

# BACHELOR OF COMPUTER APPLICATIONS

## CURRICULUM

for 2015 admissions onwards

CURRICULUM

BCA

2015 admissions onwards

### GENERAL INFORMATION

#### Code Numbering:

Each course is assigned an 8-character Code number. The first two digits indicate the year of curriculum revision. The next three letters indicate the Department offering the course. The last three digits are unique to the course – the first digit indicates the level of the course (100, 200, 300, 400 etc.); the second digit indicates the type of the course, viz. 0, 1 and 2 indicate the core courses; 3,4,5,6 and 7 indicate the Elective courses; 8 indicates the Lab. or practical-based courses and 9 indicates Projects.

#### ABBREVIATIONS USED IN THE CURRICULUM:

Cat.	-	Category
Cr	-	Credits
ES	-	Exam Slot
L	-	Lecture
P	-	Practicals
T	-	Tutorial

#### DISCIPLINES

AVP	-	Amrita Values Programmes
BUS	-	Business Management
CHY	-	Chemistry
CMJ	-	Communication and Journalism
COM	-	Commerce
CSA	-	Computer Science and Applications
CSN	-	Computer Systems and Network
CUL	-	Cultural Education
ECO	-	Economics
ELL	-	English Language and Literature
ENG	-	English
ENV	-	Environmental Sciences
FNA	-	Fine Arts
HIN	-	Hindi
KAN	-	Kannada
LAW	-	Law
MAL	-	Malayalam
MAT	-	Mathematics
MCJ	-	Mass Communication and Journalism
OEL	-	Open Elective
PHY	-	Physics
SAN	-	Sanskrit
SSK	-	Soft Skills
SWK	-	Social Work
TAM	-	Tamil

**SEMESTER I**

Course Code	Course Title	L-T-P	Cr	ES
15ENG101	Communicative English	2 0 2	3	A
	Language Paper I	1 0 2	2	B
15CSA101	Basics of Programming	2 0 0	2	C
15CSA102	Fundamentals of DBMS	1 0 0	1	D
15CSA103	Fundamentals of Web Technology	2 0 0	2	E
15MAT103	Mathematical Foundations	2 1 0	3	G
15CSA181	Basics of Programming Lab.	0 0 3	1	L1
15CSA182	Fundamentals of DBMS Lab.	0 0 3	1	L2
15CSA183	Fundamentals of Web Technology Lab.	0 0 3	1	L3
15CSA184	Information Technology Basics Lab.	0 1 3	2	L4
15CUL101	Cultural Education I	2 0 0	2	F
<b>TOTAL</b>			<b>20</b>	

**SEMESTER II**

Course Code	Course Title	L-T-P	Cr	ES
15ENG121	Professional Communication	1 0 2	2	A
	Language Paper II	1 0 2	2	B
15CSA111	Advanced C	3 0 0	3	C
15CSA112	Advanced DBMS	2 0 0	2	D
15CSA113	Analysis of Algorithms	2 0 0	2	E
15CSA114	Computer Organization and System Architecture	3 0 0	3	H
15CSA115	Object-Oriented Programming using C++	2 0 0	2	J
15MAT115	Statistical and Numerical Methods	3 1 0	4	G
15CSA188	Advanced C Lab.	0 0 3	1	L1
15CSA189	Advanced DBMS Lab.	0 0 3	1	L2
15CSA191	Object-Oriented Programming using C++ Lab.	0 0 3	1	L3
15CUL111	Cultural Education II	2 0 0	2	F
<b>TOTAL</b>			<b>25</b>	

**SEMESTER III**

Course Code	Course Title	L-T-P	Cr	ES
15CSA201	Computer Networks	3 0 0	3	A
15CSA202	Data Structures	3 0 0	3	B
15CSA203	Java Programming	3 0 0	3	C
15CSA204	Operating System	3 0 0	3	H
15BUS102	Introduction to Management	1 0 0	1	E
15ENV300	Environmental Science and Sustainability	3 0 0	3	D
15MAT223	Discrete Mathematics	2 1 0	3	J
15CSA281	Data Structures Lab.	0 0 3	1	L1
15CSA282	Java Programming Lab.	0 0 3	1	L2
15SSK201	Life Skills I	1 0 2	2	G
15AVP201	Amrita Values Programme I	1 0 0	1	F
<b>TOTAL</b>			<b>24</b>	

**SEMESTER IV**

Course Code	Course Title	L-T-P	Cr	ES
15CSA211	Advanced Java Programming	3 0 0	3	A
15CSA212	Introduction to Network Security	2 0 0	2	B
15CSA213	Management Information Systems	2 0 0	2	C
15CSA214	.NET Framework	2 0 0	2	D
15CSA215	Software Engineering	3 0 0	3	E
15CSA216	Web Programming	3 0 0	3	H
15COM216	Principles of Accounting	2 0 0	2	K
	Open Elective A*	3 0 0	3	J
15CSA284	.NET Framework Lab.	0 0 3	1	L1
15CSA285	Web Programming Lab.	0 0 3	1	L2
15CSA287	Advanced Java Programming Lab.	0 0 3	1	L3
15SSK211	Life Skills II	1 0 2	2	G
15AVP211	Amrita Values Programme II	1 0 0	1	F
<b>TOTAL</b>			<b>26</b>	

