



ASCI
Agriculture Skill Council of India



N.S.D.C.
National
Skill Development
Corporation



**सीएसआईआर - हिमालय जैवसंपदा प्रौद्योगिकी संस्थान, पालमपुर -हि.प्र.
पोस्ट बॉक्स. नं. 06, पालमपुर – 176 061 (हिमाचल प्रदेश) भारत**

सीएसआईआर-हिमालय जैवसंपदा प्रौद्योगिकी संस्थान में वैज्ञानिक और औद्योगिक अनुसंधान परिषद के सीएसआईआर-एकीकृत कौशल पहल (चरण -III) के अंतर्गत निम्न पाठ्यक्रमों के लिए आवेदन पत्र आमंत्रित किए जा रहे हैं:

क्र.स.	पाठ्यक्रम	अवधि	पात्रता	रिक्तियाँ	पाठ्यक्रम शुल्क
1.	मास्टर गार्डनर (पाठ्यक्रम कोड -AGR- Q0801,NSQF Level-04)	390 घंटे (लगभग 50 दिन)	10+2 या 10 वीं कक्षा उत्तीर्ण तथा कृषि एवं संबद्ध क्षेत्रों में 3 वर्ष का प्रासंगिक अनुभव या ASCI दिशा-निर्देशों के अनुसार	20	Rs. 1000/-

आवेदन की अंतिम तिथि : 04.10.2026
पाठ्यक्रम शुरू करने की तिथि : 27.09.2026

आवेदन कैसे करें : इच्छुक उम्मीदवारों को <http://www.ihbt.res.in/en/about-us/csir-integrated-skill-initiative> से प्रोफार्मा डाउनलोड कर या सलग्न प्रपत्र भर कर इसे समन्वयक, सीएसआईआर-एकीकृत कौशल पहल, (चरण-III) सी.एस.आई.आर.-आई.एच.बी.टी, पीओ बॉक्स नं. 6, पालमपुर 176 061 या skill.ihbt@csir.res.in पर ईमेल से भेज सकते हैं।

चयन प्रक्रिया: प्राप्त आवेदनों की छंटनी की जाएगी तथा उनमें से उम्मीदवारों का साक्षात्कार / लिखित परीक्षा ऑनलाइन/ ऑफलाइन माध्यम से आवश्यकतानुसार किया जा सकता है।

- उम्मीदवार एक समय में केवल एक ही पाठ्यक्रम में पंजीकरण कर सकता है।
- आवेदन के साथ प्रस्तुत दस्तावेज (न्यूनतम योग्यता) स्व-सत्यापित होने चाहिए व सभी मूल दस्तावेज ज्वाइनिंग के समय चैक किए जाएंगे।
- चयनित उम्मीदवारों को ईमेल /टेलीफोन द्वारा सूचित किया जाएगा।
- पाठ्यक्रम शुल्क ज्वाइनिंग के समय जमा किया जाएगा।
- पाठ्यक्रम को सफलतापूर्वक पूरा करने वाले उम्मीदवारों को प्रमाण पत्र प्रदान किए जाएंगे।
- आवेदन भेजने और पाठ्यक्रम के बारे में किसी भी प्रश्न के लिए आप ईमेल द्वारा संपर्क कर सकते हैं:
skill.ihbt@csir.res.in
- **प्रशिक्षण स्थल:** सीएसआईआर-आईएचबीटी, पालमपुर (हि.प्र.)।

कृपया ध्यान दें:

क.) साक्षात्कार / लिखित परीक्षा/ ज्वाइनिंग के लिए उपस्थित होने हेतु आवेदकों को टीए / डीए नहीं दिया जाएगा।

ख.) उम्मीदवारों को पाठ्यक्रम अवधि के दौरान अपने रहने व खाने की व्यवस्था स्वयं करनी होगी ।



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Skill India
कौशल भारत - कुशल भारत



N.S.D.C
National Skill Development Corporation



CSIR - Institute of Himalayan Bioresource Technology, Palampur
A Constituent Laboratory of the Council of Scientific and Industrial Research
Post Box. No. 06, Palampur – 176 061 (Himachal Pradesh) INDIA

