



# Indra Ganesan

## COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai  
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

# NAAC DOCUMENTS

## QUALITY INDICATOR FRAME WORK

### CRITERION – 1

## CURRICULAR ASPECTS

SUBMITTED BY

**IQAC**

INTERNAL QUALITY ASSURANCE CELL

**INDRA GANESAN COLLEGE OF ENGINEERING**





**DEPARTMENT OF AGRICULTURAL ENGINEERING**

**ACADEMIC YEAR 2022-2023 / ODD SEMESTER**

**1.2 Academic Flexibility (30)**

**1.2.1 Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)**

**AND**

**1.2.2 Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years**

<b>VAC Title:</b>	<b>Vertical Farming</b>				
<b>Resource Person:</b>	<b>Mr.R.Sankar, CEO,</b> <b>N.Ramachandran, HR,</b> <b>Sri Enterprise Agro Industries Corporation</b> <b>Trichy</b>				
<b>Date of conduct from:</b>	<b>01.08.2022</b>	<b>To:</b>	<b>05.08.2022</b>	<b>Duration:</b>	<b>30 Hours</b>
<b>Organized Department:</b>	<b>DEPARTMENT OF AGRICULTURAL ENGINEERING</b>				
<b>Participant Year:</b>	<b>CIVIL-III</b> <b>AGRI-II</b>	<b>Semester:</b>	<b>ODD</b>	<b>No. of Students Registered:</b>	<b>24</b>
<b>Venue:</b>	<b>AGRI SEMINAR HALL</b>				

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## COLLEGE OF ENGINEERING

Madurai Main Road (NH-45B), Manikandam, Tiruchirappalli - 620 012  
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Ref: IGCE/AGRI/2022-23/VAC/01

DATE: 22.07.2022

### Department of Agricultural Engineering

Academic year 2022-2023 odd semesters

#### DEPARTMENT CIRCULAR

Department of Agricultural Engineering and IQAC, IGCE in association with Sri Enterprise Agro Industries Corporation is going to organize Value Added Course for all second, third year students on "VERTICAL FARMING" from 01.08.2022 to 05.08.2022. Certificates will be issued to the eligible participants at the end of the course. This training is to be provided in our campus.


Resource person Details:	Mr.R.Sankar, CEO, N.Ramachandran, HR, Sri Enterprise Agro industries corporation Trichy
Venue:	Civil Seminar Hall

  
HOD/AGRI

  
Principal

#### Cc:

- Principal Office
- HOD/Agri & Faculty Members
- All II,III B.TECH AgriClasses
- IQAC Coordinator
- Notice Board
- Office File

  
Dr. G. Balakrishnan, M.E., Ph.D.,  
Principal  
Indra Ganesan College of Engineering  
IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.



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## COLLEGE OF ENGINEERING

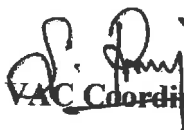
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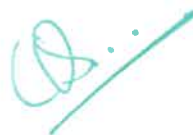


### Value Added Course on "VERTICAL FARMING"

#### SYLLABUS

S.NO	TOPIC COVERED	DURATION (in hours)	DATE
1.	Introduction for Agricultural Engineering, farmhouse requirements in India	3	01.08.2022
2.	Farmhouse Requirements In India	3	01.08.2022
3.	Origins of Vertical Farming, Types of Vertical Farms, Specialization of vertical farming house	3	02.08.2022
4.	Implementation vertical farming house	3	02.08.2022
5.	Advantages and Disadvantages of Vertical Farming	3	03.08.2022
6.	What are the Accessories available in market from vertical farm house? Techniques of Vertical Farming	3	03.08.2022
7.	Techniques of Vertical Farming	3	04.08.2022
8.	How to build vertical farming house,	3	04.08.2022
9.	Principles of vertical farming house	3	05.08.2022
10.	Conclusion of vertical farming house	3	05.08.2022
11.	Exam	1	05.08.2022
<b>Total Hours</b>		30(Excluding test)	-

