

**Detailed Program Scheme**  
**Bachelor of Science (Hons.)**  
**Agriculture**  
**(2024- 2028)**

DOC202410100005



**RNB GLOBAL UNIVERSITY**  
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### Document Release Notice

#### Detailed Program Scheme for all Semesters

**Release: Version 1.0**

<b>Name of Program</b>	Bachelor of Science (Hons.) Agriculture
<b>Abbreviated Program Name</b>	B.Sc. (Hons.) Agri.
<b>Updated on</b>	October 2024
<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. Kindly be noted that Lab Includes: Laboratory work / Field Work/Industry Visits/Practical/Hands on Experience. The curricular and the syllabi are as recommended by the Sixth Deans' Committee of Indian Council of Agricultural Research, New Delhi.

### **Course Scheme**

<b>Name of Program</b>	Bachelor of Science (Hons.) Agriculture
<b>Duration of Program</b>	4 years
<b>Number of Semester</b>	8
<b>Total Credit of Program</b>	<b>180 + 10 (Online course/ MOOC)</b>

### **DETAILED CREDIT STRUCTURE**

<b>Year 1</b>	Semester I	20 credits
	Semester II	21 credits
<b>Year 2</b>	Semester III	22 credits
	Semester IV	22 credits
<b>Year 3</b>	Semester V	28 credits
	Semester VI	22 credits
<b>Year 4</b>	Semester-VII	25 credits
	Semester-VIII	20 credits
<b>Total Credits</b>		<b>180 Credits + 10 (Online course/ MOOC)</b>

## **Executive Guidelines of 6<sup>th</sup> Deans Committee Report**

New Education Policy-2020 (NEP-2020) of India proposed many changes in the education system of India, including higher agriculture education system. A national level Committee was constituted by ICAR to develop an implementation strategy to comply with various provisions of National Education Policy (NEP-2020). ICAR constituted the Sixth Deans' Committee to restructure the existing course curricula so as to enable implementation of NEP-2020 in agricultural education. As per the NEP- 2020 recommendations, the Sixth Deans' Committee has incorporated following several new initiatives in the proposed restructured UG curricula.

### **1.1 Classification of level of courses with targeted outcomes**

The courses have been classified as per the level of teaching and also based on targeted outcome.

- The 1st year of the UG programme (NHEQF Level 4. 5) includes the Foundation courses, introductory courses and skills enhancement courses/training in the chosen area, ability enhancement courses. It is aimed that student/s will acquire the basic knowledge in respective disciplines and adequate skill in some selected areas, to enable them for employment/ entrepreneurship.
- The 2nd year (NHEQF Level 5) includes the basic core courses and additional skill enhancement in chosen areas/ courses. It is aimed that the student/s will acquire the higher-level knowledge in respective disciplines and adequate skills in some selected areas, to enable them employment at middle level/ supervisory level or for entrepreneurship.
- The 3rd year includes the advanced core subjects and their practical applications with an objective that the student will have deeper understanding of the subjects and their major application areas.
- The 4th year (NHEQF Level 6) will have the specialization/ elective courses and advanced skill enhancement through project and internship. The student will acquire advanced knowledge and skill in different areas so as to meet the higher order requirements of the society and industry as well as other prospective employers. It will also enable the graduates to become a job provider rather than a job seeker through establishment of enterprises in concerned fields.

### **1.2 Multiple Entry and Exit**

There is provision of multiple entry and exit at different levels. The student/s will have the option to exit after the 1st year. He/ she/ ze has to complete 10 weeks of internship (10 credits) after 1st year (2 semesters) to be eligible for award of UG-Certificate.

The student has another option to exit after the 2nd year. The student has to complete another 10 weeks of internship (10 credits) after 2nd year (4 semesters) to be eligible for award of UG-Diploma.

After four years of study, the student will be awarded UG degree in concerned discipline. No exit after 3 years (6 semesters) is recommended considering the professional nature of the courses.

The lateral entry at 3rd semester will be for the candidates having UG-certificate or those who have completed Diploma (3 years course after 10th) in recognised HAEIs. The lateral entry in 5th semester will be for candidates who have completed UG-Diploma.

### **1.3 New courses for acquiring advanced knowledge and skill and for strengthening their cultural and ethical values and through choice-based programs**

#### **1.3.1 Deeksharambh (Induction—cum-foundation course)**

A course entitled “Deeksharambh” (0+2) (Non-gradual) will be offered at the start of first semester for a duration of two weeks. This will create a platform for students to learn from each other’s life experiences, help for cultural Integration of students from different backgrounds, know about the operational framework of academic process in university, instilling life and social skills, social awareness, ethics and values, team work, leadership, creativity, etc. It will also help in identifying the traditional values and indigenous cultures along with diverse potentialities both in indigenous and developed scenario. There will be sessions by alumni, business leaders, outstanding achievers in related fields, people with inspiring life experiences as well as the University academic and research managers.

#### **1.3.2 Common Courses**

The following common courses have been proposed to be offered across the disciplines. This will enable the student for better communication skills and personality development as well as to have a broader view of agriculture and allied sectors, which will allow them for future collaboration with other sectors to face the next generation challenges from a holistic point of view.

- Farming based livelihood systems
- Entrepreneurship Development and Business Management
- Agriculture Marketing and Trade
- Communication Skills
- Personality Development
- Environmental Studies and Disaster Management
- Agricultural Informatics and Artificial Intelligence

In addition to these common courses and Deekshyarambh, the courses such as Physical Education, First Aid, Yoga Practices, Meditation, NCC and NSS have also been made compulsory for students for better social awareness and health of the future generation.

### **1.3. 3 New Age Courses**

New age courses like artificial intelligence, robotics, machine learning, etc. have been incorporated into the course curricula. Besides an array of elective courses have been included so that the student can get deeper knowledge and understanding in the subject of his/her/ze interest. Due emphasis has been given to include the latest topics and subjects in both core and elective courses. Practical exercises and teaching methodology are proposed to make the young generation more imaginative, innovative, ingenious, creative and competent.

