

# **DAYANANDA SAGAR UNIVERSITY**

Shavige Malleshwara Hills, Kumaraswamy Layout,  
Bengaluru - 560078, Karnataka.

## **SCHOOL OF ENGINEERING**



## **SCHEME & SYLLABUS FOR BACHELOR COMPUTER APPLICATIONS ( BCA) 2016**

**(With Effect from 2016-17)**

**SEMESTER – I**

| SL                       | COURSE CODE | COURSE TITLE                                  | CR / AU | NO. OF HOURS OF TEACHING |           |           |           | SCHEME OF EVALUATION |            |
|--------------------------|-------------|---|---------|--------------------------|-----------|-----------|-----------|----------------------|------------|
|                          |             |   |         | L                        | T         | P         | C         | CIA                  | END EXAM   |
| 1                        | 16CA101     | MATHEMATICS – 1                               | CR      | 03                       | 02        | --        | 04        | 40                   | 60         |
| 2                        | 16CA102     | FUNDAMENTALS OF PROGRAMMING                   | CR      | 04                       | --        | --        | 04        | 40                   | 60         |
| 3                        | 16CA103     | COMPUTER ORGANIZATION – I                     | CR      | 03                       | --        | --        | 03        | 40                   | 60         |
| 4                        | 16CA104     | WEB PROGRAMMING                               | CR      | 03                       | --        | 02        | 04        | 40                   | 60         |
| 5                        | 16CA105     | ACCOUNTING AND FINANCIAL MANAGEMENT           | CR      | 03                       | --        | 02        | 04        | 40                   | 60         |
| 6                        | 16EN101     | ENGLISH IN PRACTICE                           | CR      | 02                       | --        | 02        | 03        | 40                   | 60         |
| 7                        | 16CA171     | PROGRAMMING LAB                               | CR      | --                       | --        | 04        | 02        | 40                   | 60         |
| 8                        | 16CA172     | COMPUTER ORGANIZATION LAB                     | CR      | --                       | --        | 02        | 01        | 20                   | 30         |
| <b>GRAND TOTAL = 750</b> |             |   |         | <b>18</b>                | <b>02</b> | <b>12</b> | <b>25</b> | <b>230</b>           | <b>520</b> |
| 9                        | 16CA191     | CONSTITUTION OF INDIA AND PROFESSIONAL ETHICS | AU      | 02                       | --        | --        | 02        | 25                   | 50         |

**SEMESTER – II**

| S L.                     | COURSE CODE | COURSE TITLE                  | CR / AU | NO. OF HOURS OF TEACHING |           |           |           | SCHEME OF EVALUATION |            |
|--------------------------|-------------|-------------------------------|---------|--------------------------|-----------|-----------|-----------|----------------------|------------|
|                          |             |                               |         | L                        | T         | P         | C         | CIA                  | END EXAM   |
| 1                        | 16CA106     | MATHEMATICS – 2               | CR      | 02                       | 02        | 02        | 04        | 40                   | 60         |
| 2                        | 16CA107     | PRINCIPLES OF PROGRAMMING     | CR      | 04                       | --        | --        | 04        | 40                   | 60         |
| 3                        | 16CA108     | DATA STRUCTURES               | CR      | 04                       | --        | --        | 04        | 40                   | 60         |
| 4                        | 16CA109     | COMPUTER ORGANIZATION – II    | CR      | 04                       | --        | --        | 04        | 40                   | 60         |
| 5                        | 16EN102     | TECHNICAL COMMUNICATIONS      | CR      | 02                       | --        | 02        | 03        | 40                   | 60         |
| 6                        | 16CA173     | PROGRAMMING LAB               | CR      | --                       | --        | 04        | 02        | 40                   | 60         |
| 7                        | 16CA174     | DATA STRUCTURES LAB           | CR      | --                       | --        | 04        | 02        | 40                   | 60         |
| 8                        | 16CA175     | COMPUTER ORGANIZATION LAB     | CR      | --                       | --        | 04        | 02        | 40                   | 60         |
| <b>GRAND TOTAL = 800</b> |             |                               |         | <b>16</b>                | <b>02</b> | <b>16</b> | <b>25</b> | <b>240</b>           | <b>560</b> |
| 9                        | 16CA192     | ENVIRONMENT AND PUBLIC HEALTH | AU      | 02                       | --        | --        | 02        | 25                   | 50         |

