Dr B R Ambedkar Open University
Hyderabad
Department Profile-Computer Science & Applications

1. **Mission Statement of the Department**

   - Enrichment of the academic programmes from the department of Computer Science & Applications
   - Competency building through education and training programmes
   - Interactive individual based teaching learning processes
   - Reliable and credible student evaluation systems
   - Result oriented, accountable and transparent administrative and logistic support systems
   - Research, innovation, training and networking for system development and staff development.

2. **Vision of the Department**

Dr.B.R. Ambedkar's social philosophy of education as a means of creating an egalitarian society is the vision of this University. The **Department of Computer Science & Applications** was established in the year 2018 with the establishment of the university. Providing quality education and training programmes in the field of Computer Applications with a focus on hitherto deprived sections at lower costs by using the modern technologies in teaching is the goal of this department. The programmes of Department of Computer Science & Applications are aimed at making education and training instruments for living and for making a living.

3. **Curriculum in operation since**—
   a) U.G-(B.A., B.Com., & B.Sc.) Computer Applications   2018 (New program of
                                                                       CBCS Pattern)

4. **Objectives and outcomes of the curriculum**

Sl. No	Programme	Objectives	Outcomes	Extent of Attainment
1	U.G – (B.A., B.Com. & B.Sc.) Computer Applications	1. To impart the fundamental knowledge and concepts of Computer	1. Demonstrate the ability to use skills in Computer Applications and its related areas of work for	95%

		Applications. 2. To develop competent professionals in the field of Computer Applications with high moral and ethical values. 3. To enhance the skills in for those who are already in this field. 4. To prepare students to the job market competition. 5. To strengthen the tempo on scientific and computer applications research. 6. To prepare students for professional interaction and leadership. 7. To promote student's commitment to self-study and life-long learning.	Formulating and tackling different methods of problems and identifying and applying Appropriate algorithms to solve a wide range of problems associated with Computer Applications. 2. Students will get opportunities in the higher learning into PG and PhD programmes. 3. Employment in IT sector and also all other areas wherever the computer knowledge is must. 4. Promotions in the employment	

1. Course wise objectives and outcomes

U.G

Sl. No	Title of the paper	Semester / year	Objectives	outcomes
1	U.G-Semester-1 DSC-1 Computer Fundamentals	I	1. To Understand the concept of Hardware and Software 2. To Understand Various types of softwares and operating systems. 3. To Understand e-learning and e-class room 4. To understand input and output devices, LED, LCD and Memory. 5. To Understand Various Logic Gates and Number Systems. 6. To Understand functions of CPU and its functions 7. To Understand the Computer virus and its types.	1.Students will understand the concept of Hardware and Software and their types and Operating systems 2.Students will understand e-learning and e-class room, input and output devices, LED, LCD and Memory. 3. Students will understand number systems, CPU and its functions and Viruses.
2	U.G-Semester-2 DSC-2 Programming with Python	II	1. To learn about data types and operators and their types in python 2. To learn control statements, strings and arrays in python. 3. To know about the functions. 4. To learn lists tuples, dictionaries. 5. To learn about various GUI libraries in python 6. To learn about object-oriented concepts in Python 7. To learn about files and databases in Python	1. Students will understand the different data types and how they differ from data types in other languages like C, C++ and Java. 2. Students will understand about new concept like Lists, Tuples, Dictionaries and NumPy in Python. 3. Students will understand various Libraries used for graphics in python.
				.

