Kalindi College

(NAAC Accredited 'A' Grade)

University Of Delhi

DEPARTMENT OF COMPUTER SCIENCE

ACADEMIC SESSION

2020-21

Table of Contents

1. Brief Introduction of Department:

In the academic year of 1991-92, the Department of Computer Science came into existence with an extremely modest infrastructure comprising of 3 computers but a great vision. Starting with B.Sc. General in the annual mode, the academic programmes of the department kept growing and finally in the year 2011-12, B.Sc. (Honours) in Computer Science was introduced. The Department of Computer Science at Kalindi College has kept pace with academic programmes offered by other colleges in the university. With highly qualified and experienced faculty using the latest technical assistance and techniques, it has emerged at the forefront among all the departments with good performing students. Currently, the department is running courses for B.Sc (Hons) Computer Science, Computer Science papers of B.Sc. (Program) Physical Science and B.A. (Programme) in Computer Applications respectively apart from Computer Science papers of General Electives being offered to interdisciplinary Honours courses and general programmes of the College.

In the recent years, the department has taken the lead in the digitisation of the course structure and curriculum of the college. Apart from the FDPs, the Department of Computer Science organises Orientation Programmes, Departmental Fests, Student Awareness Programmes, Academic Conferences and many other events on regular basis for overall development of the students. The students are also encouraged to participate in academic and non-academic inter-college and intra-college activities..

2. **Detail of the Scope of the Subject:**

    Computing is at the heart of almost everything in our daily life nowadays. Every industry has good magnitude of intersection with Computer Science which is growing by the day. The Information Technology sector, an allied field of Computer Science, is growing at an even higher rate. The sector recorded the highest growth rate several times in last two decades. It generates the scope of careers for skilled computer science professionals and hence keeps the relevance of the subject alive. The scope of Computer Science academic programmes covers a broad spectrum of career opportunities. To list a few careers options:-

    - Android Programmer
    - Application Developer
    - Business Analyst
    - Data Analyst
    - Database Administrator
    - Games Developer

- Information Systems Manager
- IT Consultant
- Multimedia Programmer
- SEO Specialist
- System Analyst
- System Developer
- Website Designer

Apart from opting for the jobs available in the market, many of the graduates pursue higher studies such as M.Sc (CS), MCA, MBA and research degrees after completing Master degree courses.

3.   **Detail of the Faculty members**

S.No.	Name	Designation	Qualification	Area of Specialization
1	Dr. Vandana Gupta	Associate Professor	Ph.D., MCA	Software Testing
2	Ms. Shalini Sharma (On Study Leave)	Assistant Professor	M.Phil., MCA, Ph.D. (Pursuing)	Computer Networking
3	Dr. Nidhi Arora (Teacher–in-Charge)	Assistant Professor	Ph.D. , M.Phil., MCA, MIT	Social Networks and Evolutionary Algorithms
	Ms. Sweety	Assistant Professor	M. Phil, MCA, Ph.D. (Pursuing)	Artificial Intelligence Techniques

4. Detail of Laboratory Staff

S.No	Name	Designation
1	Ms.Mamta Sachdeva	Senior Technical Assistant
2	Ms. Asha Khantwal	Senior Technical Assistant
3	Mr. Shish Kumar	Laboratory Attendant

5. Medium of Instruction: English

6.   Course Detail:

i) For Honours Course

1st Year

Semester	Core	Generic Elective(For Inter Disciplinary Hons)	AECC
I	• Programming Fundamentals using C++ , • Computer System Architecture	GE 1 Programming Using Python	Environmental Science, English Communication/MIL Communication.
II	• Programming in JAVA, • Discrete Structures	GE 2 Database Management Systems (Theory and Practical)	

2nd Year

Semester	Core	Generic Elective(For Inter Disciplinary Hons)	SEC (Any one)
III	• Data Structures, • Operating Systems • Computer Networks	GE 3 Computer Networks (Theory and Practical)	Web Designing and Development/Programming in Python
IV	• Design and Analysis of Algorithms • Software Engineering • Database Management Systems	GE 4 Information Security and Cyber Laws (Theory and Practical)	Android Programming/Introduction to R Programming

3rd Year

Semester	Core	DSE-I(Any one)	DSE-II (Any one)
V	• Internet Technologies , • Theory of Computation	a) Data Analysis and Visualization b) System Programming c) Combinatorial Optimization	a) Microprocessor b) Digital Image Processing
VI	• Artificial Intelligence • Computer Graphics	a) Information Security b) Data Mining c) Advanced Algorithms	a) Machine Learning b) Deep Learning c) Unix N/w programming d) Project Work / Dissertation

ii) For B.Sc. Programme Course

1st Year

Semester	Core	AECC
I	Problem Solving Using Computers	(English/MIL Communication)/Environmental Science
II	Database Management Systems	Environmental Science / (English/MIL Communication)