  
VAC Coordinator



**Dr. G. Balakrishnan, M.E., Ph.D.,**  
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HoD/AGRI



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### STUDENTS PARTICIPATION LIST

### VAC PROGRAM-"VERTICAL FARMING"

S.No.	Reg.No	Student's Name	Year/ Branch
1.	811220103011	Dharun Kumar R	III/CIVIL
2.	811220103020	Gunaseelan G	III/CIVIL
3.	811220103024	Iyyapan Mani A	III/CIVIL
4.	811220103025	KalanchiyaMuniyaraj B	III/CIVIL
5.	811220103029	ManiKandan M	III/CIVIL
6.	811220103030	Mohanapriya S	III/CIVIL
7.	811220103032	MuthuSelvam A	III/CIVIL
8.	811220103041	Sudhakar R	III/CIVIL
9.	811220103046	Vishwa S	III/CIVIL
10.	811221225002	Abinaya R	II/AGRI
11.	811221225007	Charulatha V	II/AGRI
12.	811221225011	Hariharan M	II/AGRI
13.	811221225013	Ilayaraja E	II/AGRI
14.	811221225014	Jayasoundarya M	II/AGRI
15.	811221225016	KalpanaPriya R	II/AGRI
16.	811221225019	Kaviya T	II/AGRI
17.	811221225022	Kowsalya I	II/AGRI
18.	811221225025	Ponniyammal B	II/AGRI
19.	811221225028	Rajabunisha M	II/AGRI
20.	811221225029	Rajesg K	II/AGRI
21.	811221225030	Rajeshwari D	II/AGRI
22.	811221225031	Sairam M	II/AGRI
23.	811221225040	Vijayakrishna G	II/AGRI
24.	811221225301	Rishi Krishna A	II/AGRI

  
VAC Coordinator

  
HoD/AGRI

  
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Name of the Student :


Year/Sem:

AU Register Number:

Value Added Course on "VERTICAL FARMING"

### MCQ QUESTIONS (25X4 = 100 Marks)

1. What is one advantage to vertical farming?
  - a) Its fast
  - b) Year round
  - c) Increases jobs
  - d) Makes food taste like candy
2. What is the global population in 2050?
  - a) 10 million
  - b) 15 billion
  - c) 10 billion
  - d) 15 trillion
3. How much of earth's land is being used for crop production
  - a) 11%
  - b) 5%
  - c) 20%
  - d) 100%
4. Disadvantage of Vertical Farming
  - a) seasonal growth
  - b) Less jobs
  - c) Weather impacts plant production
  - d) creates runoff
5. What is needed in order to create a vertical farm
  - a) Be a pro gardener
  - b) Have to be a botanist
  - c) Have LED lights
  - d) Have Quick Maf skills

  
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6. Why is Traditional Farming bad
  - a) Creates better soil
  - b) Uses pesticides
  - c) Destroys local businesses
  - d) Damages the atmosphere
7. Agriculture is a \_\_\_\_\_
  - a) Greek word
  - b) Latin word
  - c) German word
  - d) Spanish
8. The term agronomy is derived from \_\_\_\_\_
  - (A) German word
  - (B) Latin word
  - (C) Spanish
  - (D) Greek word
9. Primary resource for agriculture
  - (A) Land, air and water
  - (B) Seed, Fertilizer and Pesticide
  - (C) Seed, air and water
  - (D) Land, Fertilizer and water
10. Cultivation of rice begins in \_\_\_\_\_
  - (A) 2200 BC
  - (B) 5700 BC
  - (C) 7700 BC
  - (D) 8700 BC
11. The book 'Horse hoeing husbandry' was published by \_\_\_\_\_
  - (A) Van Helmont
  - (B) Gregor Johann Mendel
  - (C) Jethrotull
  - (D) None
12. Kharif, Rabi and Zaid word belong to \_\_\_\_\_
  - (A) Urdu
  - (B) French
  - (C) Persian
  - (D) Arabic

