

**Detailed Program Scheme**  
**Bachelor of Computer Applications (BCA)**

**Semester I-VIII**  
**(2025-2029)**

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### Document Release Notice

#### Detailed Program Scheme for all Semesters

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<b>Name of Program</b>	Bachelor of Computer Applications
<b>Abbreviated Program Name</b>	BCA
<b>Updated on</b>	May '2025
<b>Approved By</b>	BOS

## **OVERVIEW**

RNB Global University follows Semester System along with Choice Based Credit System as per latest guidelines of University Grants Commission (UGC). Accordingly, each academic year is divided into two semesters, **Odd(July-December)** and **Even (January-June)**. Also, the university follows a system of continuous evaluation along with regular updating in course curricula and teaching pedagogy.

<b>Name of Program</b>	Bachelor of Computer Applications (BCA)
<b>Program Code</b>	13007
<b>Duration of Program</b>	3 / 4 years
<b>Number of Semester</b>	6/8
<b>Total Credit of Program</b>	146/192

## **DETAILED CREDIT STRUCTURE**

<b>Year 1</b>	Semester1	23 credits
	Semester2	23 credits
<b>Year 2</b>	Semester 3	23 credits
	Semester 4	27 credits
<b>Year 3</b>	Semester 5	25 credits
	Semester 6	25 credits
<b>Total Credits</b>		146 credits
<b>Year 4</b>	Semester 7	23 credits
	Semester 8	23 credits
<b>Total Credits</b>		192 credits

### **Abbreviations:**

**DSC:** Discipline Specific Course

**DSE:** Discipline Specific Electives

**GE:** General Electives

**AEC:** Ability Enhancement Course

**SEC:** Skill Enhancement Course

**IAPC:** Internship/Apprenticeship / Project/ Community Outreach

**VAC:** Value Addition Course

### **Definitions**

**1. Courses of study**– Courses of study indicate pursuance of study in a particular discipline. Every discipline shall offer three categories of courses of study, viz. Discipline Specific Core courses (DSCs), Discipline Specific Electives (DSEs) and Generic Electives (GEs).

**a) Discipline Specific Core (DSC):** Discipline Specific Core is a course of study, which should be pursued by a student as a mandatory requirement of his/her programme of study. DSCs shall be the core credit courses of that particular discipline which will be appropriately graded and arranged across the semesters of study, being undertaken by the student, with multiple exit options as per NEP 2020. The DSCs specified in the framework would be identified by the concerned Department as core courses to be taught in a Programme.

For example, for award of single discipline specific Honours degree, such as B.A. (Honours) History, B.Com. (Honours), B.Sc. (Honours) Physics and similar such programmes, DSCs shall be the core courses of History, Commerce and Physics, respectively.

However, to pursue Honours degree programme in a 'Field of Multidisciplinary courses of Study' (rather than a single discipline) such as B.Sc. (Honours) Life Sciences, B.A. (Honours) Social Sciences/ Humanities, the DSCs shall comprise of core credit courses of more than one discipline. For example, for B.Sc. (Honours) Life Sciences programme, a student shall study credit courses of three disciplines i.e., Botany, Zoology and Chemistry. DSC 1 may be of Discipline A1 (say, Botany), DSC 2 may be of Discipline B 1 (say, Zoology) and DSC 3 may be of Discipline C 1 (say, Chemistry). However, the fourth year of such honours degree programme shall be devoted to the study of only one discipline and hence the DSC courses in the VII and VIII semesters shall be of Discipline A/B/C and not a combination of these three disciplines. Please refer to framework given as Illustration –I.

**b) Discipline Specific Elective (DSE):** The Discipline Specific Electives (DSEs) shall be a pool of credit courses of that particular discipline (single discipline programme of study) or those disciplines (multidisciplinary programme of study), as the case may be, which a student chooses to study from his/her particular discipline(s). There shall be a pool of DSEs from which a student may choose a course of study. The DSEs specified in the framework would be identified by the concerned Department as elective courses to be taught in a Programme.

For example, to pursue B.Sc. (Honours) Physics, DSEs chosen should be from a pool of DSEs of Physics.

Similarly, to pursue B.Sc. (Honours) Life Sciences programme, the DSEs chosen should be a pool of courses of DSEs of Botany, Zoology and Chemistry, the core subjects for this programme of study.

However, to pursue Honours degree programme in a 'Field of Multidisciplinary courses of Study' (rather than a single discipline) such as B.Sc. (Honours) Life Sciences, B.A. (Honours) Social Sciences/ Humanities, in the fourth year of such honours degree programme in the VII and VIII semesters, the student shall be required to choose DSEs from any one of the Disciplines A/B/C and not a combination of these three disciplines. Please refer to framework given as Illustration - I.

**c) Generic Elective (GE):** Generic Electives shall be a pool of courses which is meant to provide multidisciplinary or interdisciplinary education to students. GEs shall consist of a pool of courses offered by various disciplines of study (excluding the GEs offered by the parent discipline), in groups of odd and even semesters, from which a student can choose. The GEs specified in the framework would be identified by the concerned Department as GEs to be taught in a Programme.

In case a student opts for DSEs beyond his/her discipline specific course(s) of study, such DSEs shall be treated as GEs for that student.

**d) Ability Enhancement course (AEC), Skill Enhancement Course (SEC) & Value Addition Course (VAC)** These three courses shall be a pool of courses offered by all the Departments in groups of odd and even semesters from which students can choose. A student who desires to make Academic Project/Entrepreneurship as Minor has to pick the appropriate combination of courses of GE, SEC, VAC, & Internship/Apprenticeship/Project/Community (IAPC) which shall be offered in the form of various modules as specified in the scheme of studies.

(i). AEC courses are the courses based upon the content that leads to knowledge enhancement through various areas of study. They are Language and Literature and Environmental Science and Sustainable Development which will be mandatory for all disciplines.