**NOTE:** CR – Credit, AU – Audit, L – Lecture, T – Tutorial, L/P – Lab / Practical, C – No. of Credits, CIA – Continuous Internal Assessment

**SEMESTER – III**

| S<br>L.                  | COURSE<br>CODE     | COURSE TITLE                         | CR<br>/<br>AU | NO. OF HOURS OF<br>TEACHING |           |           |           | SCHEME OF<br>EVALUATION |             |
|--------------------------|--------------------|--------------------------------------|---------------|-----------------------------|-----------|-----------|-----------|-------------------------|-------------|
|                          |                    |                                      |               | L                           | T         | P         | C         | CIA                     | END<br>EXAM |
| 1                        | 16CA201            | COMPUTER NETWORKS                    | CR            | 03                          | --        | 02        | 04        | 40                      | 60          |
| 2                        | 16CA202            | HUMAN COMPUTER INTERFACE             | CR            | 03                          | --        | 02        | 04        | 40                      | 60          |
| 3                        | 16CA203            | SOFTWARE ENGINEERING                 | CR            | 03                          | --        | 02        | 04        | 40                      | 60          |
| 4                        | 16CA204            | NUMERICAL METHODS                    | CR            | 03                          | --        | 02        | 04        | 40                      | 60          |
| 5                        | 16CA205            | ANALYSIS AND DESIGN OF<br>ALGORITHMS | CR            | 03                          | --        | --        | 03        | 40                      | 60          |
| 6                        | 16CA206            | OPERATING SYSTEMS                    | CR            | 03                          | --        | -         | 03        | 40                      | 60          |
| 7                        | 16CA271            | ANALYSIS AND DESIGN OF<br>ALGORITHMS | CR            | -                           | -         | 02        | 01        | 20                      | 30          |
| 8                        | 16CA272            | OPERATING SYSTEMS                    | CR            | -                           | -         | 04        | 02        | 40                      | 60          |
| <b>GRAND TOTAL = 750</b> |                    |                                      |               | <b>18</b>                   | <b>--</b> | <b>14</b> | <b>25</b> | <b>300</b>              | <b>450</b>  |
| 9                        | 16CA193<br>16CA194 | KANNADA                              | AU            | 02                          | --        | --        | 02        | 25                      | 50          |

**SEMESTER – IV**

| SL                      | COURSE<br>CODE | COURSE TITLE                                     | CR<br>/<br>AU | NO. OF HOURS OF<br>TEACHING |           |           |           | SCHEME OF<br>EVALUATION |             |
|-------------------------|----------------|--|---------------|-----------------------------|-----------|-----------|-----------|-------------------------|-------------|
|                         |                |  |               | L                           | T         | P         | C         | CIA                     | END<br>EXAM |
| 1                       | 16CA207        | OBJECT ORIENTED ANALYSIS AND<br>DESIGN USING UML | CR            | 03                          | --        | 02        | 04        | 40                      | 60          |
| 2                       | 16CA208        | ADVANCED WEB PROGRAMMING                         | CR            | 04                          | --        | --        | 04        | 40                      | 60          |
| 3                       | 16CA209        | DATABASE SYSTEMS                                 | CR            | 03                          | 02        | --        | 04        | 40                      | 60          |
| 4                       | 16CA210        | SOFTWARE TESTING                                 | CR            | 03                          | --        | 02        | 04        | 40                      | 60          |
| 5                       | 16CA2XX        | ELECTIVE – I                                     | CR            | 02                          | 02        | 02        | 04        | 40                      | 60          |
| 6                       | 16CA273        | ADVANCED WEB PROGRAMMING LAB                     | CR            | -                           | -         | 04        | 02        | 40                      | 60          |
| 7                       | 16CA274        | DATABASE SYSTEMS LAB                             | CR            | -                           | -         | 04        | 02        | 40                      | 60          |
| 8                       | 16CA281        | SEMINAR  | CR            | -                           | -         | 02        | 01        | 20                      | 30          |
| <b>GRAND TOTAL: 750</b> |                |  |               | <b>15</b>                   | <b>04</b> | <b>14</b> | <b>25</b> | <b>300</b>              | <b>450</b>  |