3	U.G-Semester-3 DSC-3-Programming with C & C++	III	1. To Understand Program and its Design. 2. To Flow chart and Algorithm 3.To Learn the concepts like functions, pointers, strings and arrays. 4. To understands the concepts Structure and Union in C 5. To know about files in C 6. To learn about OOPs concepts: Class, Object, Polymorphism, Abstraction, Encapsulation and Inheritance.	1. On completion of the course the students will have gained an understanding How to write an algorithm and flow chart for a program. 2. Students will improve logical thinking. 3. Students will able to write programs in C.
4	U.G-Semester-4 DSC-4-Database Management Systems	IV	1. To understand basic concepts of Database and its design 2. To various data models and Normalization 3. To learn storage structure and database transactions.	1. After Completion of this Course students will learn how to design a database. 2. On completion of the course the students will have gained an understanding of Various database architectures. 3. Students will learn how to create database, how to store and retrieve data.
5	U.G-Semester-5 DSC-5 – Programming with Java	V	1.To know Data types, Operators, Control Statements in Java. . 2.To know additional features of OOPs. 3. To know Packages and Interfaces and Collections in Java 4. To know Exception Handling in Java 5. To know AWT and Event Handling in Java	1. On completion of this course, students will learn about additional features of Object Oriented Programming 2. Students will understand and gain knowledge about Java Packages and Interfaces. 3. Students will learn

				about Exception handling and event handling in Java
6	U.G-Semester-5 DSE-A Operating Systems	V-Elective-1	1. To understand fundamentals of Operating systems and its types. 2. To understand Processors and threads in OS 3. To understand File Systems and Deadlocks in Operating systems. 4. To Understand Multi Processor systems and OS Security.	1. Students will gain knowledge about Operating systems and its types 2. Students will get knowledge about Deadlocks and Processors in OS. 3. Students will learn Memory Management in OS.
7	U.G-Semester-5 DSE-B – Web Designing using JavaScript	V- Elective - 2	1. To Understand Basic Concepts of Web Design 2. To learn basic syntax of JavaScript 3. To learn how design static and dynamic webpages 4. To learn how to develop a dynamic website	1. After completion of this course students will learn importance of JavaScript in web designing 2. Students will learn how to develop individual webpages. 3. Students will gain knowledge to develop webpages.
8	U.G-Semester-6 DSC-6-Internet Technologies Using HTML5	VI	1. To understand network and its types. 2. To understand various types of transmission media 3. To understand LAN technology and its Layers 4. To understand various layers of network model and their functions 5. To learn about HTML and CSS	1. Students will understand what is network and its types. 2. Students will gain knowledge about routing algorithms. 3. Students will learn how data will be transmitted over a network. 4. Students will learn

				about how to develop a static webpage and its design
9	U.G-Semester-6 DSE-C- Data Structures using Java	VI-Elective - 1	1. To understand mathematical analysis of an algorithm 2. To understand List, Stack, Queue data Structures and their operations 3. To understand understand tree data structure and Heaps 4. To understand sorting, searching and Graphs concepts.	1. Students will learn how to analyze and algorithm. 2. Students will gain knowledge about various data structures and operations 3. Students will learn how to search sort data.
10	U.G-Semester-6 DSE-D-Web Designing with PHP	VI-Elective-2	1. To understand PHP and its basics 2. To understand Variables, datatypes in PHP. 3. To understand loops and functions in PHP 4. To understand OOPs concepts in PHP 5. To understand how to develop back-end webpage.	1. On completion of the course, the student will have gained an understanding of over all idea of PHP 2. To impart knowledge about how to develop a back-end web page. 3. Students will learn how to connect database with front end.
11	Skill Course-3-Multimedia Applications Using GIMP	Skill enhancement Course -1	1. To understand fundamentals of GNU Image Manipulation Program 2. To describe various concepts of multimedia and animation 3. To describe various design and editing tools of GIMP 4. To know about MIDI audio, analog and digital video	1. On completion of this course students will gain knowledge about how to edit video and audio files and animation. 2. Students will learn various design tool to animate.
12	SkillCourse-4-	Skill	1. To understand about	1. Students will

	Multimedia Applications Using Blender	enhancement Course -2	Blender software 2. To understand visual effects using blender 3. To understand how to create interactive 3D motion graphics	understand usage of blender software 2. Students will understand how to use blender software for visual effects 3. Students will gain knowledge how to develop 3D graphics using blender.

P.G   NOT STARTED

M.Phil NIL

Ph.D NIL

4.   **Approval of Curriculum in the Board of Studies (BOS)-Minutes of BOS) –To be submitted**

5.   **How many midterm appraisals made for the curriculum refinement? (Provide the evidence**)
1.   **B.A., B.Com., & B.Sc.(Computer Applications)   Launched in 2018**
2.
3.