(ii). SEC courses are skill-based courses in all disciplines and are aimed at providing hands-on-training, competencies, skills, etc. SEC courses may be chosen from a pool of courses designed to provide skill-based instruction.

(iii). VAC courses are value based courses which are meant to inculcate ethics, culture, Indian Knowledge systems, constitutional values, soft skills, sports education and such similar values to students which will help in all round development of students.

### **Features of UGCF**

The below mentioned objectives have been reflected in various features of UGCF:

Holistic development of the students shall be nurtured through imparting life skills in initial years. These life skill courses shall include courses on 'Environment and Sustainable Development Studies', 'Communication Skills', 'Ethics and Culture', 'Science and Society', 'Computational Skills', 'IT & Data

Analytics', and similar such skills which shall make the students better equipped to deal with the life's challenges.

- Flexibility to the students to determine their learning trajectories and pursuance of programmes of study has been well ingrained in the UGCF. The Framework allows students to opt for one, two, or more discipline(s) of study as a core discipline(s) depending on his/her choice. He/she has been provided the option of focusing on studying allied courses of his/her selected discipline(s) (DSEs) or diversifying in other areas of study of other disciplines. Students have also been provided with the flexibility to study SECs or opt for Internships or Apprenticeship or Projects or Research or Community Outreach at an appropriate stage. In the fourth year, students are provided flexibility to opt for writing a dissertation (on major, minor, or combination of the two) or opt for Academic Projects or Entrepreneurship depending upon their choice and their future outlook, post completion of their formal education.
- Given the extent of plurality of the Indian society and the diverse background to which students belong, multiple exits and provision of re-entry have been provided at various stages of the undergraduate programme to accommodate their requirement and facilitate them to complete their studies depending upon their priorities of life. The earning and accumulation of credits in the Academic Bank of Credit (ABC), and the flexibility to redeem the requisite credit for award of appropriate Certificate / Diploma/Degree, as the per the norms laid down by the UGC and the University, shall be made available to the students to provide the opportunity for lifelong learning as well as for availing academic outreach beyond the superstructure of the programme of study in another University / Institution at the national /international level depending upon individual choice of the student(s).
- UGCF has incorporated multidisciplinary education by embedding within the framework the need to opt for at least four elective papers from any other disciplines other than the one opted as core discipline(s). In fact, if a student desires to obtain (minor) in a particular discipline other than the core discipline (for students pursuing single-core discipline programme), he/she can do so by earning at least 28 credits in that particular discipline.
- The framework does not maintain/support hierarchy among fields of study/disciplines and silos between different areas of learning. As long as a student fulfils the pre-requisites of a course of study, he/she shall be able to study it. Modules or systems of study shall be meaningfully laid down so as to guide the students in choosing the track/academic paths for the desired outcome.
- One of the significant hallmarks of the framework is a provision of pursuing multilingualism while studying any other discipline as core subject(s), which has no bearing with any language and linguistics. I and II semesters of the programme provides an opportunity to the students to study languages which are enshrined under the eighth schedule of the Constitution of India, thereby allowing the students for their holistic development, including the ability to acquire proficiency in a language beyond their mother tongue.

- The framework provides a mandatory programme on research methodologies as one of the generic elective courses at the VI & VII semester for students who opt for writing dissertation on major/ minor at VII and VIII semesters. Further, provision for internship / apprenticeship/ project/ community outreach right from the III semester up to VI semester provides ample opportunity to the students to explore areas of knowledge / activity beyond the four walls of the classroom and reach out to the world outside without any dilution of the academic feature of the course of study, he/she is pursuing. This also acts a precursor for the students to take up academic project or entrepreneurship at a later stage in VII & VIII semester. Such an initiative will help in skill development and laying a strong foundation for research and thus contribute towards overall national development through the development of skilled manpower and innovation.
- Intra and inter University mobility of students is another element of critical importance which has been ingrained in the framework. A student, by virtue of such mobility, will be able to make lateral movement within the University as well as from the University to any other Institution and vice-versa. Such an attribute allows a student maximum flexibility in terms of pursuance of education with special reference to higher education and enables him/ her to achieve goal of life, the way he/she perceived it.

#### **Note**

1. Entry level eligibility: The general feeder category for entry into Level 5 is the Secondary School Leaving Certificate obtained after successfully completing Grade 12. A programme of study leading to entry into the first year of the Bachelor's degree is open to those students who have met the entrance requirements, including specified levels of attainment at the secondary level of education mentioned in the programme admission regulations. Admission to the Bachelor degree programme of study is based on the evaluation of documentary evidence (including the academic record) of the applicant's ability to undertake and complete a Bachelor's degree programme which is specified in the UGC Guidelines for Multiple Entry and Exit Scheme in Academic Programmes Offered in Higher Education.

2. Number of hours of a credit course shall be defined by its component of lecture, tutorial and practical.

3. Every student has to study "Environmental Science and Sustainable Development" courses I and II of two credits each in the first year (I/II semester) and the second year (III/IV semester), respectively. The AEC pool will also consist of credit courses in languages listed in the Eighth Schedule of the Constitution of India, as updated from time to time. The University of Delhi shall extend necessary support to those Colleges (where faculty is not available) which may require it in course of teaching learning in these languages.

4. Design of degrees: Students shall be able to design their own degrees according to their mission and aspiration for a future befitting to their ability and attainment, rather than following the conventional pathway.

5. A student who pursues three years undergraduate degree programme in a specific discipline as a Core course [for example, B.A. (Honours) English, B. Com (Honours), B.Sc. (Honours) Physics and such other Programmes] will earn at least 80 credits in that discipline (from 18 DSCs and at least 2 DSEs of that discipline) and shall be awarded Honours degree in that discipline, if he/she exits after completion of VI semester.