2nd Year

Semester	Core	SEC (Any one)
III	Operating Systems	Data Analysis using Python Programming/Introduction to R Programming
IV	Computer System Architecture	Programming in C++/ Programming in Java

3rd Year

Semester	DSE (Any one)	SEC (Any one)
V	Data Structures/Digital Image Processing	Web Design using HTML /Advanced Programming in Java
VI	Computer Networks/Analysis of Algorithms/Project Work+Dessertation	Android Programming/PHP Programming

iii For B.A. Programme Course

1st Year

Semester	Core
I	Computer Fundamentals
II	Database Management Systems

2nd Year

Semester	Core	SEC (Any one)
III	Computer Network and Internet Technology	Word Processing and Presentation Software/PHP Programming
IV	Multimedia Systems and Applications	Data Handling Using Spreadsheet/ Web Designing using HTML 5

3rd year

Semester	DSE (Any one)	SEC (Any one)	GE-Interdisciplinary Programme Courses (Any one)
V	Programming in Java/Programming in Python	Open Source Software/ Desktop Publishing	IT Fundamentals
VI	Information Security and Cyber Laws/Project Work+Dessertation	System Administration and Maintainence/ Android Programming/Data Visualization using R	Multimedia and Web Design/ Data Science using R/ Data Science using Python

7. **Infrastructure:**

- Class Rooms with LCD projector facility

- Departmental Library

- 03 Fully Networked Laboratories with LCD projector

  ❖   Completely Air-conditioned

  ❖   88 LAN Enabled Computers

  ❖   Server Room

  ❖   100% Power Back-up

- Staff Room

- Separate Discussion Room for students.

8. **University Award and Achievements:**

   Teachers

   1. Book Published: Emerging Trends in Information Technology, 2019, Editor- Dr. Nidhi Arora, Publisher- Bloomsbury India, ISBN: 978-93-89165-99-9

   2. Dr. Nidhi Arora chaired a session in International Conference on Advances in Smart Materials and Emerging Technologies organized by IGDTUW held on Jan 23-24, 2020 at IGDTUW , Delhi

   3. Dr. Reena Jain presented a paper entitledas"**Impact on Bullwhip Effect in Food Industry Due to Food Delivery Apps"** in **National Conference** on Emerging Trends in Information Technology NCETIT-2019, held during August 1-2, 2019

   4. Journal Publication: REENA JAIN and MONA VERMA. (2019) "Block Chain: A Pathway to Improve Performance Measures of Supply Chain"   (Accepted in IJSOI) (Indexing:SCOPUS), (ISSN: 1741-5403), (H Index: 12), (SJR: 0.12), (Publisher: Inderscience)

   5. Dr. Reena Jain presented a paper entitled as **"Two Echelon Supply Chain with Vendor Managed Inventory and Revenue Sharing Contract under Shortage Gaming Scenario"** in 52nd Annual Convention of Operational Research Society of India (ORSI) and International Conference on December 15-18, 2019 held at Indian Institute of Management, Ahmedabad.

6. Ms.ArokiaRamya presented a paper entitled as "In-depth Analysis of the Performance of RSA and ECC in Digital Signature Application" in UGC sponsored National Conference on Emerging Trends in Information Technology (NCETIT-2019) by the Department of Computer Science held on 1-2 August 2019 at Kalindi College, Delhi.

7. Dr. Reena Jain, awarded with Dr. S. RadhakrishnanAward for Teaching during the year 2009-2010 by Healthy Universe Foundation.

8. Dr. Reena Jain presented a paper in an International conference on "Emerging trends in inventory, supply chain and reliability modeling (ETISCRM 2018)organised byAssociation of Inventory Academicians and Practitioners(AIAP) held on December 21-23, 2018 at Satyakam Bhawan , University of Delhi, Delhi, India.

9. Dr. Reena Jain Submitted her Ph.D. Thesis Titled "Supply chain policies for curbing bullwhip effect", University of Delhi in March 2020

Students

1. Paper Publication :Terrance, A.R, Sharma, S., Sharma, A., Tyagi, K., Shokeen, N., &Saini, N. (2019), In-depth Analysis of the Performance of RSA and ECC in Digital Signature Application , *EMERGING TRENDS IN INFORMATION TECHNOLOGY* (pp. 15-27). Bloomsbury, ISBN No. 9789389165999

2. Participation in the National Seminar on 5th April, 2019 by ArokiaRamya Terrance, Mink Singh Chauhan and ShivaniYadavon "Cyber Security Systems" organised by SPM College, Punjabi Bagh, New Delhi.