8. Whether syllabus is restructured in the form of modifications / additions / deletions (Provide the evidence)- **B.A., B.Com., & B.Sc.(Computer Applications) Launched in 2018.**

9. Did the department train the course writers (Yes / No) **At the time of Course writers Meeting**

10. Did the department obtain the feedback with regard to the quality of course material from the students (Yes / No)
     (If yes provide the evidence) **To be submitted**

11. Did the department obtain the feedback from teachers with regard to the quality and relevance of course material (Yes / No) To be submitted
        (if yes Provide the evidence)

12. Uniqueness of the curriculum

The structure of the B.A., B.Com., & B.Sc. (Computer Applications) is in English medium at our University having the   as an ancillary subject with another principal subject continues to be as 8 theory papers of 80 marks each + 1 practical of 20 marks per semester. It is recognized that the students learning Computer Applications at the Ancillary/General level may be specializing in this subject. To do quantitative work in any subject familiarity with basic computer knowledge is necessary. The contents of the subject of Computer Applications have now stabilized to a considerable extent. Hence the basic framework of this course remains the same as included in the Computer Applications 3 yr(6 Semesters) syllabus. However, in view of the experience gained in these years certain modifications have been carried out emphasizing certain areas and deemphasizing certain other areas. Also a much larger role has been given to computer based methods. Familiarity with computers, computer programming and software packages is sought to be achieved in this course. This has been done as, now-a-days all the work of statistical nature is carried out through the medium of computers and this familiarity and training has become a necessary part of computer education.

13. Profile of the department

a. **Distinguished personalities currently working**

Mr. Narsaiah Battu, Assistant professor(c) of Computer Applications, serving the department since 03.03.2022 to till date, with an experience of 7 years.. He has published 4 books.

PERFORMANCE OF THE DEPARTMENT –To be submitted later-data is yet to receive from computer branch

Sl. No	Year	Course	Enrollment	Pass out	Wastage	Equity	Employment
1	2017-18	U.G					
2		P.G					
3		M.Phil					
4		Ph.D					
5		Others					
6	2018-19	U.G					
7		P.G					
8		M.Phil					
9		Ph.D					
10		Others					

11	2019-20	U.G					
12		P.G					
13		M.Phil					
14		Ph.D					
15		Others					
16	2020-21	U.G					
17		P.G					
18		M.Phil.					
19		Ph.D					
20		Others					
21	2021-22	U.G					
22		P.G					
23		M.Phil					
24		Ph.D					
25		Others					

14. The academic activities of the department from 2018-22

As per UGC guidelines formulated the year wise scheme for the Under Graduate programme in Computer Applications was modified into the Choice Based Credit System (CBSC) and semester wise scheme. The skill enhancement and discipline specific elective courses were introduced along with core subjects including theory and practical classes. Supply of Self learning material (Printed Course Material) to all the enrolled students.

- Supply of e-content of Self learning material to those students who have opted.
- Organizing offline classes (Face to Face interaction) regularly as per time table in the study centre.
- Organizing online classes regularly as per time table from the University Headquarters.
- Hands on Practical Training Classes in Regional Coordination centres.
- Supply of Audio Lessons
- Supply of Video Lessons
- Teleconference Through T SAT/ Doordhasan

15. Development of the new CBCS curriculum from 2018-22

The B.A/B.Com/B.Sc Computer Applications programme is started as CBCS Pattern during the year 2018. Six new courses (Four discipline Specific Courses and two Skill Enhancement Courses) are added the curriculum is redesigned towards Knowledge, Skill and Research orientation. In total there are 12 Courses. The department developed the course material for the all 12 courses in both Telugu and English media. The process started in the year 2018 and completed in the year 2022. All the courses are supported by sufficient Practical Component. Accordingly, 10 Practical manuals are developed in both the media.