6. A student who pursues three years undergraduate degree programme in more than one discipline as core courses of study (for example B.A. in Social Sciences/ Humanities, B.Sc. in Life Sciences, B.Sc. in Physical Sciences, B.Sc. in Mathematical Sciences, Bachelor in Commerce Studies and such other programmes) he/she shall be awarded Bachelor's degree in that field of multidisciplinary course of study, if he/she exits after completion of VI semester.

7. If a student wishes to pursue four years Honours Degree with research, he/she shall compulsorily opt for a Research Methodology course in either VI Semester or VII Semester as GE.

8. Dissertation/Academic Project/Entrepreneurship in the 4th year shall commence from VII semester and conclude in VIII semester. Detailed outcomes of each track chosen out of these three options shall be notified and assessment at the end of VII and VIII semesters shall be done accordingly.

9. Dissertation may be written in the Major or Minor or Interdisciplinary (combination of Major and Minor) discipline.

10. If a student mentioned at (6) above continues or re-enters the fourth year for pursuing an Honours degree in that field of multidisciplinary study, he/she has to choose only one of the disciplines he/she had studied as core courses of study in the previous six semesters and earn credits from the 2DSCs and 6DSEs of that chosen discipline in the VII and VIII semesters and write dissertation or opt for Academic Project or Entrepreneurship.

11. If a student mentioned at (5) above, continues or re-enters to study the VII and VIII semesters in the same discipline, and writes dissertation mentioned at (9) above, but no Minor discipline is made out (i.e., credits earned in the GEs of any one discipline is less than 28 credits), then he/she shall be awarded 'Honours with Research' with Major in that discipline on successful completion of VIII Semester.

12. A student mentioned at (6) above, shall be awarded 'Honours' degree in that field of multidisciplinary study on successful completion of VIII semester. For example, B.A. (Honours) Social Sciences/ Humanities, B.Sc. (Honours) Life Sciences, B.Sc.(Honours) Physical Sciences, B.Sc. (Honours) Mathematical Sciences and Bachelor in Commerce Studies (Honours). Major and Minor shall be indicated on fulfilment of the conditions mentioned above at III (2) (b) and III(3)(b), respectively. For instance, a student who pursues four years B.A. (Honours) in Social Sciences/ Humanities with History, Political Science and Hindi as core courses, shall get Major in History, on successful completion of VIII semester, if he/she earns minimum 80 credits in History from 8DSCs and at least 9 DSEs of History and writes dissertation on a topic related to History. Such a student shall get a Minor in Political Science/Hindi, if he/she earns minimum 28 credits from 6 DSCs and one DSE of Political Science/Hindi.



13. Only a student mentioned at (5) above who opts to write a dissertation in the Major/Minor subject in VII and VIII semesters in the fourth year, shall be awarded 'Bachelor of Field of Study/Discipline (Honours with Research) in Discipline'. For instance, a student who pursues B.Sc. (Honours) in Physics and writes a dissertation on a topic relating to Physics or the Minor in VII and VIII semesters shall be awarded 'Bachelor of Science (Honours with Research) Physics. Major and Minor shall be indicated on fulfilment of the conditions mentioned above at III (2) (a) and III (3) (a), respectively.

14. A student who opts for 'Academic Project' or 'Entrepreneurship' in VII and VIII semesters, instead of writing dissertations, and has earned 28 credits in the relevant GEs, SECs, AECs & IAPC, shall be awarded Minor in Academic Project or Entrepreneurship, as the case may be. 'Bachelor of Field of Study/Discipline (Honours with Academic Project/ Entrepreneurship) in Discipline (Major) & Academic Project/ Entrepreneurship (Minor)'. If he/she is unable to earn the requisite 28 credits, he/she shall be awarded 'Bachelor of Field of Study/Discipline (Honours with Academic Project/ Entrepreneurship) in Discipline (Major).

15. A student who pursues four-year undergraduate degree programme shall be awarded after completion of the VIII semester an appropriate degree.

16. Exit Options: The minimum credit to be earned by a student per semester is 22 credits and the maximum is 26 credits. However, students are advised to earn 23 credits per semester. This provision is meant to provide students the comfort of the flexibility of semester-wise academic load and to learn at his/her own pace. However, the mandatory number of credits has to be secured for the purpose of award of Undergraduate Certificate/ Undergraduate Diploma/ Appropriate Bachelor's Degree in the field of Study/Discipline, to a student who chooses to exit at the end of even semesters (details provided in the table below).

S.No	Type of Award	Stage of exit	Mandatory credits to be secured for the award
1	Undergraduate Certificate in the field of Study/Discipline	After successful completion of Semester II	46
2	Undergraduate Diploma in the field of Study/Discipline	After successful completion of Semester IV	96
3	Bachelor of (field of Multidisciplinary course of study) (for multiple core disciplines courses Honours Discipline)	After successful completion of Semester VI	146
4	Bachelor of (field of study Honours Discipline) for single core discipline course of study	After successful completion of Semester VI	146
5	Bachelor of (field of multidisciplinary causes of study) (Honours)	After successful completion of Semester VIII	192
6	Bachelor of (field of study discipline) (Honours with research academic project entrepreneurship) (Discipline for single core discipline course of study)	After successful completion of Semester VIII	192

#### **PROGRAM OBJECTIVE**

- This course is designed and structured with intent to provide our students a dynamically stimulating environment, where the students can get transformed into highly skilled IT specialists.
- The curriculum has been designed to give the students an in-depth knowledge of various subjects related to Information Technology along with the basic concepts of management.
- This under graduate programme equips the students with an in-depth understanding of technical concepts coupled with intensive industry exposure.
- The course curriculum is designed after a deep analysis of the requisitions from the industry stakeholders and focusing on the industry expectations from IT professionals.
- The Programme also offers tremendous flexibility and learning opportunities through credit-based approach.
- The salient features of the programme include emphasis on enhancing the students' soft skills and providing them with optimum industry interaction through varied initiatives.
- To produce employable IT workforce, that will have sound knowledge of IT and business fundamentals that can be applied to develop and customize solutions for Small and Medium Enterprises.