### **1.3.4 Online/MOOC Courses**

The students will have to take a minimum of 10 credits of online courses, comprising one or more courses, as a partial requirement for the UG programme. The online courses can be from any field such as Basic Sciences, Humanities, Psychology, Anthropology, Economics, Engineering, Business Management, Languages including foreign language, Communication skills/ Music, etc. and can be taken from any online portal. The objective is to allow the students to groom their passion or strengthen their knowledge and competency in any field beyond prescribed courses.

### **1.3.5 Elective Courses**

The institutions will offer a bouquet of Elective courses to be offered to the students. The students will have the freedom to choose a subject among these courses. The institutions should develop capabilities to offer maximum of the Elective courses proposed in this report. The institutions will also have the liberty to develop new Elective courses as per local needs and available expertise.

## **1.4 Imparting Traditional Knowledge, Values and Ethics**

Due emphasis has been given for imbibing the traditional knowledge, values and ethics among the students through different courses like the Deeksharambh, NCC/ NSS. It is proposed that Study tours shall be conducted across the country to make the student aware about the socio-cultural- economic status of the people of the country and develop respect for their values and ethics.

## **1.5 Entrepreneurship Development as a Career Path**

The restructured undergraduate curricula are designed to enable the students to take up entrepreneurship as a career path. As per NEP- 2020, the curricula in all the disciplines of Agricultural education have been refined and fine-tuned with intensive focus on choice-based skill enhancement programs.

- Skill enhancement courses are included in different modes as follows:
- Skill enhancement courses in the 1st year and 2nd year as part of the course programs;
- Internship for exit programs after 1st year/ 2nd year; and
- Advanced skill enhancement through Student READY programs such as in-plant training/ internship/ projects in 4th year.

The skills acquired must make the students proactive, pioneering, prospect oriented during their internship or industrial attachment to serve as apprentices in the relevant field. It will empower them to grasp viable avenues of self-employment and entrepreneurship along with diversified career options in different facets of related domains.

### **1.5.1 Skill Enhancement Courses**

Skill enhancement courses are essential requirements for any programme (UG-Certificate/ UG- Diploma or Degree). These will be choice based; student can choose the areas of skill enhancement from a bouquet of skill enhancement modules offered by the parent institution. The institutions will develop capabilities for offering such courses.

An institution is at liberty to (and in fact, it should) work in partnership with capable organizations/ companies/ NGOs/ progressive entrepreneurs/ farmers for running various skill enhancement programs.

The University/ HAEIs may also formulate and offer courses in any other areas as identified by it, based on institutional expertise/ capabilities/ resources. In addition, the skill enhancement courses suggested by the UGC, may also be offered.

### **1.5.2 Internship**

Those students who wish to exit with UG-certificate after one year, has to undergo 10 weeks of internship programme (10 credits) after 1st Year. Similarly, the students who wish to exit with UG- Diploma after 2nd year, has to undergo 10 weeks of internship programme (10 credits) after 2nd Year. The goal of Internship at exit for UG-Certificate and UG-Diploma is to further strengthen skills in the chosen area/ subject.

Internship should be preferably arranged outside of the parent institution at any assigned organization/ industry/ research institution/ project or with a progressive farmer/ agri enterprise, etc.

### **1.5.3 Projects**

For some disciplines, Projects have been kept as an integral part of the course programme. This will enable the students to develop required competencies and skill in either research or entrepreneurship or potential employment avenues rather than having only mere qualifications. They will be able to choose appropriate career in research or employment/ entrepreneurship, discover their interests, aptitudes and potentialities and maximise their potentialities and self-confidence. It will also add to creativity and critical thinking of the students.

### **1.6 Restructuring of UG Programs**

The restructuring has been done based on the following NHEQF levels:

- Year 1, Certificate Course, NEP-NHEQF Level 4.5
- Year-2, Diploma Course, NEP-NHEQF Level 5.0
- Year 4, B.Sc. (Hons.)/ B. F. Sc. (Hons.)/ B. Tech. NEP-NHEQF Level 6.0

The restructured program for the undergraduate agriculture education with multiple entry and exit options is illustrated in Figure 1.6.