Call for Applications for Courses under CSIR- Integrated Skill Initiative (Phase –III)
at CSIR-Institute of Himalayan Bioresource Technology

CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT) is one of the national autonomous institutes under the Council of Scientific and Industrial Research, located at Palampur. CSIR-IHBT is engaged in research and technology development programs for the sustainable management of Bioresources of the Himalaya. The Institute is inviting applications from motivated applicants fulfilling eligibility criteria for the following courses under CSIR Integrated Skill Initiative (Phase-III), so as to make them competitive for employment in emerging fields of industrial importance. The Institute has world-class facilities equipped with highly sophisticated instruments.

DETAILS OF COURSE

S. No.	Courses	Duration	Eligibility	Seats	Course Fee
1.	Master Gardener (Course Code-AGR-Q0801, NSQF Level-04)	390 Hours (50 days Approx.)	10+2 OR 10 th class pass with 3 years of relevant experience in Agriculture and allied sectors OR as per ASCI guidelines	20	Rs. 1000/-

Last date for receiving application : 04.10.2026

Course start Date : 27.09.2026

How to apply: The interested candidates may download the application form from <http://www.ihbt.res.in/en/about-us/csir-integrated-skill-initiative>), and send duly filled application and educational qualifications to Coordinator, CSIR-Integrated Skill Initiative (Phase –III), CSIR-IHBT, PO Box No. 6, Palampur 176 061 or email to skill.ihbt@csir.res.in

Mode of Selection: The applications received will be screened and shortlisted candidates may be interviewed online/offline.

- A candidate can only register for one course at a time.
- One self-attested set of documents (Minimum qualification) to be submitted along with application.
- All documents in original are required to be shown at the time of joining.
- The selected candidates will be intimated through email/ telephonically.
- The course fees can be deposited at the time of Joining.
- Certificates will be provided to the candidates after successful completion of the course.
- Any query you may contact skill.ihbt@csir.res.in
- **Training venue: CSIR-IHBT, Palampur (H.P.)**

Note:

- a) No TA/DA will be provided to the applicants for appearing in the interview/written test/joining the institute.
- b) The candidates have to arrange their own boarding and lodging during the course.

```
# =====
# Two-way ANOVA: Treatment × Month
# =====
```

```
library(dplyr)
library(agricolae)
```

```
# ---- FULL DATASET ----
```

```
data <- data.frame(
  Treatment = factor(rep(1:16, each = 18)),
  Month = factor(rep(rep(c("One","Two","Three","Four","Five","Six"), each = 3), 16),
    levels = c("One","Two","Three","Four","Five","Six")),
  Value = c(
```

```
# ----- Treatment 1 -----
```

```
44.33,47.22,45.78, 47.88,51.76,49.82, 67.61,61.40,64.51,
70.94,73.26,72.10, 83.79,82.57,83.18, 93.10,96.98,95.04,
```

```
43.12,35.25,39.18, 58.63,57.75,58.19, 65.50,64.40,64.95,
79.14,76.48,77.81, 81.13,78.92,80.02, 99.09,91.00,95.04,
```

```
49.21,43.67,46.44, 62.07,62.29,62.18, 62.62,68.83,65.73,
74.04,78.25,76.15, 86.45,88.23,87.34, 91.66,89.45,90.55,
```

```
# ----- Treatment 2 -----
```

```
57.41,49.21,53.31, 59.63,71.49,65.56, 72.16,76.92,74.54,
86.45,84.90,85.68, 87.67,99.20,93.44, 97.32,101.97,99.64,
```

```
40.01,44.00,42.01, 66.50,52.09,59.30, 69.50,65.06,67.28,
90.11,88.67,89.39, 91.44,91.11,91.27, 102.97,108.07,105.52,
```

```
52.76,54.20,53.48, 60.52,57.75,59.13, 74.70,70.27,72.49,
74.70,81.47,78.08, 95.87,86.23,91.05, 101.19,95.99,98.59,
```

```
# ----- Treatment 3 -----
```

```
48.21,51.54,49.88, 56.08,67.06,61.57, 68.39,73.26,70.83,
81.13,76.37,78.75, 83.13,87.45,85.29, 94.21,98.09,96.15,
```

```
45.44,41.12,43.28, 67.61,57.97,62.79, 66.50,60.18,63.34,
80.91,80.25,80.58, 91.22,91.44,91.33, 99.75,103.74,101.75,
```

```
52.76,48.66,50.71, 54.98,60.07,57.52, 72.04,67.61,69.83,
75.37,83.57,79.47, 88.89,88.67,88.78, 98.53,105.30,101.92,
```

```
# ----- Treatment 4 -----
```

```
44.11,53.42,48.77, 70.38,72.27,71.32, 72.38,83.24,77.81,
84.24,85.46,84.85, 96.10,98.65,97.37, 102.64,108.18,105.41,
```