16. **Teaching efforts in pandemic situation and student response**

The Department of Computer Applications was arranged **online classes, supplied the audio and video lessons** and **telecast** by **T-SAT channel** to the students. Video lessons were also delivered through **BRAOU You Tube Channel.**

17. **Success stories of our students, If possible with photos ---**

18. **Qualifications and skills obtained by the faculty from 2018-22**

Obtained online teaching skills the MOOCs training course offered by CEMCA-Dr.B.R.Ambedkar Open University

19. **Capacity building programs attended by the faculty from 2018-22**

Attended Workshops on OERs, MOOCs and SWAYAM

20. **SLM Preparation during the last 5 years**

All the Undergraduate courses in Computer Applications are developed in SLM. About 10 theory and10 practical manuals are developed from 2018-2022.

21. **Achievements of the faculty from 2017-22 ----**

22. **Composition of employment secured by the frequency of your students (Job profile and photos of the students) NOT Obtained Data**

23. **Did the department manage alumni association (Yes / No) (if yes provide the details)**

24. **Did the department manage placement cell (Yes / No) (if yes provide the details)**

Mention the processes of interface with recruiting agencies / companies (Yes / **No**) (if yes provide the details)

25. **Future scenario of the department (Institutional Development Plan-IDP) for the next five years** (What you are willing to do and how do you attain the same)

The department wishes to launch P.G. Programme in Computer Applications and to start some skill based diplomas such as and P.G.Diploma in Computer Applications The department is planning to organize seminars/ webinars workshop for the benefit of counsellors and students

26. **What is the department USP (Unique selling proposition)**

a. **Curriculum:** The curriculum is well developed keeping in mind the Concepts of subject knowledge, employability shills and learning out comes. The students after completion can perform professional services in the software side, Government sector, and statistical data analysisist.

b. Teaching technologies:

The students are provided with face to face counseling, Practical training, Using the online apps for teaching, multimedia approach and supplying Printed text material, audio, video recorded lessons. Uploading of audio, video in the BRAOU youtube.

c. Overall: -----------------.

27. SWOC analysis of the department

Dr.B.R.Ambedkar Open University is the first of its kind Open and Distance Learning (ODL) institution established during the year 1982. The department of Computer Applications was also established in the year 2018 at our university.

We divided the Strengths, weakness, opportunities and challenges (SWOC) components into three general areas-**Teaching, Research and Resources**

1) **Strengths of the department**

   A) **Teaching:** As it is an ODL institution the department of computer science and applications developed self learning course materials by involving eminent, highly qualified and specialized subject experts of other universities. These learning materials are designed and developed in accordance with U.G.C and State Council Model Curriculum. The learning outcomes are clearly incorporated into the curriculum. The printed course material developed is knowledge and skill based. This motivates the students for the research also. Supply of printed course material in the department is first of its kind in this discipline. Apart from these learning materials the department also prepares audio and video lessons by the experts and supplied to the students. Face to Face counselling sessions are also arranged regularly during Sundays with subject experts. The practical training classes will be conducted in the regional coordination centres by senior faculty.

   B) **Research:** nil

   C) **Resources:** The model developed in this organization is utilizing the available physical and human resources. Accordingly the department tapping the eminent subject experts to develop the learning resources. The department is having eminent and effective teachers and supporting staff. The university is receiving funds from the state government, U.G.C and Student Fee, hence there is no issue regarding financial resources.

2) **Weaknesses of the department**

   A) **Teaching:** The department facing the problem availability of senior faculty to teach in the study centres. This discipline Computer Applications is not offering by majority of the study centres. Hence locating the practical training centres is a weakness.

   B) **Research:** -------------------

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C) **Resources:** --------------------

3) **Opportunities for the department**

A) **Teaching:** It is an opportunity to teach using multimedia approach. The Interactive Communication Technologies (ICTs) are better utilized for teaching.

B) **Research:** --------------------------.

C) **Resources:** After completion of the degree in private and government sector lot of vacancies is there.

4) **Challenges confronting the department**

5) **Teaching:** The department is facing problem with lack of teachers in the department. This is the biggest challenge to prepare more and more programmes through MOOCs and OERs

6) **Research:** -----------------

7) **Resources:** The scientific human resources are important to get collaborations and financial sponsorships.