- The Program prepares students with competent skill-sets and detailed knowledge of different verticals in the Computer Application field and helps them to take up different technical roles in the industry.
- The Program covers comprehensive technical knowledge, in demand by various industry domains and in the fields of Website Development, Software Development, Quality Assurance, Web Technology and Project Management etc.
- The approach adopted in this Program is unique and Industry oriented, as it explores and experiments with ideas.
- Demonstrate the critical thinking and communication skills required in a technical environment.
- Enable participants to be part of live projects to implement and test their computer application skills and provide feedback and a roadmap for progress.

#### **DURATION OF THE PROGRAM/MAXIMUM DURATION**

The BCA Program shall be of three years / four years with six / eight semesters respectively. A student will be required to complete the program within minimum 3/4 years and maximum a duration of 5 / 6 years from the date of first registration in the first Semester.

The student shall be required to undergo 4-5 weeks Summer Internship or Summer Project at the end of the Second year (4th Semester) & submits its report in the 5<sup>th</sup> Semester. Also, the student has to undertake a “**Major Project**” during the program, in the 6<sup>th</sup> semester during the final/third year. Major Project should be preferably with a local industry or with an IT firm, undertaking a live project or providing a web-based solution, for giving a practical solution of a problem, etc

An academic year consists two semesters, Odd Semester (July-Dec) and Even Semester (Jan-June). Duration of Each semester can increase or decrease. Generally, each semester has 15-18 weeks of academic works.

The examination for the I, III, and V, VII semesters shall ordinarily be held in the month of November/December and of the II, IV and VI, VIII semesters in the month of April/May or on such dates as may be fixed by the University.

#### **REGISTRATION AT THE START OF EVERY SEMESTER**

Every semester, students admitted to a program should register him/her for the next Semester. The student must also register for the elective courses, if any, (both discipline specific and open electives) that he/she wishes to take in that particular semester (especially in the final year/last 2 semesters).

#### **PROMOTION FROM 1ST YEAR TO 2ND YEAR**

A student is eligible for promotion to next year, if he/she meets the below mentioned minimum CGPA Criteria (by combining odd and even semester).

- For promotion from 1<sup>st</sup> Year to 2<sup>nd</sup> year, Minimum CGPA of 4.0
- For promotion from 2<sup>nd</sup> Year to 3<sup>rd</sup> year, Minimum CGPA of 4.5
- For promotion from 3<sup>rd</sup> Year to 4<sup>th</sup> year, Minimum CGPA of 4.5

**Meaning:** If for a Student, if CGPA is 4.0 (**Minimum 40% marks are required to get promoted**) or more than 4.0 in 1<sup>st</sup> year having any number of subject backlog/fail, he/she shall be promoted to next year. That, it is his/her choice to clear his/her backlog in summer semester or with semester end examination as per ODD backlog with ODD semester and EVEN Backlog in EVEN Semester.

If student CGPA is less than 4.0, having any number of backlog in the 1<sup>st</sup> year and CGPA is less than 4.5 in 2<sup>nd</sup> year, he/she must appear in summer semester to clear backlog papers.

For promotion to 3<sup>rd</sup> Year, a student must have to clear all his/her paper of 1<sup>st</sup> year. Student cannot carry internal backlog to next year, he/she must clear his/her internal backlog before commencement of next year session.

For promotion to 4<sup>th</sup> year, a student must have to clear all his/her paper of 1<sup>st</sup> year, 2<sup>nd</sup> year and 3<sup>rd</sup> year. Student cannot carry internal backlog to next year, he/she must clear his/her internal backlog before commencement of next year session.

## **TEACHING PEDAGOGY**

The evolution of teaching pedagogy applied at RNBGU makes the curriculum more dynamic as it incorporates not just learning through lectures but also applying the concepts with the help of Role Plays, Case Studies and other creative exercises.

- Practical Based Learning – Case Studies, Role Play Sessions, Debates, Simulations, Brain Storming, Presentations etc.
- Academia Industry Interface – Industrial Visits, 45 days' intense industry practice, Live Projects, Guest Lectures, Webinar and Workshops, etc
- Club Activities – Games Club, Marketing, Finance, HR, Sports and Cultural Club etc.

The teaching pedagogy at RNBGU can be divided into three modules focusing upon developing three major core competency areas of our students. These modules are –

**Module-I:** Computer Skills Training program that focuses on imparting the Fundamental & advanced Computer Knowledge of different relevant topics & subjects, deemed essential for the working and operations of the modern corporate world & the IT industry.

**Module-II:** A rigorous personality development training and soft skill development program that aims at enhancing the English & Soft Skills of the students.

**Module-III:** Concentrates on development of right Aptitude (Job Oriented Skills) along with focus on industry interactions, Project based studies, workshops & seminars for hands on experience

In the networking world of today, communication skills are becoming very important. A manager's main role is to communicate his/her vision and strategy to others and get them to work with him/her

towards that vision. RNBGU places special importance on the communication and interpersonal skills of students by imparting subjects like 'Ability & Skill Enhancement'

### **CONTINUOUS ASSESSMENT**

A continuous assessment system in semester system (also known as internal assessment/comprehensive assessment) is spread throughout the duration of the course and is done by the teacher teaching the course/subject. The student gets an opportunity to learn more using the continuous learning method. The students do not keep the things for last one month and would learn throughout the semester. The continuous assessment provides a feedback on teaching learning process. The feedback after being analyzed is passed on to the concerned student for implementation and subsequent improvement. As a part of concurrent evaluation, the learners shall be evaluated on a continuous basis by the University to ensure that student learning takes place in a graded manner

Project based learning and regular assignments form an integral part of academic curriculum at RNBGU, Assignments help the students to apply the concepts which results in deeper understanding of the subject and related topic. Students are expected to apply the concepts to real life management problems in such assignments and projects. It also increases the efficiency of students.