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**LIST OF ELECTIVES – I**

| COURSE CODE | COURSE TITLE                   |
|-------------|--------------------------------|
| 16CA221     | SYSTEM ADMINISTRATION          |
| 16CA222     | USER INTERFACE DESIGN          |
| 16CA223     | ADVANCE OS                     |
| 16CA224     | INTEERNET & WEB ARCHITECTURE   |
| 16CA225     | COMPUTER GRAPHICS & MULTIMEDIA |

**SEMESTER – V**

| SL                      | COURSE CODE | COURSE TITLE                         | CR / AU | NO. OF HOURS OF TEACHING |           |           |           | SCHEME OF EVALUATION |            |
|-------------------------|-------------|--------------------------------------|---------|--------------------------|-----------|-----------|-----------|----------------------|------------|
|                         |             |                                      |         | L                        | T         | P         | C         | CIA                  | END EXAM   |
| 1                       | 16CA301     | INFORMATION AND NETWORK SECURITY     | CR      | 02                       | 02        | --        | 03        | 40                   | 60         |
| 2                       | 16CA3XX     | ELECTIVE – II                        | CR      | 02                       | 02        | 02        | 04        | 40                   | 60         |
| 3                       | 16CA3XX     | ELECTIVE – III                       | CR      | 02                       | 02        | 02        | 04        | 40                   | 60         |
| 4                       | 16CA371     | INFORMATION AND NETWORK SECURITY LAB | CR      | -                        | -         | 02        | 01        | 20                   | 30         |
| 5                       | 16CA381     | MINI PROJECT                         | CR      | -                        | -         | 10        | 05        | 40                   | 60         |
| <b>GRAND TOTAL: 450</b> |             |                                      |         | <b>06</b>                | <b>06</b> | <b>16</b> | <b>17</b> | <b>180</b>           | <b>270</b> |

**LIST OF COURSES FOR ELECTIVE II & III**

| COURSE CODE | COURSE TITLE                    |
|-------------|---------------------------------|
| 16CA321     | BIG DATA ANALYTICS USING HADOOP |
| 16CA322     | DATABASE ADMINISTRATION         |
| 16CA323     | MOBILE PROGRAMMING              |
| 16CA324     | MOBILE SECURITY                 |
| 16CA325     | LINUX OPEN SOURCE SYSTEM        |
| 16CA326     | WIRELESS AND MOBILE SECURITY    |
| 16CA327     | CLIENT SIDE SCRIPTING**         |
| 16CA328     | SERVER SIDE SCRIPTING**         |

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**CIA :** 1. 2 IA Tests(20), 2. Assignment or mini project ( 10 marks ), 3. Any two of Self-study presentation, survey reports, quiz, Laboratory exercises, presentation in seminar & work shops ( 10 marks )

**\*\*Courses for which syllabi are not prepared**

**SEMESTER - VI**

| SL                      | COURSE CODE | COURSE TITLE | CR / AU | NO. OF HOURS OF TEACHING |           |           |           | SCHEME OF EVALUATION |            |
|-------------------------|-------------|--------------|---------|--------------------------|-----------|-----------|-----------|----------------------|------------|
|                         |             |              |         | L                        | T         | P         | C         | CIA                  | END EXAM   |
| 1                       | 16CA3XX     | ELECTIVE -IV | CR      | 02                       | 02        | 02        | 04        | 40                   | 60         |
| 2                       | 16CA3XX     | ELECTIVE -V  | CR      | 02                       | 02        | 02        | 04        | 40                   | 60         |
| 3                       | 16CA382     | PROJECT      | CR      | -                        | -         | 20        | 10        | 100                  | 150        |
| <b>GRAND TOTAL: 450</b> |             |              |         | <b>04</b>                | <b>04</b> | <b>24</b> | <b>18</b> | <b>180</b>           | <b>270</b> |

**LIST OF COURSES FOR ELECTIVE IV & V**

| COURSE CODE | COURSE TITLE             |
|-------------|--------------------------|
| 16CA331     | ADVANCE DATABASE (NOSQL) |
| 16CA332     | WEB ADMINISTRATION**     |
| 16CA333     | GAME PROGRAMMING         |
| 16CA334     | NETWORK ADMINISTRATION   |
| 16CA335     | ETHICAL HACKING          |
| 16CA336     | WEB SECURITY**           |
| 16CA337     | DATA SCIENCE             |
| 16CA338     | CLOUD COMPUTING          |

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**\*\*Courses for which syllabi are not prepared**