3. Paper Titled "Analysing Student's Relationships through Network Modelling andAnalytics" was presented at Inter-College Science Festival at DeenDayalUpadhyaya College, University of Delhi on 11th -12th March 2019 by Ms. UmangAggarwal, B.Sc. (H) Computer Science IInd Year. The paper was authored by Dr..Nidhi Arora (Assistant Professor), Dr. Reena Jain (Assistant Professor) and three students named UmangAggarwal, MahimaKumari and Rekha Pal from B.Sc. (Hons.) Computer Science IInd Year: **The paper won Third prize for Presentation.**

4. Poster Titled "A Meticulous Study to Scrutinize the Effects of Collaboration Patterns on Academic Performance" was presented by Ms. Chetna Gupta, Ms. NainaChaudhary, Ms. Pankhuri Jain at Inter-College Science Festival at DeenDayalUpadhyaya College, University of

Delhi on 11th -12th March 2019. The poster was authored by Dr. Vandana Gupta (Associate Professor) and three students named Ms. Chetna Gupta, Ms. NainaChaudhary and Ms. Pankhuri Jain from B.Sc. (Hons) Computer Science IIndYear:**The poster won Appreciation Prize out of 80 posters displayed.**

5. Paper Titled "Investigating Factors Influencing Scholastic Execution at Undergrad Level using Network Analytics" authored by Dr. Nidhi Arora, Dr. Reena Jain, Dr. Vandana Gupta, UmangAggarwal, ChetnaGupta,MahimaKumari,NainaChaudhary, Pankhuri Jain, Rekha Pal, presentation and publication in 3rd International Conference on Advanced Informatics for Computing Research(ICAICR-2019), Shimla, India, Jun 15-16, 2019. The Proceedings published by prestigious ICPS, ACM.

6. Workshop "Skill Development to Build clean India" held on 7th and 8th June 2018 at Deshbandhu College, University of Delhi in collaboration with ONGC and CSR, India was attended by students: Ms. Mink, Ms.Pallavi, Ms.Aarushi, Ms.Shivani, Ms.UmangAggarwal, Ms. Swati Basu.

7. Paper titled, "A Case Study of Kalindi College for Women" by **Faculty:** Nidhi Arora, Reena Jain, Vandana Gupta and**Students:**Aarushi, Mink Singh Chauhan,ShivaniYadav, Pallavi Pal, Swati Basu, UmangAggarwal, at the International Conference on "Empowering Women: Fostering Entrepreneurship, Innovation and Sustainability" jointly organised by NITI Aayog and Shri Ram College of Commerce, Office of International Programmes (OIP) at India International Centre on 16th July- 17th July, 2018.**Oral Presention** in the National workshop on Skill Development to Build a Clean India was given by Ms.UmangAggarwal.

8. Paper titled"Harnessing Social Media in Learning: A Perspective for Clean, Green, Lean and Efficient College Campuses" was presented by**Faculty:** Nidhi Arora, Reena Jain, Vandana Gupta, **Students:**Aarushi, Mink Singh Chauhan, ShivaniYadav, Pallavi Pal, Swati Basu, UmangAggarwal,Proceedings of National workshop on Skill Development to Build a Clean India, 2018.**Poster Presentation** in the National workshop on Skill Development to Build a Clean India was done by Ms.Mink andMs.Shivani.

9. Presented poster titled "Assessment of Security Mechanism in the Mobile Payment System" by Faculty:ArokiaRamya Terrance, Students:KanikaTyagi, Mink Singh Chauhan, Nikita

Shokeen in the Science Festival - Turiyojas held during March 11-12, 2019 in DeenDayalUpadhyaya College, University of Delhi.

10. Presented Paper titled "Devising User Friendly Payment Security Scheme in Smartphones" by Faculty:ArokiaRamya Terrance, ShaliniSharma,Students:NityaSaini, ShivaniYadav, Anu Sharma in the Science Festival - Turiyojas held during March 11-12, 2019 in Deen Dayal Upadhyaya College, University of Delhi.