**Students can refer to the semester/year wise "Program Assignment chart"** to get a better idea on the format/style & number of assignments they need to take in a particular semester/year. The assignments are designed in such a way that helps in the holistic growth of the students along with creating confidence & bettering the communication skills.

### **ASE- ABILITY AND SKILL ENHANCEMENT**

Ability and Skill Enhancement (ASE) is the umbrella under which various spikes like training modules on communication skills, business etiquettes, technical terminology, vertical study, understanding requirements of various specializations and many such topics are taught which render in helping the students prepare for the Global Entrant. ASE has been conceptualized with a view to explore the dynamics and techniques of effective interpersonal communication and to reinforce confidence in students by concentrating on what works about the individual. We believe that students need to not only develop academically but develop the ability to survive in the modern world.

#### **Aim of ASE is:**

1. To convert the conceptual understanding of communication into everyday practice and to train students to apply concepts/ideas in their own experience.
2. To create a learner-language interface enabling students to exercise control over language use.
3. To exercise control over language use and sensitize students to the nuances of the four basic communication skills – Listening, Speaking, Reading and Writing.
4. To give them the skill sets that would help them grow professionally.

Along with imparting education and academic proficiency to students, we prepare them for situations beyond academics also. Inclusion of co-curricular and extracurricular activities under ASE is facilitating a comprehensive development of students. ASE focuses on body language,

communication interpersonal and presentation skills by teaching them the art of developing, creating and executing their presentation with a professional approach and attitude.

ASE Modules I To VIII are specifically designed so as to gradually increase the learning approach of the student, helping students train their mind keeping themselves in the realistic world. It enables a student to develop key professional qualities.

ASE helps in achieving the University's mission to promote 'True Learning' and discourage 'Rot Learning'. Use of tutorials, assignments, debates, quizzes, presentations, case studies, projects, practical test, viva voce and many more modern tools promotes the learning quotient among the students.

**This is one of the exclusive features of RNBGU's skill enhancement efforts.**

### **WORKSHOPS & SEMINARS**

Inviting eminent personalities who have achieved some feat in their field to take some seminars and workshops for the students greatly help them interact with present and ongoing advancements in the technology and market. Seminars and workshops are capable of keeping the students updated with the technology. Active participation in a workshop provides continuing resource of ideas, suggestions and possible solutions to the problems. Besides, workshops do tend to address issues faced by organizations which may be helpful in resolving many severities.

Students get an opportunity to connect their theoretical knowledge with practicing managers. It enhances the confidence level of student's aspiring their dreams. It is always a nice option to exercise the textbook tools with technological knowhow. Students attending such workshops, seminars can demonstrate their capabilities and can further more update their knowledge through such platforms.

**This is one of the key features of RNBGU's learning pedagogy.**

### **SUMMER INTERNSHIP**

- Internship is the best option to develop skills and experience in particular field which is dependent on student choice or company according. Basically, the internship is a first stage to learn the technical language (Java, Android, PHP, Web designing, .Net, SEO) which is beneficial for the student.
- Internships are key to building experience as a student or recent graduate. Employers are much more likely to hire someone with internships and work experience rather than someone with a generic resume, lacking experience.
- Some specific reasons to include internships in BCA, is follow: Real world experience, Networking, Resume Builder, Time Management, and Career Foundation.

Internships are taken after the end of the 4<sup>th</sup> semester for a period of 4-5 weeks. It carries 4 credits & the student needs to submit his Summer Internship Report in the 5<sup>th</sup> semester. For the ease of students understanding, Summer internship is evaluated for a total of 150 marks for Weekly Reports, Project report, Presentation & Viva Voce & later converted into grade & grade points as per the University Examination Policy.

Complete document/guidelines are available for the help/assistance of the students for SIP. **Students can refer to the BCA Summer Internship & Project Instructions & Assistance Document** to get a better idea on the Formats, Style, Project reports, Marks breakup & scoring criteria, etc; enabling students a better perspective & understanding on benefiting the maximum from such dedicated & sincere efforts by RNB Global University for organizing such Summer Internship program for its students.

**The complete SIP reporting & evaluation pattern is again a very unique & well-structured industry academia learning efforts of RNBGU.**

### **MAJOR PROJECT**

- The Bachelor of Computer Applications (BCA) program prepares the students to take up positions as Programmers, Systems Analysts, Systems Designers in the field related to computer science and information technology or students may go for higher studies in this area.
- The courses studied by you during your BCA program provide you the basic background to work on diverse application domains. The theoretical background of various courses provides you the necessary foundation, principles, and practices to develop effective ways to solve computing problems. The hands-on experience gained from the practical courses provide you the knowledge to work with various operating systems, programming languages and software tools.
- This project work is kept in BCA program to give you an opportunity to develop quality software solution.
- The primary emphasis of the project work is to understand and gain the knowledge of the principles of software engineering practices and develops good understanding of SDLC (Software Development Life Cycle).
- The BCA students are encouraged to involve themselves completely on the project work in their final semester. It is advised to students to develop their project for solving problems of software industry or any research organization. Doing this will give more exposure to handle real life problems of project development. Students should take this project work very seriously. Topics selected, should be complex and large enough to justify as a BCA project.

Every student needs to take up a Major Project in the 7<sup>th</sup> semester. It carries 8 credits. The projects are mainly IT Industry oriented.

The project is to be pursued by him / her under the supervision of an Internal Faculty supervisor, which is to be appointed by the Dean.

Prior to starting the project, students must go through the proposal stage, during which students will develop their proposal and have it reviewed by his/her research advisor.

The student needs to submit his Major Project report induplicate at least four weeks prior to the commencement of the End Term Examination of the Sixth Semester.

For the ease of students understanding, Major Project is evaluated for a total of 300 marks of which 50 marks are for 5 Working Reports of 10 marks each (minimum duration between 2 reports is 1 week & maximum duration between 2 reports is 1 fortnight), 50 marks for final Project Report, 100 marks for successfully showcasing the live project executed by the student & 100 marks towards Presentation on

his learning, use of technology, program coding, use of software, etc & followed by question & answers(Viva Voce). Marks obtained are later converted into grade & grade points as per the University Examination Policy.