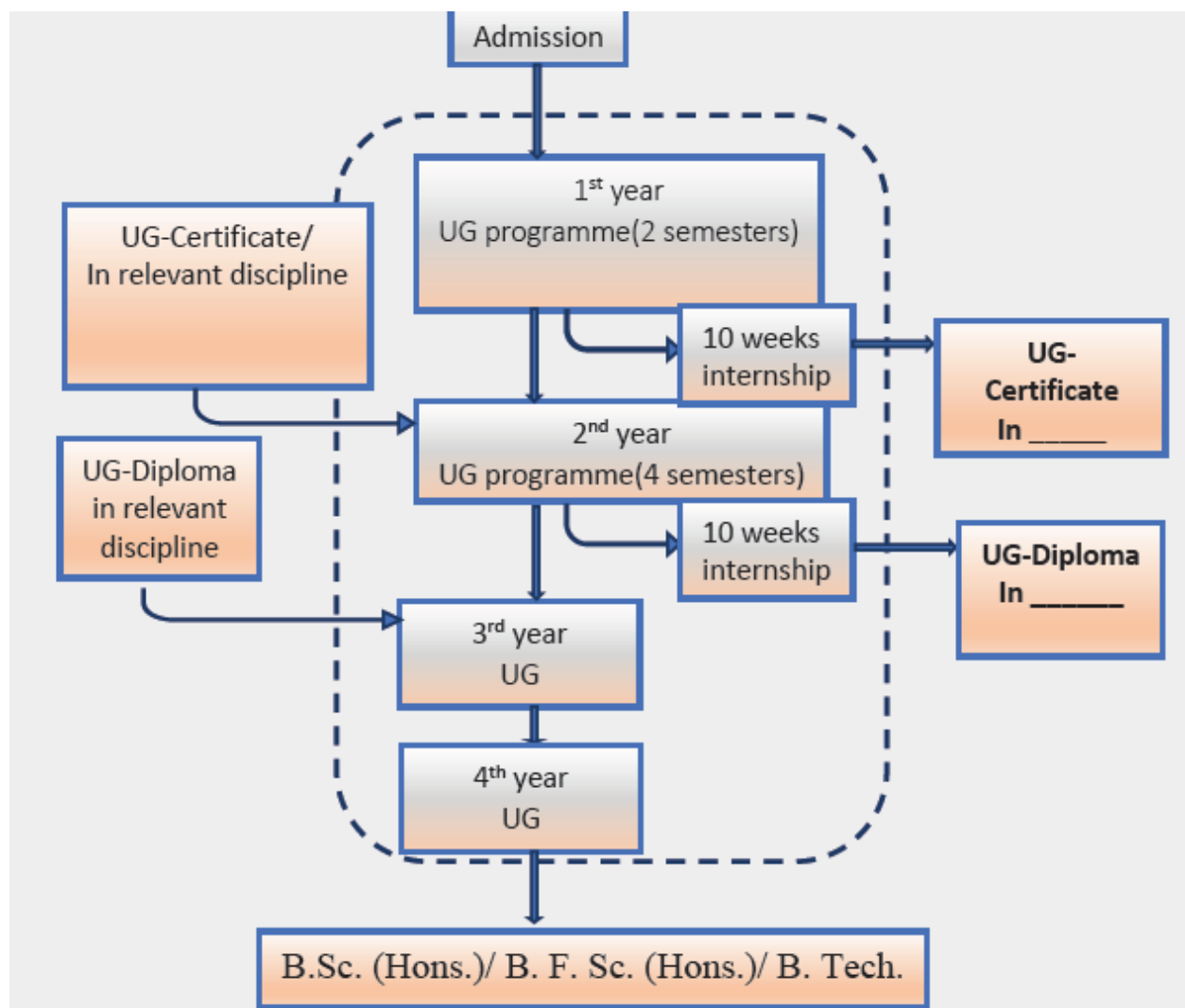


Figure 1.6 Framework of Undergraduate programmes

The eligibility for entry into the UG programs will be + 2 Science; the students will be admitted as per norms of ICAR/ SAUs/CAUs. The 1st year of the programme will be having the foundation, introductory and skill enhancement courses. The 2nd year will be having basic core courses with some more options for skill enhancement. The 3rd year of the programme will have advanced core courses. The 4th year programme will emphasize more on the specialisation and elective courses as well as advanced skill enhancement through internship.

There will be exit options after 1st year and 2nd year for UG-Certificate and UG-Diploma. However, the students opting to exit with UG-Certificate or UG-Diploma will have to take up 10 weeks internship after the 1st year (2 semester) and 2nd year (4 semesters), respectively.

Table 1.6 shows the restructured undergraduate programs for the higher agricultural educational institutions (HAEIs).

**Table 1.6 Types of courses and learning outcomes for the restructured undergraduate programs for the HAEIs**

Year	Types of courses	Learning outcome	Exit option
YEAR 1 NHEQF Level 4.5	Foundation courses, introductory courses and skills enhancement training/ training in the chosen area, ability enhancement courses	Students will acquire the basic knowledge in respective disciplines and adequate skill in some selected areas, to enable them for employment/ entrepreneurship	A student must complete 10 weeks of internship (10 credits) after 1st year if exit with UG-Certificate is opted
YEAR-2 NHEQF Level 5	Basic core courses and additional skill enhancement in chosen areas/ courses	Students will acquire the higher-level knowledge in respective disciplines and adequate skill in some selected areas, to enable them for employment at middle level/ supervisory level or for entrepreneurship	A student must complete 10 weeks of internship (10 credits) after 2nd year if exit with UG-Diploma is opted
YEAR-3	Advanced core subjects and their practical applications	Students will have deeper understanding of the subjects and their major application areas	No exit after 3rd year
YEAR-4 NHEQF Level 6	Specialization/ Elective courses and advanced skill enhancement through project and internship	Students will acquire advanced knowledge and skill in different areas so as to meet the higher order requirements of the society and industry as well as other prospective employers. It will also enable the graduates to become a job provider rather than being a job seeker through establishment of enterprises in concerned fields.	UG degree in concerned discipline

## 1.7 Credit Hours Allocation

A total of 166-174 credit hours is recommended for the four years of UG programs. The credit distributions for the different courses have been specified for individual disciplines. The general structure is given in Table 1.7

**Table 1.7 General Credits Allocation Scheme of UG Programs (Credit hours)**

Semester	Core Courses (Major+ Minor)	Multi-Disciplinary Course (MDC)	Value Added Course (VAC)	Ability Enhancement Course (AEC)	Skill Enhancement Course (SEC)	Internship / Project/ Student READY	Total Credits	Non-Gradial	Online Courses / MOOC
I	12	3(2)		1(3) + 2(4)	4	-	22	2(1)	10
II	10	3(5)	3(6)	1(3) + 2(7)	4	-	23	-	
Post-II semester						10(12)			
III	16	----		2(8)	2	-	20		
IV	12	3(9)	3 (10)	----	2	-	20	-	
Post-IV semester						10(13)			
V	21	-	-	-	-	-	21	2(11)	
VI	21	-	-	-	-	-	21	-	
VII	20	-	-	-	-	-	20	-	
VIII	-	-	-	-	-	20	20	-	
Total	112	9	6	8	12	20	167	4	10

- (1) Deeksharambh (Induction-cum-Foundation Course) of 2 credits (2 weeks duration).
  - (2) Farming based Livelihood systems
  - (3) NCC/NSS; (4) Communication Skills; (5) Entrepreneurship Development and Business Management
  - (6) Environmental Studies and Disaster Management;
  - (7) Personality Development; (8) Physical Education, First Aid, Yoga Practices and Meditation.
  - (9) Agriculture Marketing and Trade; (10) Agriculture Informatics and Artificial Intelligence
  - (11) Study tour (10-14 days).
  - (12) Only for those opting for an exit with UG-Certificate. (13) Only for those opting for an exit with UG-Diploma
- One multidisciplinary course in Agricultural Engineering discipline is different from the above common courses keeping in view the discipline specific requirement.