I. (a) Define the policy of the department to promote systematic and disciplined based research (500 words).

The department follows the research policy of the University. Refer University research policy.

Note: provide web-link to
1. Minutes of the governing council / syndicate / board of management / academic council / research council related to research promotion policy adoption.
2. Policy document on promotion of research

3. Any other relevant information

II. Research facilities for teachers, other academics and learners (Research facilities available to the teachers, other academics and learners of the institution for pursuing research)
1. Reference library
2. Online subscription to research journals
3. Research / statistical data bases
4. Media laboratory / studios
5. Science laboratories

6. Computing laboratory and support for both qualitative and quantitative data analysis including software's
7. Data curation and sharing facility
8. Language laboratory
9. Central instrumentation center

Options (Choose any one of the below)
   A. Any 6 or more of the above
   B. Any 4 or 5 of the above
   C. Any 2 or 3 of the above
   D. Any 1 of the above
   E. None of the above

III. **Resource mobilization for research** (Grants for research projects and chairs sponsored by the government and non government sources such as industry, corporate houses, international bodies, endowments, professional associations etc has been received by the institution over the last five years) (INR in lakhs)

NIL

IV. **Research projects funded to teachers** (Number of research projects funded by the institution / government and Non governmental agencies per teacher)

NIL

V. Innovation eco system

NIL

VI. Workshops / seminars conducted on innovative practices (Total number of workshops/ seminars conducted year wise over the last five years on)

NIL

VII. Innovative content developed in the form of e-modules / e –SLMS/ MOOCs for

NIL

VIII: Awards for innovation (Number of awards for innovation received by the institution, its teachers / other academics / research scholars / learners year wise over the last five years)

NIL

IX. Research publications and awards

Mechanism to check malpractices and plagiarism in research (The institution has a stated code of ethics for research, the implementation of which is ensured by the following over last five years.)

The department follows the research policy of the University. Refer University research policy.

X. Ph. D Degrees awarded per recognized research guide of the university

Number of full time teachers recognized as guides by the university as per UGC regulation over the last **five years** [-----------   ]

Recognized by the University: ----------------------

Number of PhD degrees awarded per recognized research guide of the university year wise over the last **five years**   **[NIL]**

XI. Research publications [Number of research papers published per teacher of the institution in the journals notified by UGC care list during last **five years**]

NIL

XII. Books and chapters in edited volumes published per teacher etc. during last five years

S.No	Title	Publisher	Year	Level	ISBN
1.	Programming with C & C++	Himalaya Publications	2019	UG (B.Com (CA)) II Semester	

XIII. Citations of the publications [impact factor of the research publications from the institutions] during last five years

Citations of the publications by teachers and academics over the last five years based on average citation index in Scopus / web of science

Sl.No	Name of the faculty	Average citation index of the publications in Scopus / web of sciences	Year
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XIV. h-index of the institution during last five years

Sl.no	Name of the faculty	Average citation index of the publications in Scopus / web of sciences	Year
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XV. Consultancy during last **five years**

NIL

XVI. Revenue from consultancy [Revenue generated by the institution from consultancy] during

NIL

XVII. **Revenue** from training / seminars / conferences / etc. (Revenue generated through sponsored training programs / seminars / conferences/ sponsorship etc.) during last **five years**

NIL

XVIII: Extension activities [The impact of the extension activities of the institution in sensitizing the learners and other stakeholders to social and sustainable development issues leading to inclusive society over the last five years]

NIL

XIX: Recognition of the extension activities [Number of awards and recognition received for extension activities from government / recognized bodies during last 5 years]

NIL

XX. Collaborative extension and outreach programs

NIL

XXI: Participation in extension activities during last **five years**

        NIL

XXII. Collaborative activities with institutions during last **five years**

        NIL

XXIII: Collaboration with industries

        NIL

1. **Conferences/Seminars/ Workshops/ Symposiums/ Refresher Courses/ Orientation Courses participated (please enclose the list)**

S. No.	Title	Organized by	Place & Date(s)