

KARNATAK UNIVERSITY

DHARWAD

REGULATIONS, SCHEME AND SYLLABUS
for the course
BACHELOR OF COMPUTER APPLICATION (BCA)
(Semester System)



With effect from
2005 - 2006 and onwards

Regulations, Scheme of Study and Examination for B.A. degree course
under Semester System.
(Revised w.e.f. 2005 - 2006)


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REGULATIONS, SCHEME AND SYLLABUS

for the course

BACHELOR OF COMPUTER APPLICATIONS (BCA)

(Semester System)

Revised w.e.f
Academic Year 2005 - 2006 : nd onwards

**Regulations, Scheme of Study and Examination for BCA degree course
under Semester System.
(Revised w.e.f. 2005 – 2006)**

- R 1.** a) Title of the course: Bachelor of Computer Applications
b) Duration of the Course: The course shall be of three years duration spread over six semesters.
c) Scheme of study:
i) There shall be five – theory papers and two – practicals each carrying 100 marks (80+20), from first semester to fifth semester.
ii) There shall be five theory papers and one project work during sixth semester.
iii) The project work shall be carried out either independently or jointly (maximum of two students)
iv) Medium of Instruction: The medium of instruction shall be English.
d) Scheme of Examination:
i) At the end of each semester there shall be University examination of three hours duration in each of the theory paper/practical carrying 80 marks.
ii) Internal Assessment (IA) carrying 20 marks in each of theory paper/practical shall be based on the performance of the students in two written tests of one hour duration. No Minimum marks for passing is required in IA.
iii) At the end of the sixth semester each student shall have to submit the completed project report for the evaluation which shall be certified by internal and/external guide and duly signed by the Principal/Chairman/Head/Course Co-ordinator.

The project report shall be evaluated by two examiners for 200 marks and Viva – voce shall carry 100 marks.

R 2. Each semester shall be of 4 months duration

R 3. Attendance: Every student must have at least 75% attendance in each of the course (Theory and Practical) in each semester. Shortage of attendance will be dealt with as per University rule from time to time.

R 4. A Candidate is allowed to carry over all the previous uncleared (failed) theory papers and/Practicals to subsequent semesters from the first to sixth semester

R 5. The maximum period for completion of the course shall be six years from the date of admission.

R 6. Eligibility for admission:

- a) Any student who has passed PUC – II Science or Commerce securing a minimum of 35% of marks

OR

- b) Any student who has passed JODC or Diploma in Engg. (of three year duration of Govt. of Karnataka) with minimum of 35% of marks in aggregate in all the semesters/years.

R 7. There shall be an Entrance test for admission. The fees for this test and prospectus shall be as prescribed by the University.

R 8. Admission Procedure:

- a) Through an Entrance test of duration two hours and 100 marks.
b) 50% weightage for Entrance test
c) 50% weightage for performance at qualifying examination.
d) Merit list shall be prepared based on item No. 8 (b) and 8 (c)
e) Reservation: As per the notifications/Govt. orders from the University/Govt. from time to time.

f) Tuition and other fees: As fixed by the University from time to time

R 9. The total number of students to be admitted to the course shall be as decided by the University.

R 10. Results:

- a) Minimum for pass in each of Theory paper/Practical (Computer Lab)/Project Report shall be 40% at the University semester examination.
- b) The aggregate minimum for pass in each of the Theory/Practical (Computer Lab)/Project Work shall be 40% of marks in each course including IA/Viva – voce. No minimum marks is required in IA/Viva – voce.

R 11. Classification of Results:

Results of candidate are declared and the classes are awarded as per the following classification based on the marks obtained in all the semesters (I to VI) in all the subjects/courses.

Marks obtained	Results
i) 70 and above	First class with Dist
ii) 60% and above but less than 70%	First Class
iii) 50% and above but less than 60%	Second Class
iv) 40% and above but less than 50%	Pass Class
v) less than 40%	Fails

Title of Papers and Scheme of Study & Examination for BCA (Bachelor of Computer Applications) Revised w.e.f. 2005 – 2006

Sem No.	Paper No.	Title of the paper	Hrs/ Wk	Marks		IA	Total Marks	
				Max	Min		Max	Min
I	BCA101(A)	Mathematics – I	4	80	32	20	100	40
	BCA101 (B)	Accounting & Financial Management – I	4	80	32	20	100	40
	BCA102 (A)	Functional Kannada	4	80	32	20	100	40
	BCA102 (B)	Kannada Kali	4	80	32	20	100	40
	BCA103	Basic Electricals & Electronics	4	80	32	20	100	40
	BCA104	Computer Concepts & C - Programming	4	80	32	20	100	40
	BCA105	Indian Constitution	4	80	32	20	100	40
	BCA106	Computer Lab 1.1 (Based on BCA 104)	6	80	32	20	100	40
	BCA107	Computer Lab 1.2 (Based on BCA 103)	6	80	32	20	100	40
II	BCA201 (A)	Mathematics – II	4	80	32	20	100	40
	BCA201 (B)	Accounting & Financial Management – II	4	80	32	20	100	40
	BCA202	English	4	80	32	20	100	40
	BCA203	Numerical and Statistical Methods	4	80	32	20	100	40
	BCA204	Data Structures Using C	4	80	32	20	100	40
	BCA205	Human Rights & Environmental Studies	4	80	32	20	100	40
	BCA206	Computer Lab 2.1 (Based on BCA 204)	6	80	32	20	100	40
	BCA207	Computer Lab 2.2 (Based on BCA 201(B) & BCA 203)	6	80	32	20	100	40
III	BCA301	Computer Organization & Architecture	4	80	32	20	100	40
	BCA302	OOPS Using C++	4	80	32	20	100	40
	BCA303	Discrete Mathematical Structures	4	80	32	20	100	40
	BCA304	Visual Programming	4	80	32	20	100	40
	BCA305	Personality Development & Communication Skills	4	80	32	20	100	40
	BCA306	Computer Lab 3.1 (Based on BCA 302)	6	80	32	20	100	40
	BCA307	Computer Lab 3.2 (Based on BCA 304)	6	80	32	20	100	40

Note: Duration of Examination of each Theory/Practicals shall be of 3 (Three) hours duration.