**SEMESTER V**

Course Code	Course Title	L-T-P	Cr	ES
15CSA301	Fundamentals of Cryptography	3 0 0	3	A
15CSA302	C# Programming	3 0 0	3	B
15CSA303	Mobile Technologies and Application Development	2 0 3	3	C
15CSA304	Object-Oriented Analysis and Design	2 0 0	2	D
	Elective A	3 0 0	3	E
15CSA390	Live-in-Lab. <sup>@</sup> / Open Elective B*	3 0 0	3	J
15CSA381	C# Programming Lab.	0 0 3	1	L1
15CSA391	Minor Project		3	P1
15SSK301	Life Skills III	1 0 2	2	G
<b>TOTAL</b>			<b>23</b>	

**SEMESTER VI**

Course Code	Course Title	L-T-P	Cr	ES
15CSA311	Computer Graphics	3 0 0	3	A
	Elective B	3 0 0	3	D
	Elective C	3 0 0	3	E
15CSA385	Computer Graphics Lab.	0 0 3	1	L1
15CSA397	Comprehensive Technical Viva-voce		2	PI
15CSA399	Project		6	P
<b>TOTAL</b>			<b>18</b>	

**Total credits for the programme = 136**

**LANGUAGE - Paper I**

Course Code	Course Title	L-T-P	Cr	ES
15HIN101	Hindi I	1 0 2	2	B
15KAN101	Kannada I	1 0 2	2	B
15MAL101	Malayalam I	1 0 2	2	B
15SAN101	Sanskrit I	1 0 2	2	B
15TAM101	Tamil I	1 0 2	2	B

**LANGUAGE - Paper II**

Course Code	Course Title	L-T-P	Cr	ES
15HIN111	Hindi II	1 0 2	2	B
15KAN111	Kannada II	1 0 2	2	B
15MAL111	Malayalam II	1 0 2	2	B
15SAN111	Sanskrit II	1 0 2	2	B
15TAM111	Tamil II	1 0 2	2	B

**ELECTIVES A, B and C (any three)**

Course Code	Course Title	L-T-P	Cr	ES
15CSA331	Artificial Intelligence	3 0 0	3	D/E
15CSA332	Architecture and Deployment of Secure and Scalable WAN	3 0 0	3	D/E
15CSA333	Introduction to Bioinformatics	3 0 0	3	D/E
15CSA334	Data Mining	3 0 0	3	D/E
15CSA335	Introduction to Distributed Computing	3 0 0	3	D/E
15CSA336	Embedded Systems	3 0 0	3	D/E
15CSA337	Enterprise Resource Planning Management	3 0 0	3	D/E
15CSA338	Knowledge Management	3 0 0	3	D/E
15CSA339	LAN Switching and Advanced Routing	3 0 0	3	D/E
15CSA340	Microprocessor System	3 0 0	3	D/E
15CSA341	Multimedia and Graphics	3 0 0	3	D/E
15CSA342	Project Management and Technical Documentation	3 0 0	3	D/E
15CSA343	Social and Professional Issues in Computing	3 0 0	3	D/E
15CSA344	Soft Computing	3 0 0	3	D/E
15CSA345	Software Quality Assurance and Testing	3 0 0	3	D/E
15CSA346	Systems and Network Administration	3 0 0	3	D/E

\* Two Open Elective courses are to be taken by each student, one each in the 4th and the 5th semesters, from the list of Open Electives offered by the School.

@ Students undertaking and registering for a Live-in-Lab project, can be exempted from registering for an Open Elective course in the fifth semester.

**OPEN ELECTIVES (3 0 0 3)**

15OEL231	Advertising
15OEL232	Basic Statistics
15OEL233	Citizen Journalism
15OEL234	Creative Writing for Beginners
15OEL235	Desktop Support and Services
15OEL236	Development Journalism
15OEL237	Digital Photography
15OEL238	Emotional Intelligence
15OEL239	Essence of Spiritual Literature
15OEL240	Film Theory
15OEL241	Fundamentals of Network Administration
15OEL242	Gender Studies
15OEL243	Glimpses of Indian Economy and Polity
15OEL244	Graphics and Web-designing Tools
15OEL245	Green Marketing
15OEL246	Healthcare and Technology
15OEL247	History of English Literature
15OEL248	Indian Writing in English
15OEL249	Industrial Relations and Labour Welfare
15OEL250	Introduction to Ancient Indian Yogic and Vedic Wisdom
15OEL251	Introduction to Computer Hardware
15OEL252	Introduction to Event Management
15OEL253	Introduction to Media
15OEL254	Introduction to Right to Information Act
15OEL255	Introduction to Translation
15OEL256	Linguistic Abilities
15OEL257	Literary Criticism and Theory
15OEL258	Macro Economics
15OEL259	Managing Failure
15OEL260	Media Management
15OEL261	Micro Economics
15OEL262	Micro Finance, Small Group Management and Cooperatives
15OEL263	Negotiation and Counselling
15OEL264	New Literatures
15OEL265	Non-Profit Organisation
15OEL266	Personal Effectiveness

15OEL267	Perspectives in Astrophysics and Cosmology
15OEL268	Principles of Marketing
15OEL269	Principles of Public Relations
15OEL270	Science, Society and Culture
15OEL271	Statistical Analysis
15OEL272	Teamwork and Collaboration
15OEL273	The Message of Bhagwad Gita
15OEL274	Understanding Travel and Tourism
15OEL275	Videography
15OEL276	Vistas of English Literature
15OEL277	Web-Designing Techniques