**Note:**

- The credit hours mentioned in the Table 4.2 include both theory and practical.
- The total credit allocation and the allocation for different types of courses including online courses for some disciplines such as Agricultural Engineering, Dairy Technology and Food Technology are slightly different than those mentioned in the Table 4.2, so as to accommodate the specific need of these disciplines.
- Also, some minor deviations in the courses and credits allocations are allowed across disciplines considering the specific nature of the courses.
- The three-year course curricula of all disciplines of agricultural and allied sciences do not cover the teaching of elective/ specialized courses, that in fact qualify the students in specializing in a particular subject in which the student intends to do further studies. These courses have been presently listed under the 7th and 8th semesters (in IV year). Therefore, the Sixth Deans' Committee is of the view that the option of B. Sc. (Hons.) with research may lead to deficiency of the knowledge and learning of the elective / specialized subjects needed for PG studies. For
- B. Tech. programs, the framework prescribed by AICTE/ UGC may be applicable. Under such circumstances, the Committee recommends that the launching of UG degree with research should be deferred for the time being. ICAR may consider about this aspect along with considering restructuring PG/ Ph.D. programs. Also considering the professional nature of the courses, the exit after at the end of 3rd year (at the end of 6th semester) is not recommended.
- Each class (contact hour) will be of 50 min duration and one practical will be of two contact hours.
- If the student has to take up any deficiency course(s), that has to be satisfactorily completed within the first year.

**1.8 Deeksharambh (Introduction- cum-foundation course)**

The goal of higher education is to nurture students by blossoming their hidden potentials to pursue the academic and professional studies in a diligent, honest and responsible manner. It is possible by facilitating them to develop a sense of integrity with diverse faculties and build linkages with peers, society and community as a whole and lastly be proficient in earning livelihood independently along with sustaining society and nature.

A course entitled Deeksharambh (0+2) (Non-gradual) will be offered at the start of first semester for a duration of two weeks. This will be a part of first semester for all purposes including the calculation of Net Instruction Days (NIDs).

The goal of Deeksharambh is to inculcate life skills, develop bonding with mentors, peers and seniors, familiarize with institutional academic framework and functioning, It must educate students to explore their potentials and understand the purpose of their life with reference to serving the community, nation and global society.

Often the incoming undergraduate students are influenced by their parents and relatives to join higher studies, without understanding their own interests and talents.

Therefore, the very purpose of initiating Deeksharambh: the induction cum foundation course is to acclimatize the student with the new surroundings, develop bond with fellow students and teachers. It is the time when a student should become clear as to what he/she/ze is going to study in a particular discipline, or even it is time to quit and join another discipline of his/ her choice. They must develop sensitivity towards various issues of social relevance and imbibe human values to become responsible citizens.

Thus, ensuring a well-designed Induction-cum-foundation program by the institutions shall be designed to become helpful to both teachers and students for setting the pace of productive teaching and learning experiences.

#### Four Pillars of Deeksharambh

Socializing: Meeting new students, senior students, attend lectures by Eminent People.

Associating: Visits to university / college, visits to Dept./Branch/ Program of study and important places on campus, local area, city and so on.

Acclimatizing with rules and regulations, student support system, etc.

Experiencing: Subject lectures, study skills, small-group activities, physical activity, creative and performing arts, literary activities, universal human values, etc.

Deeksharambh will create a platform for students to:

- learn from each other's life experiences,
- help for cultural integration of students from different backgrounds,
- know about the operational framework of academic process in university,
- instilling life and social skills,
- social awareness, ethics and values, team work, leadership, creativity, etc., and
- identify the traditional values and indigenous cultures along with diverse potentialities both in indigenous and developed scenario.

There will be sessions by alumni, business leaders, outstanding achievers in related fields, people with inspiring life experiences as well as the University academic and research managers.

Steps will be taken by the institutions to identify the strength and weakness of students (with remedial measures) and diverse potentialities and to enhance cultural Integration of students from different backgrounds.

### 1.9 Common courses

The following common courses have been proposed to be offered across the disciplines, which in addition to giving the students a broader view of agriculture and allied sectors, will enable them for better communication skills and personality development.

Besides, this will also help them to look beyond the boundaries of their own subject/ discipline, and collaborate in future with other sectors to face the next generation challenges from a holistic point of view.

- Farming based livelihood systems
- Entrepreneurship Development and Business Management
- Agriculture Marketing and Trade
- Communication Skills
- Personality Development
- Environmental Studies and Disaster Management
- Agricultural Informatics and artificial Intelligence

In addition to these common courses and Deeksharambh, the courses as Physical Education, First Aid, Yoga Practices and Meditation, NCC and NSS have also been made compulsory for students for improving social awareness, ethics, moral values and health of the future generation.

### **1.10 New age courses**

Courses like artificial intelligence, robotics, machine learning, etc. have been incorporated into the course curricula. Besides an array of elective courses have been included so that the student can get deeper knowledge and understanding in the subject of his interest. Emphasis has also been given to include the latest topics and subjects in both core and elective courses. Practical exercises and pedagogy are proposed to make the next generation more imaginative, innovative, ingenious, creative and competent.

### **1.11 Deficiency courses**

If the student has to take up any deficiency course(s), it has to be completed within the first year.

### **1.12 Entrepreneurship development**

Entrepreneurship is a key driver of the economy of a nation, which has been encouraged through NEP-2020. Expectation is that an early orientation of the young minds towards skill enhancement and entrepreneurship will inculcate entrepreneurial mind set, allowing them to have first-hand experience of working with institutions, organizations, companies, industrial setup and investors so as to understand their dynamics in the real-world setting.

The restructured undergraduate curricula are designed to enable the students to take up entrepreneurship as a career path. As per NEP-2020, the curricula in all the disciplines of Agricultural education have been refined and fine-tuned with intensive focus on choice-based skill enhancement programs.

- Skill enhancement courses are included in following different modes:
- Skill enhancement courses in the 1st year and 2nd year as part of the course programs;
- Internship for exit programs after 1st year/ 2nd year; and
- Advanced skill enhancement through Student READY: Experiential Learning/Hands on Training/Skill development/ RAWE/ Industrial attachment/IPT/ student project and Internship etc. in 4th year.

Internship can be seen as a mini capsule of intense learning for a student, a way to apply the theory into practice, expand their knowledge base and a platform to integrate all learnings of formal classroom setup.

Addition of new age courses related to Agriculture, Forestry, Fisheries, Agricultural Engineering, Community Science, Food Nutrition and Dietetics, etc., and incorporation of choice based online courses, which can be taken up from NPTEL, moo KIT, edX, Coursera, SWAYAM or any other portal in open digital learning environment. Practical exercises and teaching methodology are so designed to make the young generation more imaginative, innovative, ingenious, creative and competent.