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13. Principles of mercury barometers was discovered by

- (A) Torricelli
- (B) Aristotle
- (C) Pliny
- (D) Galileo

14. The term PET was coined by \_\_\_\_\_

- (A) Sarkar and Biswas
- (B) Haigreaves
- (C) Thornthwaite
- (D) Mendel

15. National Research Centre for Litchi (NRCL) is located at

- (A) Pune
- (B) Muzaffarpur
- (C) Lucknow
- (D) Kolkata

16. National Biodiversity Authority is located at \_\_\_\_\_

- (A) Chennai
- (B) New Delhi
- (C) Nagpur
- (D) Gurgaon

17. International Potato Research Centre at \_\_\_\_\_


- (A) Shimla
- (B) Peru
- (C) Rome
- (D) USA

18. Father of Horticulture

- (A) Thomas Andrew Knight
- (B) Liberty Hyde Bailey
- (C) John Lindley
- (D) All of the above

19. Word "Horticulture" is derived from \_\_\_\_\_

- (A) Latin
- (B) English

  
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- (C) Greek  
(D) Italic
20. New seed police was launched in \_\_\_\_\_  
(A) 1982  
(B) 1992  
(C) 1988  
(D) 1986
21. Pomology is derived from \_\_\_\_\_  
(A) Latin  
(B) French  
(C) English  
(D) Greek
22. The germplasm theory was proposed by \_\_\_\_\_  
(A) Weisman  
(B) Mendel  
(C) Darwin  
(D) Hugo de vries
23. Which of the following bases is not present in DNA?  
(A) Adenine  
(B) Thymine  
(C) Uracil  
(D) Cytosine
24. Balbiani rings are found in which of the following  
(A) Lampbrush chromosomes  
(B) Sex chromosomes  
(C) Polytene chromosomes  
(D) B chromosomes
25. The term 'genotype' and 'phenotype' were introduced by \_\_\_\_\_  
(A) W.L. Johanssen  
(B) W. Bateson  
(C) G.J. Mendel  
(D) R.C. Punnett

  
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### Value Added Course on "VERTICAL FARMING"




#### ANSWER KEY

1	b	6	b	11	c	16	a	21	d
2	c	7	b	12	d	17	b	22	a
3	a	8	d	13	a	18	d	23	c
4	c	9	a	14	c	19	a	24	c
5	c	10	a	15	b	20	c	25	a

  
VAC Coordinator

  
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Manikandam, Trichy-620 012.



REPORT ON VALUE ADDED COURSE					
Title:	VERTICAL FARMING				
Resource Person:	Mr.R.Sankar,N.Ramachandran, Sri Enterprise Agro Industries Corporation ,Trichy				
Date of conduct from :	01.08.2022	To:	05.08.2022	Duration:	30 Hours
Organized Department :	Agricultural Engineering				
Participant Year:	2, 3	No. of Students Registered :	1724		
Venue:	Agri Seminar Hall				
<b>Outcome of Value Added Course (VAC): At the end of the Course, Students can able to</b>					
<ul style="list-style-type: none"><li>• Know real-world importance of software in Agricultural engineering students</li><li>• Know how to perform in Agriin industries.</li><li>• Study about vertical farmingof Agricultural.</li><li>• Students are expected to learn and practice the skills they will need in the workplace.</li><li>• Develop a foundational understanding Agricultural engineering.</li></ul>					
<b>Assessment Process</b>					
<ul style="list-style-type: none"><li>• Students, who are securing <b>more than 70% on total score</b> and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted</li><li>• Total Score = (0.5 *Attendance in VAC out of 100 percentage + 0.5 *Test mark in VAC out of 100 marks)</li></ul>					
 VAC Coordinator		 HoD/AGRI		 PRINCIPAL	

