

National Occupational Standards



Satellite Data Analysis for Crop Management

Unit Code: AGR/N1051

Version: 1.0

NSQF Level: 4.5

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Description

This OS unit is about collating, evaluating and analyzing the satellite data for making informed decision for efficient crop management practices.

Scope

The scope covers the following :

- Access and collate data
- Evaluate data
- Analyse and interpret data for crop monitoring

Elements and Performance Criteria

Access and collate data

To be competent, the user/individual on the job must be able to:

- PC1.** Assess the relevant sources and download the data satellite images
- PC2.** Apply the appropriate preprocessing steps to enhance the quality and resolution of the images
- PC3.** Ensure data collected is from relevant sources
- PC4.** Monitor appropriateness of data and record during collection
- PC5.** Review information using appropriate methods and technologies
- PC6.** Store data by appropriate electronic means
- PC7.** Ensure the satellite data is updated on regular basis

Evaluate data

To be competent, the user/individual on the job must be able to:

- PC8.** Organise and review data
- PC9.** Seek clarification and assistance where data is unclear or difficult to interpret
- PC10.** Obtain and review additional data as required

Analyse and interpret data

To be competent, the user/individual on the job must be able to:

- PC11.** Extract the spectral indices that are relevant for crop monitoring
- PC12.** Analyse spectral indices using appropriate statistical and analytical techniques to identify trends, anomalies, and correlations
- PC13.** Generate maps and charts to visualize the spatial and temporal patterns of crop growth, health, and stress
- PC14.** Interpret the results and provide recommendations for crop health monitoring and management, such as irrigation, fertilization, pest control, Yield & growth stage, etc.
- PC15.** Evaluate the accuracy and reliability of satellite data analysis results
- PC16.** Document and report findings based on the analysis and interpretation of the data
- PC17.** Communicate the satellite data analysis results and recommendations to relevant stakeholders
- PC18.** Obtain feedback and comments on suitability and sufficiency of findings

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PC19. Retrieve data for reference as required

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** sensitive data collection, access and storage techniques
- KU2.** Satellite data collection techniques and procedures
- KU3.** data recording and evaluation techniques
- KU4.** data storage and retrieval methods
- KU5.** data storage and retrieval methods
- KU6.** data reporting and presentation formats
- KU7.** methods to collect and analyse data, relevant to the enterprise
- KU8.** significance, validity and reliability for recommendations
- KU9.** Various spectral indices of crop monitoring

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** make work-related notes
- GS2.** read the relevant literature to get the latest updates and information about new technologies
- GS3.** communicate professionally with clients and co-workers as per the business code of conduct
- GS4.** communicate professionally with clients and co-workers as per the business code of conduct
- GS5.** plan and schedule tasks to ensure timely completion
- GS6.** identify possible disruptions to work and take preventive measures
- GS7.** apply domain knowledge and experience to suggest appropriate solutions to customers
- GS8.** take quick decisions in case of any emergencies/ accidents

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Access and collate data</i>	5	5	-	10
PC1. Assess the relevant sources and download the data satellite images	-	-	-	-
PC2. Apply the appropriate preprocessing steps to enhance the quality and resolution of the images	-	-	-	-
PC3. Ensure data collected is from relevant sources	-	-	-	-
PC4. Monitor appropriateness of data and record during collection	-	-	-	-
PC5. Review information using appropriate methods and technologies	-	-	-	-
PC6. Store data by appropriate electronic means	-	-	-	-
PC7. Ensure the satellite data is updated on regular basis	-	-	-	-
<i>Evaluate data</i>	10	10	-	10
PC8. Organise and review data	-	-	-	-
PC9. Seek clarification and assistance where data is unclear or difficult to interpret	-	-	-	-
PC10. Obtain and review additional data as required	-	-	-	-
<i>Analyse and interpret data</i>	20	15	-	15
PC11. Extract the spectral indices that are relevant for crop monitoring	-	-	-	-
PC12. Analyse spectral indices using appropriate statistical and analytical techniques to identify trends, anomalies, and correlations	-	-	-	-
PC13. Generate maps and charts to visualize the spatial and temporal patterns of crop growth, health, and stress	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Interpret the results and provide recommendations for crop health monitoring and management, such as irrigation, fertilization, pest control, Yield & growth stage, etc.	-	-	-	-
PC15. Evaluate the accuracy and reliability of satellite data analysis results	-	-	-	-
PC16. Document and report findings based on the analysis and interpretation of the data	-	-	-	-
PC17. Communicate the satellite data analysis results and recommendations to relevant stakeholders	-	-	-	-
PC18. Obtain feedback and comments on suitability and sufficiency of findings	-	-	-	-
PC19. Retrieve data for reference as required	-	-	-	-
NOS Total	35	30	-	35

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National Occupational Standards (NOS) Parameters

NOS Code	AGR/N1051
NOS Name	Satellite Data Analysis for Crop Management
Sector	Agriculture
Sub-Sector	
Occupation	Precision Farming
NSQF Level	4.5
Credits	1.25
Minimum Job Entry Age	NA
Minimum Educational Qualification & Experience	<p>Completed 1st year of UG (UG Certificate) (or equivalent) OR Completed 3 year diploma after 10th (in Agriculture/Horticulture/Forestry/Agriculture Engineering/Veterinary Sciences/Animal Husbandry/Diary Technology) OR Completed 2nd year diploma after 12th (in Agriculture/Horticulture/Forestry/Agriculture Engineering/Veterinary Sciences/Animal Husbandry/Diary Technology) OR 12th grade Pass (or equivalent) OR 10th grade pass OR Previous relevant Qualification of NSQF Level (4) OR Previous relevant Qualification of NSQF Level (3.5) with 3 Years of experience relevant experience in Agriculture and allied sectors</p>
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQF Clearance Date	30/04/2024
Reference code on NQR	NG-4.5-AG-02545-2024-V1-ASCI



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CCN Category	1