

Symbiosis Institute of Computer Studies and Research, Pune
Bachelor of Computer Applications
Programme Structure 2019-22

| | | | | | | |
|-----|------------------------------|--|--|------------------------------|--|-----------------------------------|
| 1. | OBJECTIVE | BCA offers the prequalification for professionals heading for smart career in the IT field, which measures up to international standards. On completing this course one can do higher studies such as MCA, MBA etc., in any UGC recognized universities or in any other reputed institution in India or abroad. | | | | |
| 2. | DURATION MONTHS) | (IN | 36 (Full Time) | | | |
| 3. | INTAKE | 60 | | | | |
| 4. | RESERVATION | I. Within the sanctioned intake | a) SC (In Percentage) | b) ST (In Percentage) | c) Differently abled (In Percentage) | d) Defence (In Percentage) |
| | | | 15 | 7.5 | 3 | 5 |
| | | II. Over and above the sanctioned intake | a) Kashmiri Migrants (In Seats) | | b) International Students (In Percentage) | |
| | | | 2 | | 15 | |
| 5. | ELIGIBILITY | Candidate should have passed Standard XII (10+2) or equivalent government approved diploma in Engineering/ Technology from any recognized Board with a minimum of 50% marks (45% for SC/ST). A candidate who has appeared for his/ her Standard XII (10+2) or equivalent government approved diploma in Engineering/ Technology examination can apply. However, his/ her admission will be subject to obtaining a minimum of 50% marks (45% for SC/ST). A candidate who has completed qualifying qualification from any Foreign Board /University must obtain an equivalence certificate from Association of Indian Universities (AIU). | | | | |
| 6. | SELECTION PROCEDURE | Symbiosis Entrance Test, Personal Interaction and Writing Ability Test (PI-WAT) | | | | |
| 7. | MEDIUM OF INSTRUCTION | OF | English | | | |
| 8. | PROGRAMME PATTERN | Semester | | | | |
| 9. | COURSE SPECIALIZATION | & | As per Annexure A | | | |
| 10. | FEE | | Academic Fee p.a | Institute Deposit | Total | |
| | | Indian Students | 155000 | 10000 | 165000 | |
| | | International Students (USD equivalent to INR) | 235000 | 10000 | 245000 | |
| 11. | ASSESSMENT | All internal courses will have 100% component as internal evaluation at the Institute level. All external courses will have 40% internal component and 60% | | | | |

| | | |
|-----|--|--|
| | | external component [University] examination. |
| 12. | STANDARD PASSING | OF The assessment of students for each examination is done, based on relative performance. Maximum Grade Point (GP) is 10 corresponding to O (Outstanding). For all courses, a student is required to pass both internal and external examination separately with a minimum Grade Point of 4 corresponding to Grade P. Students securing less than 40% absolute marks in each head of passing will be declared FAIL. The University awards a degree to the student who has achieved a minimum CGPA of 4 out of maximum of 10 CGPA for the programme. |
| 13. | AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE | Bachelor of Computer Applications will be awarded at the end of semester VI examination by taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA. |

14. NATURE WISE DISTRIBUTION OF CREDITS

| Semester | Generic Core | Generic Elective | Specialization Core | Specialization Elective | Open Elective | Audit | Total |
|--------------|--------------|------------------|---------------------|-------------------------|---------------|----------|------------|
| 1 | 18 | 0 | 0 | 0 | 0 | 1* | 18 |
| 2 | 22 | 0 | 0 | 0 | 0 | 0 | 22 |
| 3 | 8 | 12 | 0 | 0 | 0 | 0 | 20 |
| 4 | 14 | 14 | 0 | 0 | 0 | 0 | 28 |
| 5 | 4 | 12 | 0 | 0 | 0 | 0 | 16 |
| 6 | 0 | 16 | 0 | 0 | 0 | 0 | 16 |
| Total | 66 | 54 | 0 | 0 | 0 | 0 | 120 |

* Satisfactory completion of the letter grade course 'Integrated Disaster Management' is mandatory for award of degree.

Programme Structure is approved by the Academic Council subject to its norms & conditions. Any provision in the Programme Structure which violates the basic rules & regulations is deemed to be termed "Null & Void".