The skill set acquired must make them proactive, pioneering, prospect oriented during their internship or industrial attachment to serve as apprentices in the relevant field. This will empower them to grasp viable avenues of self-employment and entrepreneurship along with diversified career options in different facets of related domains.

#### **1.12.1 Skill Enhancement Courses**

The skill enhancement programs will be choice based; student can choose the areas of skill enhancement from a bouquet of skill enhancement modules offered by the parent institution. The institutions will develop capabilities for offering such courses.

An institution is at liberty to (and in fact, it should) work in partnership with capable organizations/ companies/ NGOs/ progressive entrepreneurs/ farmers for running various skill enhancement programs.

In the report, for each discipline the list of Skill Enhancement Courses (SEC) has been suggested. The University/ HAEIs may also formulate and offer courses in any other areas as identified by it, based on institutional expertise/ capabilities/ resources. In addition, the skill enhancement courses suggested by the UGC, as listed, may also be offered.

The evaluation of the skill enhancement programs will be as per the evaluation criteria of courses with only practical. However, for the internship programs, the evaluation will be done jointly by the host and parent organisations/ institutions.

### **1.12.2 Internship**

The internship proposed under NEP-2020 have been an integral part of agricultural education (as proposed by Fifth Deans' Committee) under the broad category of Student READY programs. It includes various activities such as Experiential Learning/ Hands-on Training, Skill Development Training, Rural Agriculture Work Experience (RAWE), In-Plant Training/ Industrial Attachment and Students' Projects. Therefore, in the recommended structure, the student READY is further strengthened as per NEP-2020 guidelines.

Those students who wish to exit with UG-certificate after one year, has to undergo 10 weeks of internship programme (10 credits) after 1st Year. Similarly, the students who wish to exit with UG-Diploma after second year, has to undergo 10 weeks of internship programme (10 credits) after 2nd Year. The goal of Internship at exit for UG-Certificate and UG-Diploma is to further strengthen skills in the chosen area/ subject.

Internship should be preferably arranged outside of the parent institution at any assigned organization/ industry/ research institution/ project or with a progressive farmer/ agri enterprise, etc.

HAEIs will ensure that the Internship program is aligned with the course that the student has chosen. It is recommended that each HAEI appoints one or more Coordinators for the internship programs. The coordinator must plan/execute/ monitor internship programme implementation at the institution level.

### **1.12.3 Projects**

For some disciplines, projects have been kept as an integral part of the course programme. This will enable the students to develop required competencies and skill in either research or entrepreneurship or potential employment avenues rather than having only mere qualifications, choose appropriate career in research or employment/ entrepreneurship, discover their interests, aptitudes and potentialities and maximise his/ her/ze potentialities and self-confidence. It will also add to creativity and critical thinking of the students. This will also help the students gain research skills and be more innovative in planning, executing, reporting and presenting the things.

### **1.13 Study tour**

There will be a study tour of 10-14 days' duration during the 5th semester of the UG programme. The students will preferably visit the leading industries/ enterprises/ institutions/ organisations and other places of academic interest outside the state (of location of the institution). This, in addition to exposing the students to the indigenous as well as the latest technologies in their related fields, will also help the students to know about the socio-



economic-cultural variations within the country. The course will be of 0+2 credits, non-gradual.

#### **1.14 Online / MOOC courses**

The students will have to take a minimum of 10 credits of online courses, which will comprise of one or more courses, as a partial requirement for the UG programme.

(As per UGC guideline, a 1- to 3- credit SWAYAM course is expected to be covered in 4-12 weeks' duration including the assessment component, in which it should be 40 hours for 3-credit courses to 80 hours for a 6-credit course for the learning from e-content, reading references material, discussion forum posting and assignment.)

*The online courses can be from any field such as Basic Sciences, Humanities, Psychology, Anthropology, Economics, Engineering, Business Management, Languages including foreign language, Communication skills/ Music, etc., and can be taken from NPTEL, moocKIT, edX, Coursera, SWAYAM or any other portal.*

The objective is to allow the students to groom their passion or strengthen their knowledge and competency in any field beyond prescribed courses.

The courses will be non-gradual as separate certificates would be issued by institutes offering the courses. These can be taken any time during the duration of UG program, but preferably during the 3rd and 4th years.

The University/ institute will keep a record of such courses registered and completed by each student and will indicate the title of the (successfully completed) courses in final transcript issued to the student.

The requirement of credits for online courses for B. Tech. programs is different due to the specific need of the disciplines.

#### **1.15 Elective courses**

The institutions will offer a bouquet of Elective courses to be offered to the students. The students will have the freedom to choose a subject among these courses. The institutions should develop capabilities to offer maximum of the Elective courses proposed in this report. The institutions will also have the liberty to develop and offer more Elective courses relevant to the subject as per local/ regional needs and available expertise. The elective courses can be offered from other disciplines in a Universality/HAEI.

### **1.16 Imparting Traditional Knowledge, Values and Ethics**

Due emphasis has been given for imbibing the traditional knowledge, values and ethics among the students through different courses like the Deeksharambh, NCC and NSS. It is proposed the Study tour shall be conducted across the country to be aware about the socio-cultural-economic status of the people of the country and develop respect for their values and ethics.

### **1.17 Exit Option**

There will be three exits during the restructured UG programme.

Exit after 1st year: A student may opt to exit after the 1st year of UG programme. However, he/ she/ze has to complete 10 weeks of internship (10 credits) to be eligible for being awarded UG- Certificate degree. (The students going to the higher level need not take 10 weeks internship at this stage.)

Exit after 2nd year: A student may opt to exit after the 2nd year of UG programme. However, he/ she/ze has to complete 10 weeks of internship (10 credits) to be eligible for being awarded UG- Certificate degree. (The students going to the higher level need not take 10 weeks internship at this stage.)

Exit after 4-years programme leading to B.Sc. (Hons.)/ B.F.Sc. (Hons.)/ B. Tech. degree.

### **1.18 Maximum residential period**

Students who exit with a UG- Certificate or UG- Diploma are permitted to re-enter within three academic years and complete the degree programme.

Students may be permitted to take a break from the study during the period of study but the total duration for completing the programme shall not exceed 7 years.

