

Brief Report of Value Added Course (CAV-24-02)
On
Data Structure using Advanced C Programming
(30th September - 12th November, 2024)
Organized by
Department of Computer Application
In Association with
Integral University Center for Advanced Training
Integral University, Lucknow

The Department of Computer Application in Association with Integral University Center for Advanced Training, Integral University, Lucknow organized an online **Value Added Course (CAV-24-02)** on "**Data Structure using Advanced C Programming**" for the University students from all the branches. The four-weeks Value-Added Course, with 30-hours of active engagement, was organized from 30th September to 12th November, 2024 in online mode using ILI (Integral Learning Initiative: A Collaborative Blended Learning Platform).

For advertisement of the course, IUCAT created an HTML E-mailer comprising the details of the course along with the registration link and circulate the E-mailer to the students through Communication Cell. Total **462 students** from all the branches registered in the course. One batch has been created to start the course and we have followed evening time from Monday to Thursday to deliver the course sessions. The duration of the session was 1 hour per day. The entire course sessions of the batch were successfully delivered by **Ms. Fiza Afreen** (Assistant Professor, Department of Computer Application, Integral University, Lucknow), **Ms. Nadiya Parveen** (Assistant Professor, Department of Computer Application, Integral University, Lucknow) and **Ms. Fareen** (Assistant Professor, Department of Computer Application, Integral University, Lucknow).

Learning skills of the students were excellent. They attended the course with full dedication. At the end of the course, we conducted an online quiz based on the Data Structure & Advanced C Programming and course completion feedback from the participants on Google Classroom and then students downloaded their certificate if they attended the sessions, assignments submitted, completion of quiz and feedback.

Total **96 students** successfully completed the course and received an e-Certificate. The distribution of e-Certificate was based on student's attendance, assignments submitted and their performance in the online quiz, conducted at the end of the course.

This course covers fundamental concepts including pointers, strings, memory management, arrays, linked lists, stacks, queues and trees, as well as algorithmic techniques such as searching and sorting. Through hands-on coding exercises. By the end of the course, students will develop the skills to implement and manipulate these data structures effectively.

The course emphasizes problem-solving and critical thinking, preparing students for advanced topics in computer science and software development. Ideal for beginners and those looking to strengthen their programming foundation, this course combines theoretical knowledge with practical application to enhance programming proficiency in C.

The course helps students to get exposed to the industry and to acquire adequate technical knowledge and know-how thereof. It is not possible for any institution to provide all types of processes, equipment, etc., that are used in various industries. The Training course therefore provides an opportunity to the students to get exposed to a very large area of technology and its processes. This training course results in better employment opportunities for students and helps them to acquire better analytical as well as practical approaches.

The Value-Added Course was organized by Department of Computer Application in Association with Integral University Center for Advanced Training under the able guidance of **Prof. (Dr.) Mohammad Faisal**, Head,

Department of Computer Application, Integral University, Lucknow and was coordinated by **Dr. Farooq Ahmad** (Assistant Professor, Department of Computer Application and Coordinator, IUCAT).

Key Highlights of the training:

- It was an online learning course.
- Total 462 students from all the branches registered in the Value-Added course.
- The students successfully completed the Value Added Course on “Data Structure using Advanced C Programming (CAV-24-02)”.
- 96 students successfully completed the course and received an e-Certificate.
- Four-Week online course with 30 hours of active engagement consisting of self-learning materials, collaborative learning through discussion forums & groups, assessment through online Quizzes and Assignments, and feedback from the participants.
- Learning support by Resource person and Facilitators.
- Students received e-Certificate from the following programs:

B.Com. (Hons)	B. Pharm	BCA	B. Tech (CSE)	BBA
B. Tech (ECE)	B. Sc. (Agriculture)	B. Sc. (CS)	M. Sc.	BMLT
Bachelor of Education	B. Sc. (Biotechnology)	B. Sc. (Nursing)	MCA	Diploma (CS)
MBA	M. Sc (Microbiology)	M. Tech.	Bachelor of Anesthesiology	

We have delivered the following course content on “Data Structure using Advanced C Programming”:

C Programming - Advanced Features

- Pointers
- Strings and Pointers
- Pointers and Memory Management
- Arrays and Functions
- Structures and Unions

Non-Linear Data Structures

- Non-Linear Data Structures - Trees
- Binary Trees
- Representation of Binary Tree
- Binary Search Tree