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### REPORT ON VALUE ADDED COURSE

#### SAMPLE PHOTO:



*S. Princy*  
VAC Coordinator

*V. Sivaraj*  
HoD/AGRI

*K. Srinivas*  
PRINCIPAL

*(Signature)*  
Dr. G. Balakrishnan, M.E., Ph.D.,  
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## Department of AGRICULTURAL ENGINEERING

Academic Year 2022-2023 – Odd Semester

### STUDENTS PARTICIPATION LIST

Dr. G. Balakrishnan, M.E., Ph.D.,  
Principal

Indra Ganesan College of Engineering  
IG Valley, Madurai Main Road  
Manikandam, Trichy-620 012.

### MARK SHEET FOR VALUE ADDED COURSE PROGRAM - VERTICAL FARMING

S.No.	Reg.No	Student's Name	Year/ Branch	Attendance Details		VAC-MCQ TEST		OVERALL MARK(100) (50% of A + 50% of B)
				No. of Session Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
1.	811220103011	Dharun Kumar R	III/CIVIL	30	100	22	88	94
2.	811220103020	Gunaseelan G	III/CIVIL	30	100	20	80	90
3.	811220103024	Iyyapan Mani A	III/CIVIL	30	100	21	84	92
4.	811220103025	KalanchiyaMuniyaraj B	III/CIVIL	27	90	20	80	85
5.	811220103029	ManiKandan M	III/CIVIL	30	100	22	88	94
6.	811220103030	Mohanapriya S	III/CIVIL	30	100	22	88	94
7.	811220103032	MuthuSelvam A	III/CIVIL	30	100	22	88	94
8.	811220103041	Sudhakar R	III/CIVIL	27	90	20	80	85
9.	811220103046	Vishwa S	III/CIVIL	30	100	22	88	94

*(Signature)*



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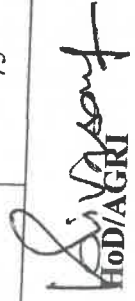


10.	811221225002	ABINAYA R	II/AGRI	30	100	22	88	94
11.	811221225007	CHARULATHA V	II/AGRI	30	100	20	80	90
12.	811221225011	HARIHARAN M	II/AGRI	30	100	21	84	92
13.	811221225013	ILAYARAJA E	II/AGRI	27	90	20	80	85
14.	811221225014	JAYASOUNDARYA M	II/AGRI	30	100	22	88	94
15.	811221225016	KALPANA PRIYA R	II/AGRI	30	100	22	88	94
16.	811221225019	KAVIYA T	II/AGRI	30	100	22	88	94
17.	811221225022	KOWSALYA I	II/AGRI	27	90	20	80	85
18.	811221225025	PONNIYAMMAL B	II/AGRI	30	100	22	88	94
19.	811221225028	RAJABUNISHA M	II/AGRI	30	100	22	88	94
20.	811221225029	RAJESH K	II/AGRI	30	100	22	88	94
21.	811221225030	RAJESHWARI D	II/AGRI	27	90	22	88	94
22.	811221225031	SAIRAM M	II/AGRI	30	100	22	88	94
23.	811221225040	VIJAYAKRISHNA G	II/AGRI	30	100	22	88	94
24.	811221225301	RISHI KRISHNA A	II/AGRI	18	60	16	64	75

  
Coordinator

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HOD/AGRI



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## Department of AGRICULTURAL ENGINEERING

Academic Year 2022-2023 – Odd Semester

### STUDENTS PARTICIPATION LIST

VAC PROGRAM - "VERTICAL FARMING"