## SEMESTER WISE COURSE DETAILS

### Semester –I

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1	ICFC99001		Deeksharambh (Induction cum Foundation course)	2 weeks (NG) Non-gradual			
2	SECA77001	SEC-I	Bio-fertilizer and Bio- pesticide Production	0	0	4	2
3	SECA77002	SEC-II	Mushroom Production Technology	0	0	4	2
4	AECA55001	AEC-1	Communication Skills	1	0	0	1
5	AECA55002	AEC-2	Communication Skills Lab	0	0	2	1
6	BSAC54100	DSCAG-2a	Introductory Agro-forestry	1	0	0	1
7	BSAC54101	DSCAG-2b	Introductory Agro-forestry Lab	0	0	2	1
8	BSAC50100	DSCAC-1	Rural Sociology and Educational Psychology	2	0	0	2
9	BSAC41100	DSCAG-1a	Fundamentals of Agronomy	2	0	0	2
10	BSAC41101	DSCAG-1b	Fundamentals of Agronomy Lab	0	0	2	1
11	BSAC43100	DSCSO-1a	Fundamentals of Soil Science	2	0	0	2
12	BSAC43101	DSCSO-1b	Fundamentals of Soil Science Lab	0	0	2	1
13	BSAC48100	DSCHO-1a	Fundamentals of Horticulture	2	0	0	2
14	BSAC48101	DSCHO-1b	Fundamentals of Horticulture Lab	0	0	2	1
15	WHNN99000	AEC-3	National Service Scheme (NSS-I)	0	0	2	1
16	BSAC55101	DSERB-1	Introductory Biology*/	1	0	2	2Non-gradual
	BSAC55102	DSERM-2	Introductory Mathematics*	2	0	0	
			<b>Total</b>	<b>10</b>		<b>20</b>	<b>20</b>

(Introductory Biology/ Elementary Mathematics)\*: any one to be taken based on subject not learnt in 12th Standard

**Semester -II**

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	SECA77003	SEC-III	Seed Production Technology Lab	0	0	4	2
2.	SECA77004	SEC-IV	Post-harvest processing technology Lab	0	0	4	2
3.	BSAC50150	AEC-4	Personality Development	1	0	0	1
4.	BSAC50151	AEC-5	Personality Development Lab	0	0	2	1
5.	BSAC57150	AEC-6	Environmental Studies and Disaster Management	2	0	0	2
6.	BSAC57151	AEC-7	Environmental Studies and Disaster Management Lab	0	0	2	1
7.	BSAC43150	DSCSO-2a	Soil Fertility Management	2	0	0	2
8.	BSAC43151	DSCSO-2b	Soil Fertility Management Lab	0	0	2	1
9.	BSAC44150	DSCEN-1a	Fundamentals of Entomology	2	0	0	2
10.	BSAC44151	DSCEN-1b	Fundamentals of Entomology Lab	0	0	2	1
11.	BSAC53200	DSCAP-1a	Livestock and poultry Management	1	0	0	1
12.	BSAC53201	DSCAP-1b	Livestock and poultry Management Lab	0	0	2	1
13.	BSAC47150	DSCPP-1a	Fundamentals of Plant Pathology	2	0	0	2
14.	BSAC47151	DSCPP-1b	Fundamentals of Plant Pathology Lab	0	0	2	1
15.	WHNN99151	AEC-8	National Service Scheme (NSS-II)	0	0	2	1
			<b>Total</b>	<b>10</b>	<b>0</b>	<b>22</b>	<b>21</b>

### **Semester – III**

<b>S. No.</b>	<b>Course Code</b>	<b>Course Category</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
1.	SECA77005	SEC-V	Beneficial insect farming Lab	0	0	4	2
2.	AECA55007	AEC-9	Entrepreneurship Development and Business Communication	2	0	0	2
3.	AECA55008	AEC-10	Entrepreneurship Development and Business Communication Lab	0	0	2	1
4.	AECA55009	AEC-11	Physical Education, First Aid, Yoga Practices and Meditation Lab	0	0	4	2
5.	BSAC42150	DSC PB-1a	Principle of Genetics	2	0	0	2
6.	BSAC42151	DSC PB-1b	Principle of Genetics Lab	0	0	2	1
7.	BSAC41200	DSC AG-3a	Crop Production Technology -I (Kharif crops)	1	0	0	1
8.	BSAC41201	DSC AG-3b	Crop Production Technology-I (Kharif crops) Lab	0	0	4	2
9.	BSAC48252	DSC HO-2a	Production Technology of Fruit and Plantation Crops	1	0	0	1
10.	BSAC81253	DSC HO-2b	Production Technology of Fruit and Plantation Crops Lab	0	0	2	1
11.	BSAC50150	DSC AC-2a	Fundamentals of Extension Education	1	0	0	1
12.	BSAC50151	DSC AC-2b	Fundamentals of Extension Education Lab	0	0	2	1
13.	BSAC56200	DSC NE-1a	Fundamentals of Nematology	1	0	0	1
14.	BSAC56201	DSC NE-1b	Fundamentals of Nematology Lab	0	0	2	1
15.	BSAC41202	DSC AG-4a	Principles and Practices of Natural Farming	1	0	0	1
16.	BSAC41203	DSC AG-4b	Principles and Practices of Natural Farming Lab	0	0	2	1
17.	WHNN99000		Workshop & Seminars / Human Value & Social Service / NSS	-	-	-	1
			<b>Total</b>	<b>09</b>		<b>24</b>	<b>22</b>