50 marks based on the 5 working reports will be evaluated internally by the Supervising Faculty. Project Report, showcasing of live project, along with Presentation & Viva Voce shall be evaluated by an External Examiner appointed by the University for a total of 250 marks (50 marks for Project Report, 100 marks for showcasing of live project & 100 marks for Presentation & Viva Voce).

### **SEMESTER WISE COURSE DETAILS**

#### **Semester –I**

S. No	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BCAC14100	DSC 1 (a)	Fundamentals of Programming with C	3	0	0	3
2.	BCAC14101	DSC 1 (b)	Programming with C Lab	0	0	2	1
3.	BCAC14102	DSC 2	Mathematics- I	3	1	0	4
4.	BCAC14103	DSC 3	Software Engineering	3	1	0	4
5.		GE 1	One from the Pool of GE – Group A	3	1	0	4
6.	AECH55002	AEC -1	Hindi – I	2	0	0	2
7.	SEC077001	SEC -1	Ability and skill enhancement-I	2	0	0	2
8.		VAC -1	One from the pool of VAC group A	2	0	0	2
9.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/NCC/NSS	-	-	-	1
<b>Total</b>				<b>18</b>	<b>3</b>	<b>2</b>	<b>23</b>

#### **Semester- II**

S. No	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BCAC14150	DSC 4 (a)	Digital Electronics	3	0	0	3
2.	BCAC14151	DSC 4 (b)	Digital Electronics Lab	0	0	2	1
3.	BCAC14152	DSC 5 (a)	Data Structure using C	3	0	0	3
4.	BCAC14153	DSC 5 (b)	Data Structure using C Lab	0	0	2	1
5.	BCAC14154	DSC 6 (a)	Operating System	3	0	0	3
6.	BCAC14155	DSC 6 (b)	Operating System Lab	0	0	2	1
7.		GE 2	One from the Pool of GE – Group B	3	1	0	4
8.	AECE55001	AEC -2	Study of Ecosystem and Natural Resources (EVS 1)	2	0	0	2
9.	SEC077002	SEC 2	Ability and skill enhancement-II	2	0	0	2
10.		VAC – 2	One from the pool of VAC Group B	2	0	0	2
11.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/NCC/NSS	-	-	-	1
<b>Total</b>				<b>18</b>	<b>1</b>	<b>6</b>	<b>23</b>

**UG Certificate: Students who opt to exit after completion of the first year and have secured 46 credits will be awarded a UG certificate**



**Semester- III**

S. No	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BCAC14200	DSC 7 (a)	Python	3	0	0	3
2.	BCAC14201	DSC 7 (b)	Python Lab	0	0	2	1
3.	BCAC14202	DSC 8 (a)	Database Management System	3	0	0	3
4.	BCAC14203	DSC 8 (b)	Database Management System Lab	0	0	2	1
5.	BCAC14204	DSC 9 (a)	Object Oriented Programming with C/C++	3	0	0	3
6.	BCAC14205	DSC 9 (b)	Object Oriented Programming with C/C++ Lab	0	0	2	1
7.		DSE 1	One from the Pool of DSE Courses	3	1	0	4
8.	AECH55003	AEC – 3	Hindi - II	2	0	0	2
9.	IAPC99249	IAPC – 1	Internship/apprenticeship / project/ <b>community outreach</b>	2	0	0	2
10..		VAC – 3	One from the pool of VAC Group A	2	0	0	2
11.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/NCC/NSS	-	-	-	1
<b>Total</b>				<b>18</b>	<b>1</b>	<b>6</b>	<b>23</b>

**Semester - IV**

S. No	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BCAC14250	DSC10 (a)	Java Programming Language	3	0	0	3
2.	BCAC14251	DSC10 (b)	Java Programming Language Lab	0	0	2	1
3.	BCAC14252	DSC11 (a)	Computer Networks	3	0	0	3
4.	BCAC14253	DSC11 (b)	Computer Networks Lab	0	0	2	1
5.	BCAC14254	DSC12 (a)	Computer Graphics	3	0	0	3
6.	BCAC14255	DSC12 (b)	Computer Graphics Lab	0	0	2	1
7.	BCAC14256	DSC 13	Cyber Security	3	1	0	4
8.		DSE 2 (a)	One from the Pool of DSE Courses	3	0	0	3
9.		DSE 2 (b)	One from the Pool of DSE Courses	0	0	2	1
10.	AECE55002	AEC – 4	Biodiversity and Environment Conservation (EVS 2)	2	0	0	2
11.	IAPC99299	IAPC – 2	Internship/apprenticeship / project/ <b>community outreach</b>	2	0	0	2
12.		VAC – 4	One from the pool of VAC Group B	2	0	0	2
13.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/NCC/NSS	-	-	-	1
<b>Total</b>				<b>21</b>	<b>2</b>	<b>8</b>	<b>27</b>

**UG Diploma: Students who opt to exit after completion of the second year and have secured 96 credits will be awarded the UG diploma**

**Semester- V**

S. No	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BCAC14300	DSC 14 (a)	Analysis and Design of Algorithm	3	0	0	3
2.	BCAC14301	DSC 14 (b)	Analysis and Design of Algorithm Lab	0	0	2	1
3.	BCAC14302	DSC 15	Data Warehousing and Data Mining	3	1	0	4
4.	BCAC14352	DSC 16	Cloud Computing	3	1	0	4
5.		DSE 3(a)	One from the Pool of DSE Courses	3	0	0	3
6.		DSE 3(b)	One from the Pool of DSE Courses	0	0	2	1
7.		GE 3	One from the Pool of GE Group - A	4	0	0	4
8.	IAPC99349	IAPC -3	<b>Internship</b> /apprenticeship / project/ community outreach	0	0	8	4
9.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/NCC/NSS	-	-	-	1
<b>Total</b>				<b>16</b>	<b>2</b>	<b>12</b>	<b>25</b>