Head-Academics

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Annexure A

| Catalog Course Code | Course Code | Course Title | Specialization | Credit | Internal Marks | External Marks | Total Marks |
|---------------------------------------|-------------|---|----------------|-----------|----------------|----------------|--------------|
| Semester : 1 | | | | | | | |
| Generic Core Courses | | | | | | | |
| T3586 | 030121101 | Web Technologies | | 4 | 100 | 0 | 100 |
| T3593 | 030121102 | Computational Thinking | | 4 | 40 | 60 | 100 |
| T2495 | 030121103 | Business Communication | | 2 | 50 | 0 | 50 |
| T3322 | 030121104 | Elements of Mathematics | | 2 | 20 | 30 | 50 |
| T3244 | 030121105 | Introduction to Database Management System | | 2 | 20 | 30 | 50 |
| T3213 | 030121106 | Introduction to Operating System | | 2 | 20 | 30 | 50 |
| T3198 | 030121107 | Introduction to Python | | 2 | 20 | 30 | 50 |
| T4005 | 030121108 | Integrated Disaster Management * | | 0 | 0 | 0 | Letter Grade |
| Total | | | | 18 | 270 | 180 | 450 |
| Semester : 2 | | | | | | | |
| Generic Core Courses | | | | | | | |
| T3594 | 030121201 | Digital Systems and Computer Organization | | 4 | 40 | 60 | 100 |
| T3610 | 030121202 | Applications of Spreadsheets in Business | | 4 | 100 | 0 | 100 |
| T3206 | 030121203 | Advanced Programming in Python | | 2 | 20 | 30 | 50 |
| T3209 | 030121204 | Data Structures | | 2 | 20 | 30 | 50 |
| T3224 | 030121205 | Network Essentials | | 2 | 20 | 30 | 50 |
| T3205 | 030121206 | Web Development using CMS | | 2 | 50 | 0 | 50 |
| F0002 | 030121207 | Flexi-Credit Course | | 2 | 50 | 0 | 50 |
| T3605 | 030121208 | Elements of System and Software Development | | 2 | 20 | 30 | 50 |
| T3609 | 030121209 | Structured Query Language | | 2 | 20 | 30 | 50 |
| T2883 | 030121210 | Core Environmental Studies * | | 0 | 0 | 0 | Letter Grade |
| Total | | | | 22 | 340 | 210 | 550 |
| Semester : 3 | | | | | | | |
| Generic Core Courses | | | | | | | |
| T3202 | 030121301 | Object Oriented Programming | | 4 | 40 | 60 | 100 |
| T3595 | 030121302 | Design and Implementation of Algorithms | | 4 | 40 | 60 | 100 |
| Total | | | | 8 | 80 | 120 | 200 |
| Generic Elective Courses Group | | | | | | | |
| T3237 | 030121303 | Foundations of Data Warehousing and Data Mining | | 4 | 40 | 60 | 100 |
| T3221 | 030121304 | Introduction to Cloud Computing | | 4 | 40 | 60 | 100 |
| T3201 | 030121305 | Mobile Programming | | 4 | 40 | 60 | 100 |
| T3486 | 030121306 | Network Infrastructure Essential | | 4 | 40 | 60 | 100 |
| TE7019 | 030121307 | Big Data Analytics | | 4 | 40 | 60 | 100 |
| T3587 | 030121308 | Advance Web Scripting | | 4 | 40 | 60 | 100 |
| T3596 | 030121309 | Real Time Operating System | | 4 | 40 | 60 | 100 |
| T3606 | 030121310 | Software Engineering Practices | | 4 | 40 | 60 | 100 |
| Total Required Credits | | | | 12 | 120 | 180 | 300 |
| Semester : 4 | | | | | | | |
| Generic Core Courses | | | | | | | |