**Semester – IV**

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	SECA77006	SEC-VI	Horticulture nursery management	0	0	4	2
2.	AECA55010	AEC-12	Agricultural Informatics and Artificial Intelligence (AI)	2	0	0	2
3.	AECA55011	AEC-13	Agricultural Informatics and Artificial Intelligence (AI) Lab	0	0	2	1
4.	BSAC48200	DSCHO-3a	Production Technology of Vegetables and Spices	1	0	0	1
5.	BSAC48201	DSCHO-3b	Production Technology of Vegetables and Spices Lab	0	0	2	1
6.	BSAC45252	DSCEC-1	Principles of Agricultural Economics and Farm Management	2	0	0	2
7.	BSAC41250	DSCAG-5a	Crop Production Technology-II (Rabi Crops)	1	0	0	1
8.	BSAC41251	DSCAG-5b	Crop Production Technology-II (Rabi Crops) Lab	0	0	4	2
9.	BSAC46200	DSCAE-1a	Farm Machinery and Power	1	0	0	1
10.	BSAC46201	DSCAE-1b	Farm Machinery and Power Lab	0	0	2	1
11.	BSAC41255	DSCAG-6a	Water Management	1	0	0	1
12.	BSAC41256	DSCAG-6b	Water Management Lab	0	0	2	1
13.	BSAC43250	DSCSO-3a	Problematic Soils and their management	1	0	0	1
14.	BSAC43251	DSCSO-3b	Problematic Soils and their management Lab	0	0	2	1
15.	BSAC42200	DSCPB-2a	Basics of Plant Breeding	2	0	0	2
20.	BSAC42201	DSCPB-2b	Basics of Plant Breeding Lab	0	0	2	1
21.	WHNN99000		Workshop & Seminars / Human Value & Social Service / NSS	-	-	-	1
			<b>Total</b>	<b>11</b>		<b>20</b>	<b>22</b>

**Semester – V**

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BSAC45300	AEC-14	Agricultural Marketing and Trade	2	0	0	2
2.	BSAC45301	AEC-15	Agricultural Marketing and Trade Lab	0	0	2	1
3.	BSAC57300	DSCMT-1a	Introduction to Agro-meteorology	1	0	0	1
4.	BSAC57301	DSCMT-1b	Introduction to Agro-meteorology Lab	0	0	2	1
5.	BSAC51152	DSCBI-1a	Fundamentals of Crop Physiology	2	0	0	2
6.	BSAC51153	DSCBI-1b	Fundamentals of Crop Physiology Lab	0	0	2	1
7.	BSAC44302	DSCEN-2a	Pest management in crops and stored grains	2	0	0	2
8.	BSAC44303	DSCEN-2b	Pest management in crops and stored grains Lab	0	0	2	1
9.	BSAC47304	DSCPP-2a	Diseases of Field and Horticultural Crops and their Management	2	0	0	2
10.	BSAC47305	DSCPP-2b	Diseases of Field and Horticultural Crops and their Management Lab	0	0	2	1
11.	BSAC42300	DSCPB-3a	Crop Improvement (kharif crops) – I	1	0	0	1
12.	BSAC42301	DSCPB-3b	Crop Improvement (kharif crops) – I Lab	0	0	2	1
13.	BSAE41003	DSCAG-7a	Weed Management	1	0	0	1
14.	BSAE41004	DSCAG-7b	Weed Management Lab	0	0	2	1
15.	BSAC48300	DSCHO-4a	Ornamental Crops, MAPs and Landscaping	1	0	0	1
16.	BSAC48301	DSCHO-4b	Ornamental Crops, MAPs and Landscaping	0	0	2	1
17.	BSAE41005	AEC-16	Farming based livelihood systems	2	0	0	2
18.	BSAE41006	AEC-17	Farming based livelihood systems Lab	0	0	2	1
19.	IAPC99347	IAPC-1	Summer Internship and Report	-	-	-	4
20.	WHNN99000		Workshop & Seminars / Human Value & Social Service / NSS	-	-	-	1
			<b>Total</b>	<b>14</b>		<b>18</b>	<b>28</b>

**Semester- VI**

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	BSAC58350	DSCBT-1a	Fundamentals of Agricultural Biotechnology	2	0	0	2
2.	BSAC58351	DSCBT-1b	Fundamentals of Agricultural Biotechnology Lab	0	0	2	1
3.	BSAC52350	DSCST-1b	Basic and Applied Agricultural Statistics	2	0	0	2
4.	BSAC52351	DSCST-2b	Basic and Applied Agricultural Statistics Lab	0	0	2	1
5.	BSAC42350	DSCPB-4a	Crop Improvement (Rabi crops)-II	1	0	0	1
6.	BSAC42351	DSCPB-4b	Crop Improvement (Rabi crops)-II Lab	0	0	2	1
7.	BSAC46352	DSCAE-2a	Renewable energy in Agriculture and Allied Sector	1	0	0	1
8.	BSAC46353	DSCAE-2b	Renewable energy in Agriculture and Allied Sector Lab	0	0	2	1
9.	BSAC41353	DSCAG-8a	Dryland agriculture/ Rainfed agriculture and watershed management	1	0	0	1
10.	BSAC41354	DSCAG-8b	Dryland agriculture/ Rainfed agriculture and watershed management Lab	0	0	2	1
11.	BSAC47352	DSCPP-3a	Agricultural Microbiology and Phyto-remediation	1	0	0	1
12.	BSAC47353	DSCPP-3b	Agricultural Microbiology and Phyto-remediation Lab	0	0	2	1
13.	BSAC45350	DSCEC-2a	Agricultural Finance and Cooperation	1	0	0	1
14.	BSAC45351	DSCEC-2b	Agricultural Finance and Cooperation Lab	0	0	2	1
15.	BSCA51350	DSCBi-2a	Essentials of Plant Biochemistry	2	0	0	2
16.	BSCA51351	DSCBi-2b	Essentials of Plant Biochemistry Lab	0	0	2	1
17.	BSAC42352	DSCPB-5a	Fundamentals of Seed Science and Technology	1	0	0	1
18.	BSAC42353	DSCPB-5b	Fundamentals of Seed Science and Technology Lab	0	0	2	1
19.	WHNN99000		Workshop & Seminars / Human Value & Social Service / NSS	-	-	-	1
<b>Total</b>				<b>12</b>	<b>0</b>	<b>18</b>	<b>22</b>



**Semester – VII**

Five Elective Courses (major or minor) each of 4 (3+1) credits or total 20 credits for B.Sc. (Hons) Agriculture degree