58.30,61.51,59.91, 62.84,62.07,62.46, 74.48,73.26,73.87,
84.13,92.11,88.12, 93.44,92.11,92.77, 106.29,101.97,104.13,

55.09,45.33,50.21, 62.40,66.50,64.45, 78.47,68.50,73.49,
90.00,88.67,89.33, 94.66,94.21,94.43, 108.95,110.50,109.73,

----- Treatment 5 -----

49.88,47.00,48.44, 64.29,66.50,65.39, 69.27,71.71,70.49,
73.93,76.15,75.04, 82.80,93.10,87.95, 97.20,93.44,95.32,

55.42,55.42,55.42, 63.95,58.19,61.07, 71.82,65.17,68.50,
81.91,79.47,80.69, 86.23,80.91,83.57, 101.08,94.10,97.59,

43.12,48.77,45.94, 57.64,62.40,60.02, 69.94,82.13,76.03,
80.14,83.13,81.63, 92.77,89.11,90.94, 91.44,90.89,91.16,

----- Treatment 6 -----

42.78,47.55,45.17, 52.32,57.52,54.92, 66.50,65.28,65.89,
78.92,67.83,73.37, 83.79,92.22,88.00, 93.77,100.86,97.32,

46.88,46.33,46.61, 59.19,52.43,55.81, 70.27,70.27,70.27,
77.03,84.79,80.91, 88.67,91.11,89.89, 97.09,99.20,98.15,

51.76,52.20,51.98, 61.51,60.41,60.96, 63.84,61.85,62.84,
77.03,77.59,77.31, 88.12,87.67,87.89, 91.88,102.41,97.15,

----- Treatment 7 -----

60.96,51.76,56.36, 57.64,58.41,58.02, 74.37,70.27,72.32,
81.35,87.01,84.18, 87.56,87.89,87.73, 102.64,92.33,97.48,

46.11,56.75,51.43, 64.06,62.40,63.23, 69.50,64.40,66.95,
77.59,71.27,74.43, 88.67,83.68,86.18, 101.75,102.08,101.92,

39.90,41.45,40.68, 61.07,57.64,59.35, 71.93,76.48,74.21,
83.13,76.48,79.80, 93.77,92.11,92.94, 103.08,108.73,105.91,

----- Treatment 8 -----

47.00,44.89,45.94, 59.19,55.75,57.47, 74.04,73.15,73.60,
82.80,86.79,84.79, 85.01,88.23,86.62, 99.31,106.96,103.13,

47.66,52.54,50.10, 57.19,61.85,59.52, 70.16,64.40,67.28,
84.13,68.94,76.53, 88.45,83.35,85.90, 97.65,98.09,97.87,

48.66,42.12,45.39, 59.96,53.87,56.92, 64.73,60.96,62.84,
73.71,75.37,74.54, 95.87,93.99,94.93, 99.75,93.99,96.87,

----- Treatment 9 -----

56.42,53.20,54.81, 65.39,65.06,65.23, 68.17,71.27,69.72,
74.93,76.37,75.65, 74.93,90.67,82.80, 92.00,103.63,97.81,

42.12,47.11,44.61, 62.07,57.64,59.85, 71.49,65.06,68.28,
79.25,78.14,78.69, 79.25,83.79,81.52, 94.66,98.76,96.71,