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|---------------------------------------|-------------|--|----------------|-----------|----------------|----------------|-------------|
| T8000 | 030121401 | Service Learning | | 4 | 100 | 0 | 100 |
| T3258 | 030121402 | Current Trends and Practices in IT | | 3 | 75 | 0 | 75 |
| T3803 | 030121403 | Project | | 3 | 75 | 0 | 75 |
| T3371 | 030121404 | Introduction to Java Enterprise Framework | | 2 | 20 | 30 | 50 |
| F0002 | 030121405 | Flexi-Credit Course | | 2 | 50 | 0 | 50 |
| Total | | | | 14 | 320 | 30 | 350 |
| Generic Elective Courses Group | | | | | | | |
| T7527 | 030121406 | Internet of Things | | 4 | 40 | 60 | 100 |
| T3487 | 030121407 | Network Security Essentials | | 4 | 40 | 60 | 100 |
| T3204 | 030121408 | Server Side Web Technology | | 4 | 40 | 60 | 100 |
| TE7023 | 030121409 | Machine learning | | 4 | 40 | 60 | 100 |
| T3589 | 030121410 | IoT Application Development | | 4 | 40 | 60 | 100 |
| T3599 | 030121411 | Cloud Application Development | | 4 | 40 | 60 | 100 |
| T3601 | 030121412 | Network Administration | | 4 | 40 | 60 | 100 |
| T3607 | 030121413 | Software Project Practices | | 4 | 40 | 60 | 100 |
| Total Required Credits | | | | 12 | 120 | 180 | 300 |
| Generic Elective Courses Group | | | | | | | |
| T6096 | 030121414 | Creative Writing | | 2 | 50 | 0 | 50 |
| T6181 | 030121415 | Understanding Cinema | | 2 | 50 | 0 | 50 |
| T6182 | 030121416 | Appreciating Cinema | | 2 | 50 | 0 | 50 |
| T6246 | 030121417 | Music in Media I | | 2 | 50 | 0 | 50 |
| T6255 | 030121418 | Introduction to Theatre | | 2 | 50 | 0 | 50 |
| T6274 | 030121419 | Foundations of Ethics | | 2 | 50 | 0 | 50 |
| T6334 | 030121420 | Basic Sociology | | 2 | 50 | 0 | 50 |
| T6307 | 030121421 | Basic Psychology | | 2 | 50 | 0 | 50 |
| Total Required Credits | | | | 2 | 50 | 0 | 50 |
| Semester : 5 | | | | | | | |
| Generic Core Courses | | | | | | | |
| T1234 | 030121501 | Information Technology and Regulatory Compliance | | 2 | 20 | 30 | 50 |
| F0002 | 030121502 | Flexi-Credit Course | | 2 | 50 | 0 | 50 |
| Total | | | | 4 | 70 | 30 | 100 |
| Generic Elective Courses Group | | | | | | | |
| T3222 | 030121503 | Introduction to Vulnerability Assessment Penetration Testing | | 4 | 40 | 60 | 100 |
| T3521 | 030121504 | Advanced Internet of Things | | 4 | 40 | 60 | 100 |
| T3588 | 030121505 | Game Design | | 4 | 40 | 60 | 100 |
| T3590 | 030121506 | Design of Content Management System | | 4 | 40 | 60 | 100 |
| T3612 | 030121507 | Data Visualization | | 4 | 40 | 60 | 100 |
| T3600 | 030121508 | Cloud Architectures and Security | | 4 | 40 | 60 | 100 |
| T3602 | 030121509 | Network Monitoring and Troubleshooting | | 4 | 40 | 60 | 100 |
| T3608 | 030121510 | Software Testing | | 4 | 40 | 60 | 100 |
| Total Required Credits | | | | 12 | 120 | 180 | 300 |
| Semester : 6 | | | | | | | |

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| Catalog Course Code | Course Code | Course Title | Specialization | Credit | Internal Marks | External Marks | Total Marks |
|---------------------------------|-------------|---------------------------------|----------------|-----------|----------------|----------------|-------------|
| Choose any One Group | | | | | | | |
| Generic Elective Courses | | | | | | | |
| T3912 | 030121601 | Industry Internship | | 12 | 120 | 180 | 300 |
| F0004 | 030121602 | Flexi-Credit Course | | 4 | 100 | 0 | 100 |
| Generic Elective Courses | | | | | | | |
| F0004 | 030121602 | Flexi-Credit Course | | 4 | 100 | 0 | 100 |
| T3808 | 030121603 | Project | | 8 | 80 | 120 | 200 |
| T3009 | 030121604 | Best Programming Practices | | 2 | 20 | 30 | 50 |
| T3387 | 030121605 | Introduction to Design Patterns | | 2 | 20 | 30 | 50 |
| Total Required Credits | | | | 16 | 220 | 180 | 400 |

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| Semester | Internal Credits | External Credits | Total Credits | Total Marks |
|--------------|------------------|------------------|---------------|-------------|
| Semester1 | 6 | 12 | 18 | 450 |
| Semester2 | 8 | 14 | 22 | 550 |
| Semester3 | 0 | 20 | 20 | 500 |
| Semester4 | 14 | 14 | 28 | 700 |
| Semester5 | 2 | 14 | 16 | 400 |
| Semester6 | 4 | 12 | 16 | 400 |
| Total | 34 | 86 | 120 | 3000 |