Linear Data Structures - List

- Introduction to Data Structure
- Array Based Implementation
- Linked List
- Difference between Array and Linked List
- Doubly Linked List

Sorting and Searching Techniques

- Sorting
- Insertion Sort
- Quick Sort
- Heap Sort
- Merge Sort
- Searching

- Circular Linked List
- Applications of Linked Lists -

Linear Data Structures Stacks and Queues

- Concept of Stack
- Implementation of Stack
- Applications of Stack
- Concept of Queue
- Queue Implementation
- Applications of Queue

Rank	Participant	City	State	Age	Gender	Final	Grade	Amount
1	Shaykh Muneer	Bilwa	Uttar Pradesh	19	M	30.75 Marks	550	28.00
2	Sana Khatun	Lucknow	Uttar Pradesh	22	F	19.47 Marks	540	27.00
3	Iskra Ayub	Lucknow	Uttar Pradesh	29	F	24.80 Marks	490	24.00
4	Yash Raj	Lucknow	Uttar Pradesh	20	F	19.90 Marks	460	23.00
5	Genya Sengupta	Lucknow	Uttar Pradesh	22	F	19.52 Marks	460	23.00
6	Syed Ahsan	Agartla	GU	19	M	19.88 Marks	430	21.00
7	Muneer Ahmad	Lucknow	Uttar Pradesh	28	M	19.23 Marks	420	21.00
8	DR. MUNIR SINGH	Lucknow	Uttar Pradesh	22	M	19.50 Marks	400	20.00
9	Qasim Muneer Saad	Gonda	Uttar Pradesh	29	M	20.67 Marks	400	20.00
10	Sabirun Ahmad	Lucknow	Uttar Pradesh	21	M	19.62 Marks	400	20.00
11	Mahesh Siddhant	Lucknow	Uttar Pradesh	22	F	19.38 Marks	400	20.00
12	Jyoti Akshay	Gorakhpur	Uttar Pradesh	16	F	19.42 Marks	380	19.00
13	Saba Ghani	Panna	Bihar	22	M	19.60 Marks	380	19.00
14	Abdulhak Verman	Gorakhpur	Uttar Pradesh	19	M	19.77 Marks	360	18.00
15	QURAN AYESH	Lucknow	Uttar Pradesh	18	F	19.60 Marks	360	18.00
16	Mahmood Hameed	Lucknow	Uttar Pradesh	19	M	19.00 Marks	340	17.00
17	Muhammad Aliwan	Seelmy	GU	19	M	19.62 Marks	290	13.00
18	Ahsan Tariq	Lucknow	Uttar Pradesh	21	M	19.50 Marks	320	16.00
19	Surya Ghosh	Chandigarh	Uttar Pradesh	24	M	21.40 Marks	300	15.00
20	Naveen Prasad Gupta	Bilwa	Uttar Pradesh	19	M	21.00 Marks	290	14.00
21	DR. WHITE	LUCKNOW	Uttar Pradesh	19	F	19.50 Marks	180	09.00
22	Rajat Mishra	Lucknow	Uttar Pradesh	19	M	19.50 Marks	20	04.00
23	A. Taseem	Lucknow	Uttar Pradesh	19	M	21.70 Marks	30	01.00
24	M. Kamal Nadeem	Chhapra	Uttar Pradesh	19	M	22.20 Marks	20	01.00
25	MOHAMMAD	Lucknow	Uttar Pradesh	28	M	22.80 Marks	20	01.00
26	Ashutosh	Gorakhpur	Uttar Pradesh	19	M	19.50 Marks	20	01.00
27	Muhammad Usman	Lucknow	Uttar Pradesh	22	M	20.00 Marks	14	01.00

INTEGRAL UNIVERSITY
Lucknow, India



INSPIRING EXCELLENCE

CERTIFICATE OF COMPLETION

This is to certify that **Dimpley Siddiqui**
Bachelor of Education, Integral University

Has successfully completed 30 ECTS value added course (CAV-24 02) on

Data Structure using Advanced C Programming

Organized by the Department of Computer Applications in association with Integral University Centre for
Advanced Training (IUCAT) from 30-09-2024 to 11-10-2024

Issue Date: 10/10/2024

Dr. Farhan Mahmood

Associate Professor
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Dr. Farooq Akhbar

Assistant Professor and
BCAT Coordinator
Integral University, Lucknow

Dr. Muhammad Farid

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