S.No.	Reg.No	Student's Name	Year/ Branch	DATE: 01.08.22		DATE: 02.08.22		DATE: 03.08.22		DATE: 04.08.22		DATE: 05.08.22		NO OF SESSIONS ATTENDED	SIGNATURE OF THE STUDENT
				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN		
1.	811220103011	Dharun Kumar R	III/CIVIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	R.D	
2.	811220103020	Gunaseelan G	III/CIVIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	G.aji	
3.	811220103024	Jyapana Mani A	III/CIVIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	A.Jya	
4.	811220103025	Kalanchiya Muniyara] B	III/CIVIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	Kalanchiya	
5.	811220103029	Manikandan M	III/CIVIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	Manikandan	
6.	811220103030	Mohanapriya S	III/CIVIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	S. Priya	
7.	811220103032	MuthuSelvam A	III/CIVIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	10	MuthuSelvam	
8.	811220103041	Sudhakar R	III/CIVIL	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	R. Sudhakar	



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22	811221223031	Sairam N	II/AGRI	✓	✓	✓	✓	✓	✓	✓	✓	10	10	10
23	811221225040	Vijayakrishna G	II/AGRI	✓	✓	✓	✓	✓	✓	✓	✓	10	10	10
24	811221225301	Rishi Krishna A	II/AGRI	✓	✓	✓	✓	✓	✓	✓	✓	6	6	6

*S. Sivasub*  
 HoD/AGRI

*S. Sivasub*  
 VAC Coordinator

*[Signature]*

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Name of the Student: Charulatha V

Year/Sem: II AGRI

AU Register Number: 811221225007

Value Added Course on "VERTICAL FARMING"

### MCQ QUESTIONS (25X4 = 100 Marks)

1. What is one advantage to vertical farming?

- a) Its fast
- b) Year round
- c) Increases jobs
- d) Makes food taste like candy

20  
-----  
25

2. What is the global population in 2050?

- a) 10 million
- b) 15 billion
- c) 10 billion
- d) 15 trillion

3. How much of earth's land is being used for crop production

- a) 11%
- b) 5%
- c) 20%
- d) 100%

4. Disadvantage of Vertical Farming

- a) seasonal growth
- b) Less jobs
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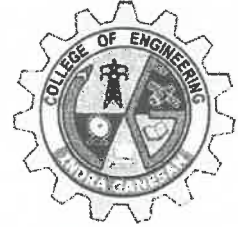
*(Signature)*  
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6. Why is Traditional Farming bad

- a) Creates better soil
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7. Agriculture is a \_\_\_\_\_

- a) Greek word
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8. The term agronomy is derived from \_\_\_\_\_

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- (A) 2200 BC
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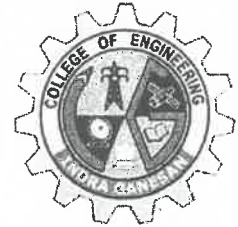
  
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Name of the Student : Dhaam Kumar

Year/Sem: III / Civil

AU Register Number: 81122010301

Value Added Course on "VERTICAL FARMING"

### MCQ QUESTIONS (25X) = 25 Marks

1. What is one advantage to vertical farming?

- a) Its fast
- b) Year round
- c) Increases jobs
- d) Makes food taste like candy

2. What is the global population in 2050?

- a) 10 million
- b) 15 billion
- c) 10 billion
- d) 15 trillion

3. How much of earth's land is being used for crop production

- a) 11%
- b) 5%
- c) 20%
- d) 100%

4. Disadvantage of Vertical Farming

- a) seasonal growth
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5. What is needed in order to create a vertical farm

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22  
25

  
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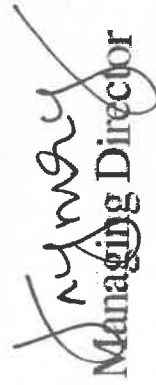
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## CERTIFICATE

### OF PARTICIPATION

This is to certify that Ms.ABINAYAR of II Year B.TECH- AGRI Indra Ganesan College of Engineering has successfully completed the Value Added course "VERTICAL FARMING" organised By Department Of Agricultural Engineering in association with Sri Enterprise Agro Industries Corporation conducted from 07.03.2021 to 11.03.2021.(5days) during Academic year 2022-2023.

  
Managing Director

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