9. **University Rank Holder & No. of O Grade and A+ grade Achievers (in various Computer Science papers):**

   Grade O- 47

   Grade A+ -265

10. Research in Department:

I. **Title: Applications** of Data Analytics in Education

   Faculty: Ms. Shalini Sharma, Ms. ArokiaRamya

   Students: NityaSaini, Swati Basu, UmangAggarwal, Kaumudi Singh, RitikaTyagi,Yuthika Pant, TanuPandey, RashmiKumari, NishithaAnand, HansikaSaxena

   Duration: 2019-2020 (1 year)

II **Title:** Online Transaction Security Issues in MANET

   Faculty: Ms. Shalini Sharma, Ms. ArokiaRamya

   Students: Mink Singh Chauhan, ShivaniYadav, NityaSaini, Anu Sharma, KanikaTyagi and Nikita

   Duration: 2018-2019 (1 year)

III. **Title:** Analysing Real World Relationships through Network Analytics

   Faculty: Ms. Nidhi Arora, Dr.Reena Jain, Dr.Vandana Gupta

   Students: Chetna Gupta, MahimaKumari, NainaChaudhary, Pankhuri Jain, Rekha Pal and UmangAggarwal

   Duration:2018-2019 (1 year)

IV. **Title:Social Media for Youth: A Boon or a Bane**

   Faculty: Dr. Vandana Gupta, Dr. Nidhi Arora, Dr. Reena Jain

Students: Ms Mink, Ms. Pallavi, Ms. Aarushi, Ms. Shivani, Ms. Umang

Aggarwal, Ms. Swati Basu

Duration:2017-2018 (1 year)

V. Title: Result Analysis Suite and Feedback System

Faculty: Mr.PankajSambyal

Students: Ms. AnamikaRustagi, Ms. Sonia Rani, Ms. ChinabBudhiraja, Ms. Bhawna Sharma

Duration:2017-2018 (1 year)p'

11. Highlights of Departmental Activities:

<u>Departmental Society Physcom:</u>The Department of Computer Science organises events on annual basis. ThePhysCom society is the joint venture of Physics, Physical Science and Computer Science Departments, which organizes various activities round the year. The purpose of thePhysCom activities is to enhance the exposure of the students to the latest technology. The Computer Science department under Physcom society conducted workshops on topics of the state of the art technology such as Data Analytics, Cyber Security, Aerodynamics and Advanced Java in past years. The society also organizes workshops on Anti-Ragging and Grievance Redressal Awareness Workshop, Sexual Harassments, Carrier Counselling, Competitive examination workshops from time to time. The various events hosted by PhysCom society during the academic year 2019-2020 are Inter-College Technical Fest – ASTRODROID, BlackBox, Quiziladder, Decode and Hunt, Mind Scribbles (Online Quiz Competition), Design your Robot Competitionto name a few. The winners of the competitive events were awarded with the certificate and prize money.

<u>National Conference:</u> UGC sponsored National Conference on Emerging Trends in Information Technology (NCETIT-2019) was organized by the Department during 1st-2nd August 2019 in the college premises. Various renowned computer science experts from prestigious Institutions such as JamiaMilliaIslamia, JNU, IGDTUW, Delhi University, IP University as well as Industry specialists were invited to deliver talks. The conference was attended by students and academicians across the country and Research Papers covering wide areas of computer science and IT were presented.

12. Constituted Scholarships and Prizes:

Name	Criteria for Award
Mrs. Asha Rani Sethi Memorial Scholarship	Best Student of Computer Science
RohitMalhotra Scholarship	Merit Based Scholarship

13. Distinguished Alumni:

Year	Name	Designation	Organization
2005-2008	Ms. Neha Bansal	TGT	G.N. World School
2007-2010	Ms. ChetnaAggarwal	TGT (Computer Science)	SarvodyaKanyaVidyalya
2010-2013	Ms. Jyoti	Assistant Professor	KeshavMahavidyalya, D.U.
2010-2013	Ms. Manisha Bagri	Assistant Professor	ARSD College, D.U.
2014-2017	Ms. Tazeen Khan	Instructor	MMU LPU Chitkara University
2013-2017	Ms. Vidhi Sethi	Scientist B	Central Government
2012-2015	Ms. Gunjan Diwan	Analyst(Risk Management)	E&Y (Ernst & Young)
2012-2015	Ms. Kanika Anand	RPA Developer/Data Analyst	Nokia
2013-2017	Ayushi Shukla	Cyber Security Specialist	Fidelity International
2011-2014	Shagoon Nayyar	Technical Consulting Engineer, Women Leadership Enablement Program (Hi-Po) Candidate, CX, Cisco	CX Collaboration, CISCO

14.   Some Glimpses

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