**Semester – VI**

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BCAC14350	DSC 17	Software Testing and Quality Assurance	3	1	0	4
2.	BCAC14351	DSC 18	Theory of Computation	3	1	0	4
3.	BCAC14352	DSC 19	Mobile Computing	3	1	0	4
4.		DSE 4 (a)	One from the Pool of DSE Courses	3	0	0	3
5.		DSE 4 (b)	One from the Pool of DSE Courses	0	0	2	1
6.		GE 4	One from the Pool of GE Group –B	4	0	0	4
7.	IAPC99399	IAPC – 4	Internship/Apprenticeship / <b>Project</b> / Community Outreach	0	0	8	4
8.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/NCC/NSS	-	-	-	1
<b>Total</b>				<b>16</b>	<b>3</b>	<b>10</b>	<b>25</b>

**3-year UG Degree: Students who wish to undergo a 3-year UG program will be awarded a UG Degree in the Major discipline after successful completion of three years, securing 146 credits.**

**Semester – VII**

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BCAC14400	DSC 20	Internet of Things (IOT)	3	1	0	4
2.		DSE 5 / GE 5	One from the Pool of DSE Courses / One from the pool of General electives	3	1	0	4
3.		DSE 6 / GE 6	One from the Pool of DSE Courses / One from the pool of General electives	3	1	0	4
4.		DSE 7	One from the Pool of DSE Courses	3	1	0	4
5.	DAPE99449	ACADEMIC PROJECT	Academic/Project/Entrepreneurship	0	0	12	6
6.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/NCC/NSS	-	-	-	1
		<b>Total</b>		<b>12</b>	<b>4</b>	<b>12</b>	<b>23</b>

**Semester – VIII**

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BCAC14450	DSC 21	Block Chain technologies	3	1	0	4
2.		DSE 8 / GE 7	One from the Pool of DSE Courses / One from the pool of General electives	3	1	0	4
3.		DSE 9 / GE 8	One from the Pool of DSE Courses / One from the pool of General electives	3	1	0	4
4.		DSE 10	One from the Pool of DSE Courses	3	1	0	4
5.	DAPE99499	Dissertation	Research / Dissertation	0	0	12	6
6.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/NCC/NSS	-	-	-	1
		<b>Total</b>		<b>12</b>	<b>4</b>	<b>12</b>	<b>23</b>

**UG Honor's degree in the major discipline will be awarded to those who complete a four-year degree program with 192 credits**

**4-year UG Degree (Honours with Research):** Students who secure 75% marks and above in the first six semesters and wish to undertake research at the undergraduate level can choose a research stream in the fourth year. They should do a research project or dissertation under the guidance of a faculty member of the University/College. The research project/dissertation will be in the major discipline. The students who secure 192 credits, including 12 credits from a research project/dissertation, are awarded a UG Degree (Honors with Research).

**Note: \* Honors students not undertaking research will opt for 3 DSE courses of 12 credits in place of a research project / Dissertation.**

**List of Courses****General Elective Courses (GE)****Group A Odd Semester**

SN	Course Code	Course Name	L	T	P	Credits
1.	GEC066001	Business Communication (GE 1)	4	0	0	4
2.	GEC066002	E-Commerce (GE5)	4	0	0	4
3.	GEC066003	Intellectual Property Rights	4	0	0	4
4.	GEC066004	Goods and Services Tax	4	0	0	4
5.	GEC066013	Entrepreneurship (GE 7)	4	0	0	4
6.	GEC066006	English Communication	4	0	0	4
7.	GEC066008	Women Studies	4	0	0	4
8.	GEC066009	Financial Management	4	0	0	4
9.	GEC066010	Artificial Intelligence (GE 3)	4	0	0	4

**Group B Even Semester**

10.	GEC066011	Computer Applications	2	0	0	2
11.	GEC066012	Computer Application Lab	0	0	4	2
12.	GEC066005	Research Problem, Interpretation and Report Writing (GE 6)	4	0	0	4
13.	GEC066014	Research Methodology in Biotechnology	4	0	0	4
14.	GEC066015	Understanding Indian Knowledge System	4	0	0	4
15.	GEC066016	Basics of Indian Constitution	4	0	0	4
16.	GEC066017	Indian Culture and Civilization	4	0	0	4
17.	GEC066018	Research Methodology (GE 8)	4	0	0	4
18.	GEC066019	Machine Learning (GE 4)	4	0	0	4
19.	GEC066020	Rural Marketing	4	0	0	4
20.	GEC066021	Gender Justice	4	0	0	4
21.	GEC066007	Principles of Management (GE 2)	4	0	0	4

**Value Addition Courses (VAC)****Group A Odd Semester**

SN	Course Code	Course Name	L	T	P	Credits
1.	VAC088001	Electoral Literacy (VAC -1)	2	0	0	2
2.	VAC088002	Basic Instrumentation Skills	2	0	0	2
3.	VAC088003	Introduction to Computers and IT (VAC – 2)	2	0	0	2
4.	VAC088004	Basics of Goods and Services Tax	2	0	0	2
5.	VAC088005	Principles of Accounting -1 (VAC -3)	2	0	0	2
6.	VAC088006	Introduction to Digital Marketing	2	0	0	2
7.	VAC088007	Understanding Gandhi	2	0	0	2
8.	VAC088008	Understanding Sardar Patel	2	0	0	2
9.	VAC088009	Sports for Life	2	0	0	2
10.	VAC088010	Biological Databases and their Management	2	0	0	2
11.	VAC088011	Ability and Skill Enhancement III	2	0	0	2
12.	VAC088012	Ability and Skill Enhancement V	2	0	0	2
<b>Group B Even Semester</b>						
13.	VAC088013	Application of IT Skills in Sciences	1	0	0	1
14.	VAC088014	Application of IT Skills in Sciences Lab	0	0	2	1
15.	VAC088015	Renewable Energy and Energy Harvesting	2	0	0	2
16.	VAC088016	Human Values and Professional Ethics	2	0	0	2
17.	VAC088017	Business and Managerial Ethics	2	0	0	2
18.	VAC088018	Family Business Management	2	0	0	2
19.	VAC088019	Emotional Intelligence	2	0	0	2
20.	VAC088020	Yoga: Philosophy and Practice	2	0	0	2
21.	VAC088021	Panchkosh- Holistic Development of Personality	2	0	0	2
22.	VAC088022	Digital Empowerment	2	0	0	2
23.	VAC088023	Ability and Skill Enhancement IV	2	0	0	2
24.	VAC088024	Ability and Skill Enhancement VI	2	0	0	2
25.	VAC088025	Banking and Insurance	2	0	0	2
26.	VAC088026	Principle of Accounting – 2 (VAC – 4)				

