions for real-world agricultural challenges



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