52.98,46.77,49.88, 55.42,60.30,57.86, 73.82,76.48,75.15,
83.02,82.35,82.68, 83.02,93.66,88.34, 83.79,105.30,94.54

----- Treatment 10 -----

49.66,43.45,55.42,58.30,49.88,46.00,53.98,46.66,50.71,62.84,60.41,57.41,58.30,60.96,68.17,6
0.57,60.68,62.79,69.83,71.71,66.95,78.03,71.82,68.17,73.93,71.77,67.56,75.15,76.59,82.02,83
.79,75.15,80.80,79.47,75.87,81.41,81.80,87.56,90.00,86.56,91.77,88.67,84.18,89.67,89.33,97.
43,92.44,90.00,97.65,101.42,102.97,97.54,96.93,96.48

----- Treatment 11 -----

42.67, 51.54, 47.11,53.87, 57.08, 55.47,50.21, 43.78, 47.00,64.51, 62.51, 63.51,59.96,
57.08,58.52, 57.97, 69.94, 63.95,71.71, 67.39, 69.55,68.50, 79.03, 73.76,71.38, 69.38,
70.38,85.46, 89.78, 87.62,80.36, 77.81, 79.08,78.69, 82.02, 80.36,96.65, 93.21, 94.93,83.13,
85.01, 84.07,89.78, 99.53, 94.66,93.66, 109.73, 101.69,104.19, 96.65, 100.42,100.09, 104.63,
102.36

----- Treatment 12 -----

43.78, 50.76, 47.27,52.98, 54.31, 53.65,45.78, 38.79, 42.28,60.74, 61.07, 60.91,56.64, 51.65,
54.14,52.54, 55.20, 53.87, 69.27, 61.07, 65.17,65.28, 51.65, 58.47,66.50, 55.20, 60.85,79.47,
85.12, 82.30,75.81, 76.26, 76.03,74.82, 72.49, 73.65,87.01, 95.10, 91.05,81.35, 90.00,
85.68,90.55, 72.49, 81.52, 94.43, 102.64, 98.53,91.88, 92.11, 92.00,94.43, 95.87, 95.15

----- Treatment 13 -----

46.33, 56.86, 51.59,53.20, 50.10, 51.65,51.21, 47.33, 49.27,62.84, 58.08, 60.46,61.85,
68.72,65.28, 63.18, 63.40, 63.29,75.15, 70.38, 72.76,75.48, 74.26, 74.87,69.83, 78.25,
74.04,83.57, 87.78, 85.68,90.11, 82.57, 86.34,79.69, 77.59, 78.64,96.10, 94.21, 95.15,94.21,
98.98, 96.59,88.67, 85.23, 86.95,103.74, 105.74, 104.74,102.86, 102.19, 102.52,105.30, 96.32,
100.81

----- Treatment 14 -----

49.66,58.30,53.98,47.77,51.76, 49.77,52.09,44.33, 48.21,57.64, 65.62,
61.63,60.41,62.84,61.63,60.96, 57.08, 59.02,67.72,79.80,73.76,74.37,68.39, 71.38,71.49,70.38,
70.94, 81.91, 76.37, 79.14,83.90, 82.02, 82.96,75.26, 83.13, 79.19,86.45, 80.91,
83.68,90.33,90.44, 90.39,92.99, 99.75, 96.37,96.65, 103.74, 100.20,94.77, 98.98,
96.87,103.08,105.30,104.19

----- Treatment 15 -----

47.11, 52.09, 49.60,50.99, 42.56, 46.77,49.88, 45.89, 47.88,62.96, 62.18, 62.57,54.20,
55.42,54.81,56.64, 57.64, 57.14,69.05, 76.59, 72.82,73.60, 70.38, 71.99,67.83, 63.07, 65.45,
80.36, 78.69, 79.53,82.46, 81.47, 81.96,77.59, 74.04, 75.81,91.44, 90.00, 90.72,90.22, 84.68,
87.45,84.79, 95.32, 90.06,98.76, 103.63, 101.19,92.66, 91.33, 92.00,104.74, 95.32, 100.03