### **Discipline Specific Course`s**

S.No	Course Code	Course Name	L	T	P	Credits
1.	BCAE14001	Computer Architecture (DSE 1)	3	1	0	4
2.	BCAE14002	Web Technology (DSE 2(a))	3	0	0	3
	BCAE14003	Web Technology lab (DSE 2(b))	0	0	2	1
3.	BCAE14004	PHP & My SQL (DSE 3(a))	3	0	0	3
	BCAE14005	PHP & My SQL lab (DSE 3(b))	0	0	2	1
4.	BCAE14006	Unix & Shell programming (DSE 4(a))	3	0	0	3
	BCAE14007	Unix & Shell programming lab (DSE 4(b))	0	0	2	1
5.	BCAE14008	Cyber laws (DSE 5)	3	1	0	4
6.	BCAE14009	Advance development technologies (DSE 6)	3	1	0	4
7.	BCAE14010	Intelligent System (DSE 7)	3	1	0	4
8.	BCAE14011	Digital image processing (DSE 8)	3	1	0	4
9.	BCAE14012	Advanced internet programming (DSE 9)	3	1	0	4
10.	BCAE14013	TCP / IP (DSE 10)	3	1	0	4
11.	BCAE14014	Big data analytics and visualization	3	1	0	4
12.	BCAE14015	Natural language processing	3	1	0	4
13.	BCAE14016	Introduction to IOT	3	1	0	4
14.	BCAE14017	Multimedia and graphics	3	1	0	4
15.	BCAE14018	Wireless networks and communications	3	1	0	4

### **EVALUATION SCHEME- THEORY**

The evaluation of the theory paper of BCA would be based on Internal and External Assessments. Internal Assessment would consist of 50% of the marks (50 marks) and external assessment (in form of End Term Exam) would consist of remaining 50% marks (50 marks). Detailed scheme of Internal and External Assessments as follows:

#### **Internal Assessment**

Type	Details	Marks
Mid Term	One Mid-term Sessional	25
Quiz	Quiz based on MCQs	5
Marks obtained in various Tests, Assignments, Presentations, Tutorials etc.	Average of Marks obtained	15
Academic Performance including Attendance	Eligibility >75% Attendance	5
<b>TOTAL</b>		<b>50</b>

**External Assessment**

Type	Marks
Theory	50

**EVALUATION SCHEME -PRACTICAL**

The evaluation of the practical paper of BCA would be based on Internal and External Assessments. Internal Assessment would consist of 50% of the marks (50 marks) and external assessment (in form of End Term Exam) would consist of remaining 50% marks (50 marks). Detailed scheme of Internal and External Assessment is as follows:

**Internal Assessment**

The distribution of Internal Assessment Marks is as follows:

Type	Details	Marks
Marks obtained in various manuals, practical file, participation, any model prepared, output of practical	Average of marks obtained	45
Academic Performance including Attendance	Eligibility >75% Attendance	5
<b>TOTAL</b>	<b>50</b>	

**External Assessment**

Type	Marks
Practical	50

**EVALUATION SCHEME- WORKSHOPS & SEMINARS AND HUMAN VALUES & SOCIAL SERVICE/NCC/NSS**

1. The evaluation of Workshops & Seminar and Human Values & Social Service/NCC/NSS will be completed from Semester I – Semester VI. It will be evaluated internally by the various Forums & Schools Concerned. The credit for this will be given at the end of each Semester.
2. The students have to join club/clubs/Forums with the active participation in different activities of club. The students would be continuously assessed from Semester-I to Semester-IV and credits and marks would be given after the end of each Semester.



3. The evaluation of Dissertation/ Academic Project/Entrepreneurship of Semester VII and VIII will be done separately. The dissertation report will be evaluated by departmental faculty followed by presentation and viva voce to be evaluated by external expert

### **Concluding Note**

An overview of the UGCF , clearly brings out the multidisciplinary approach, adherence to innovative ways within the curriculum framework to allow the student maximum flexibility in pursuing his/ her studies at the undergraduate level to the extent of having the liberty to eventually design the degree with multiple exit options depending upon the needs and aspirations of the student in terms of his/ her goals of life, without compromising on the teaching learning, both in qualitative and quantitative terms.

The university expects maximum involvement of the student fraternity in utilising the benefits of such a flexible yet rigorous curriculum framework at the undergraduate level and reaping the benefits of it through enrichment of their skills in their area of interest which will eventually help them in gaining employment, entrepreneurship, start-ups and various other ways of a dignified life and living as a global citizen with comparable skills and innovative ideas befitting to the contemporary global demands. The university expects the youthful nation to reap the maximum benefits out of the UGCF-2022 in developing skilled manpower to harness the youthful energy at one hand and expand the permeation of the skilled workforce globally, taking the demographic advantage on the other hand.

### **Feedback Form**

Suggestions are invited from stakeholders, educators, experts and industries in the Feedback Form whose link is provided on LMS to further improve upon it.

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