Sem No.	Paper No.	Title of the paper	Hrs /Wk	Marks		IA	Total Marks		
				Max	Min		Ma x	Min	
IV	BCA401	Design & Analysis of Algorithms	4	80	32	20	100	40	
	BCA402	System Analysis & Design	4	80	32	20	100	40	
	BCA403	System Programming	4	80	32	20	100	40	
	BCA404	Data communications	4	80	32	20	100	40	
	BCA405	Microprocessors	4	80	32	20	100	40	
	BCA406	Computer Lab 4.1 (Based on BCA 401 & BCA 404)	6	80	32	20	100	40	
	BCA407	Computer Lab 4.2 (Based on BCA 405)	6	80	32	20	100	40	
V	BCA501	Operating Systems	4	80	32	20	100	40	
	BCA502	Internet Programming	4	80	32	20	100	40	
	BCA503	Data Base Management Systems	4	80	32	20	100	40	
	BCA504	Software Engineering	4	80	32	20	100	40	
	BCA505	Operations Research	4	80	32	20	100	40	
	BCA506	Computer Lab 5.1 (Based on BCA 502)	6	80	32	20	100	40	
	BCA507	Computer Lab 5.2 (Based on BCA 503)	6	80	32	20	100	40	
VI	BCA601	Computer Graphics	4	80	32	20	100	40	
	BCA602	E-Commerce & Web Designing	4	80	32	20	100	40	
	BCA603	Introduction to UNIX	4	80	32	20	100	40	
	BCA604	Object Oriented System Design	4	80	32	20	100	40	
	BCA 605	Computer Networks	4	80	32	20	100	40	
		Project Work							
	BCA606 (A)	Project Report : Viva - voce	12	200	80	----	200	120	
BCA606 (B)		----	100	----	----	100			
GRAND TOTAL MARKS							4300		

- Note:** 1) Duration of Examination of each Theory/Practicals shall be of 3 (Three) hours duration.
2) The contents of "Computer Applications" compulsory paper of Group III is spread over the various computer papers in earlier semesters of BCA and hence it is not included in BCA IV Semester.

BCA 605: COMPUTER NETWORKS

Total: 50 Hrs

- 1. Introduction:** computer networks and its applications, Network structure, network architecture, Topologies, LAN VAN MAN, The OSI reference model, The TCP /IP reference model, Services, network standards, example networks. (4 Hrs)
- 2. The Physical layer:** Transmission and Switching , Frequency and time division multiplexing. Circuit switching, packet switching , hybrid switching. ISDN – integrated services digital networks, ISDN service, Evolution of ISDN, ISDN system architecture, the digital PBX, ISDN interface, ISDN signaling, Perspective on ISDN, Terminal handling, Polling Multiplexing versus concentration . (10 Hrs)
- 3. The medium access sub layer:** The local metropolitan area networks, the ALOHA protocols, LAN protocols: Carrier Sense multiple access protocols, collision free protocols Limited Contention protocols. (10 Hrs)
- 4. The data link Layer:** Data link Layer design issues, Error detection and correction, Elementary data link protocols, sliding window protocols, protocol performance, Protocol specification and verifications. (10 Hrs)
- 5. The Network Layer:** Network layer design issue, Routine algorithms: Optimality principle shortest path routing Flooding Flow based routing , Hierarchical routing, Broadcast Routing , Multicast Routing, Congestion control algorithms, Internetworking Network layer in the internet and ATM Networks. (8 Hrs)
- 6. The Transport Layer:** Transport service, Transport protocols, Internet transport protocol (TCP & UDP). (8 Hrs)

Text Books:

1. Andrew S Tenebaum, Computer Networks, Fourth Edition, Pearson Pub. 2002.

References:

1. Ulyses Black , Computer Networks : Protocols, standard and interfaces, PHI.
2. James Martin, Local area networks : Architecture and implementation, PHI.
3. Behrouz Foruzan, Data Communication and Networking. TMH.
4. W. Stallings , Data and Computer Communications, Pearson Education.
5. Prakash Gupta , Data Communications, PHI.
6. James.F. Kurose & Keith W Ross, Computer Networking A TOP DOWN Approach Featuring the Internet, 2nd Edition, Pearson Education.

BCA 606: PROJECT WORK

BCA 606 (A) Project Report

BCA 606 (B) Viva-voce

Question Paper Pattern for all the Semesters: (except BCA 105, BCA 205 & BCA 305)

- 1) **Theory:** There shall be eight questions in the question paper each carrying 16 marks. The students have to answer any five questions.
- 2) **Practical:** The Practical marks of 80 shall be distributed as follows
 - i) Writing two programs including algorithms/flow chart ---- 30 Marks (15 each)
 - ii) Execution of two programs ----- 40 Marks (20 each)
 - iii) Laboratory record/journal and Viva – voce ----- 10 Marks.

Total: 80 Marks