----- Treatment 16 -----

47.33, 41.56, 44.45,49.88, 45.89, 47.88,53.98, 50.76, 52.37,59.19, 57.64, 58.41,61.07,
53.87,57.47,55.97, 59.74, 57.86,71.71, 70.05, 70.88,68.72, 63.62, 66.17,67.94, 73.71,
70.83,78.69, 75.04, 76.87,77.36, 81.13, 79.25,79.47, 83.13, 81.30,87.45, 81.69, 84.57,83.68,
90.00, 86.84,90.33, 94.21, 92.27,97.43, 98.87, 98.15,93.21, 99.31, 96.26,101.19,103.08,102.14

))

---- TWO-WAY ANOVA ----

```
model <- aov(Value ~ Treatment * Month, data = data)  
anova(model)
```

```

# ---- MEANS, SD, SE ----
interaction_stats <- data %>%
  group_by(Treatment, Month) %>%
  summarise(
    Mean = mean(Value),
    SD = sd(Value),
    SE = SD/sqrt(n()),
    .groups = "drop"
  )

interaction_stats

# ---- CD (LSD) ----
LSD.test(model, "Treatment", p.adj = "none")
LSD.test(model, "Month", p.adj = "none")
LSD.test(model, c("Treatment", "Month"), p.adj = "none")

# =====
# REQUIRED PACKAGE
# =====
if(!require(agricolae)) install.packages("agricolae")
library(agricolae)

# =====
# DATA (unchanged, exact)
# =====
data <- read.table(text = "
Treatments Months Starch
1 1 45.78
1 1 39.18
1 1 46.44
1 2 49.82
1 2 58.19
1 2 62.18
1 3 64.51
1 3 64.95
1 3 65.73
1 4 72.10
1 4 77.81
1 4 76.15
1 5 83.18
1 5 80.02
1 5 87.34
1 6 95.04
1 6 95.04
1 6 90.55
2 1 53.31
2 1 42.01
2 1 53.48
2 2 65.56
2 2 59.30
2 2 59.13
2 3 74.54
2 3 67.28

```

2 3 72.49
2 4 85.68
2 4 89.39
2 4 78.08
2 5 93.44
2 5 91.27
2 5 91.05
2 6 99.64
2 6 105.52
2 6 98.59
3 1 43.28
3 1 50.71
3 2 61.57
3 2 62.79
3 2 57.52
3 3 70.83
3 3 63.34
3 3 69.83
3 4 78.75
3 4 80.58
3 4 79.47
3 5 85.29
3 5 91.33
3 5 88.78
3 6 96.15
3 6 101.75
3 6 101.92
4 1 48.77
4 1 59.91
4 1 50.21
4 2 71.32
4 2 62.46
4 2 64.45
4 3 77.81
4 3 73.87
4 3 73.49
4 4 84.85
4 4 88.12
4 4 89.33
4 5 97.37
4 5 92.77
4 5 94.43
4 6 105.41
4 6 104.13
4 6 109.73
5 1 48.44
5 1 55.42
5 1 45.94
5 2 65.39
5 2 61.07
5 2 60.02
5 3 70.49
5 3 68.50
5 3 76.03

5 4 75.04
5 4 80.69
5 4 81.63
5 5 87.95
5 5 83.57
5 5 90.94
5 6 95.32
5 6 97.59
5 6 91.16
6 1 45.17
6 1 46.61
6 1 51.98
6 2 54.92
6 2 55.81
6 2 60.96
6 3 65.89
6 3 70.27
6 3 62.84
6 4 73.37
6 4 80.91
6 4 77.31
6 5 88.00
6 5 89.89
6 5 87.89
6 6 97.32
6 6 98.15
6 6 97.15
7 1 56.36
7 1 51.43
7 1 40.68
7 2 58.02
7 2 63.23
7 2 59.35
7 3 72.32
7 3 66.95
7 3 74.21
7 4 84.18
7 4 74.43
7 4 79.80
7 5 87.73
7 5 86.18
7 5 92.94
7 6 97.48
7 6 101.92
7 6 105.91
8 1 45.94
8 1 50.10
8 1 45.39
8 2 57.47
8 2 59.52
8 2 56.92
8 3 73.60
8 3 67.28
8 3 62.84

8 4 84.79
8 4 76.53
8 4 74.54
8 5 86.62
8 5 85.90
8 5 94.93
8 6 103.13
8 6 97.87
8 6 96.87
9 1 54.81
9 1 44.61
9 1 49.88
9 2 65.23
9 2 59.85
9 2 57.86
9 3 69.72
9 3 68.28
9 3 75.15
9 4 75.65
9 4 78.69
9 4 82.68
9 5 82.80
9 5 81.52
9 5 88.34
9 6 97.81
9 6 96.71
9 6 94.54
10 1 53.98
10 1 46.66
10 1 50.71
10 2 60.57
10 2 60.68
10 2 62.79
10 3 73.93
10 3 71.77
10 3 67.56
10 4 79.47
10 4 75.87
10 4 81.41
10 5 84.18
10 5 89.67
10 5 89.33
10 6 97.54
10 6 96.93
10 6 96.48
11 1 47.11
11 1 55.47
11 1 47.00
11 2 63.51
11 2 58.52
11 2 63.95
11 3 69.55
11 3 73.76
11 3 70.38

11 4 87.62
11 4 79.08
11 4 80.36
11 5 94.93
11 5 84.07
11 5 94.66
11 6 101.69
11 6 100.42
11 6 102.36
12 1 47.27
12 1 53.65
12 1 42.28
12 2 60.91
12 2 54.14
12 2 53.87
12 3 65.17
12 3 58.47
12 3 60.85
12 4 82.30
12 4 76.03
12 4 73.65
12 5 91.05
12 5 85.68
12 5 81.52
12 6 98.53
12 6 92.00
12 6 95.15
13 1 51.59
13 1 51.65
13 1 49.27
13 2 60.46
13 2 65.28
13 2 63.29
13 3 72.76
13 3 74.87
13 3 74.04
13 4 85.68
13 4 86.34
13 4 78.64
13 5 95.15
13 5 96.59
13 5 86.95
13 6 104.74
13 6 102.52
13 6 100.81
14 1 53.98
14 1 49.77
14 1 48.21
14 2 61.63
14 2 61.63
14 2 59.02
14 3 73.76
14 3 71.38
14 3 70.94

```

14 4 79.14
14 4 82.96
14 4 79.19
14 5 83.68
14 5 90.39
14 5 96.37
14 6 100.20
14 6 96.87
14 6 104.19
15 1 49.60
15 1 46.77
15 1 47.88
15 2 62.57
15 2 54.81
15 2 57.14
15 3 72.82
15 3 71.99
15 3 65.45
15 4 79.53
15 4 81.96
15 4 75.81
15 5 90.72
15 5 87.45
15 5 90.06
15 6 101.19
15 6 92.00
15 6 100.03
16 1 44.45
16 1 47.88
16 1 52.37
16 2 58.41
16 2 57.47
16 2 57.86
16 3 70.88
16 3 66.17
16 3 70.83
16 4 76.87
16 4 79.25
16 4 81.30
16 5 84.57
16 5 86.84
16 5 92.27
16 6 98.15
16 6 96.26
16 6 102.14
", header = TRUE)

```

```

data$Treatments <- factor(data$Treatments)
data$Months <- factor(data$Months)

```

```

# =====
# TWO-WAY ANOVA
# =====
model <- aov(Starch ~ Treatments * Months, data = data)

```

```

anova(model)

# =====
# FINAL MEAN TABLE WITH SIGNIFICANCE (LSD)
# =====

# Interaction factor
data$TM <- interaction(data$Treatments, data$Months)

# LSD test on interaction means
lsd <- LSD.test(model, "TM", p.adj = "none")

# Final table
final_table <- lsd$groups
final_table$Treatment <- sub("\\.\\.*", "", rownames(final_table))
final_table$Month <- sub("\\.*\\.", "", rownames(final_table))

# Arrange table
final_table <- final_table[order(
  as.numeric(final_table$Treatment),
  as.numeric(final_table$Month)
), ]

# View final table
final_table

```