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.a	BSAE45000	DSCEC-3a	Agri-Business Management	3	0	0	3
1.b	BSAE45001	DSCEC-3b	Agri-Business Management Lab	0	0	2	1
2.a	BSAE43000	DSCSO-4a	Management of natural resources	3	0	0	3
2.b	BSAE43001	DSCSO-4b	Management of natural resources Lab	0	0	2	1
3.a	BSAE47000	DSCPP-4a	Agrochemicals	3	0	0	3
3.b	BSAE47001	DSCPP-4b	Agrochemicals Lab	0	0	2	1
4.a	BSAE50000	DSCAC-3a	Agricultural Journalism	3	0	0	3
4.b	BSAE50001	DSCAC-3b	Agricultural Journalism Lab	0	0	2	1
5.a	BSAE48000	DSCHO-5a	Landscaping	3	0	0	3
5.b	BSAE48001	DSCHO-5b	Landscaping Lab	0	0	2	1
6.a	BSAE42000	DSCPB-6a	Commercial Plant breeding	3	0	0	3
6.b	BSAE42001	DSCPB-6b	Commercial Plant breeding Lab	0	0	2	1
7.a	BSAE48002	DSCHO-6a	Food safety and standards	3	0	0	3
7.b	BSAE48003	DSCHO-6b	Food safety and standards Lab	0	0	2	1
8.a	BSAE47002	DSCPP-6a	Bioformulation and Nanoformulation	3	0	0	3
8.b	BSAE47003	DSCPP-6b	Bioformulation and Nanoformulation Lab	0	0	2	1
9.a	BSAE47004	DSCPP-7a	Biopesticides and Biofertilizers	3	0	0	3
9.b	BSAE47005	DSCPP-7b	Biopesticides and Biofertilizers Lab	0	0	2	1
10.a	BSAE41005	DSCAG-9a	System Simulation and Agroadvisory	3	0	0	3
10.b	BSAE41006	DSCAG-9b	System Simulation and Agroadvisory Lab	0	0	2	1
11.a	BSAE48004	DSCHO-7a	Hi-tech Horticulture	3	0	0	3
11.b	BSAE48005	DSCHO-7b	Hi-tech Horticulture Lab	0	0	2	1
12.a	BSAE48006	DSCHO-8a	Protected cultivation	2	0	0	2
12.b	BSAE48007	DSCHO-8b	Protected cultivation Lab	0	0	2	1
13.a	BSAE57000	DSCMT-2a	Climate Resilient Agriculture	2	0	0	2
13.b	BSAE57001	DSCMT-2b	Climate Resilient Agriculture Lab	0	0	2	1
14.a	BSAE58000	DSCBT-2a	Biotechnology of Crop Improvement	2	0	0	2
14.b	BSAE58001	DSCBT-2b	Biotechnology of Crop Improvement Lab	0	0	2	1

15.a	BSAE43002	DSCSO-5a	Geoinformatics and remote sensing, precision farming	3	0	0	3
15.b	BSAE43003	DSCSO-5b	Geoinformatics and remote sensing, precision farming Lab	0	0	2	1
16.a	BSAE58002	DSCBT-3a	Micro-propagation Technologies	3	0	0	3
16.b	BSAE58003	DSCBT-3b	Micro-propagation Technologies Lab	0	0	2	1
17.a	BSAE42002	DSCPB-7a	Commercial Seed Production	3	0	0	3
17.b	BSAE42003	DSCPB-7b	Commercial Seed Production Lab	0	0	2	1
18.a	BSAE41007	DSCAG-10a	Principles and Practices of Organic Farming and Conservation Agriculture	1	0	0	1
18.b	BSAE41008	DSCAG-10b	Principles and Practices of Organic Farming and Conservation Agriculture Lab	0	0	2	1
19.a	BSAE49000	DSCBT-4a	Food Science and Nutrition	3	0	0	3
19.b	BSAE49001	DSCBT-4b	Food Science and Nutrition Lab	0	0	2	1
20.a	BSAE48008	DSCHO-9a	Post Harvest Technology and Value Addition	1	0	0	1
20.b	BSAE48009	DSCHO-9b	Post Harvest Technology and Value Addition Lab	0	0	2	1
21.	IAPCC99348	IAPC-II	Summer Internship and Report	-	-	-	4
22.	WHNN99000		Workshop & Seminars / Human Value & Social Service / NSS	-	-	-	1
			<b>Total</b>				<b>25</b>

### **Semester VIII**

Student READY:

Course Code	Course Name	Credits
RDYC99448	<b>Student READY:</b> RAWE/ Industrial Attachment /Experiential Learning / Hands-on Training/ Project Work / Internship	<b>20</b>

Activities	No. of weeks	Credits
<b>Student READY:</b>		20
RAWE/ Industrial Attachment /Experiential Learning / Hands-on Training/ Project Work / Internship		
<b>(A) RAWE (Rural Agricultural Work Experience)</b>		10
1. General orientation & On campus training by different faculties	1	
2. (a) Village attachment training programme	6	
i. Orientation and Survey of Village		
ii. Agronomical Interventions		
iii. Plant Protection Interventions		
iv. Soil Improvement Interventions (Soil sampling and testing)		
v. Fruit and Vegetable production interventions		
vi. Food Processing and Storage interventions		
vii. Animal Production Interventions		
viii. Extension and Transfer of Technology activities		
(b) Attachment in University/College/KVK/research Station	5	
<b>(B) Internship-AIA (Agro Industrial Attachment)</b>	4	5
Students shall be placed in Agro-and Cottage industries and Commodities Boards.		
(Industries include Seed/Sapling production, Pesticides-insecticides, Post-harvest processing-value addition, Agri-finance institutions, etc.)		
<b>Activities and Tasks during Agro-Industrial Attachment Programme</b>		
Acquaintance with industry and staff		
Study of structure, functioning, objective and mandates of the industry		
Study of various processing units and hands-on trainings under supervision of industry staff		
Ethics of industry		
Employment generated by the industry		
Contribution of the industry promoting environment		
Learning business network including outlets of the industry		
Skill development in all crucial tasks of the industry		

Documentation of the activities and task performed by the students		
Performance evaluation, appraisal and ranking of students		
<b>Project Preparation Modules for AIA</b>		
1. Topic/ title of case study.		
2. Student name/ ID No.		
3. Name of Instructor/ Supervisor/Designation.		
4. Department/Section		
5. Detail of Agro Industry Promoter/Place/Address of Industry		
6. Relevance of case study		
7. Objective of case study		
8. Functioning of Agro Industry/Structure of Industry/type of technology used/type of machinery used		
9. Case study out put		
10. Future prospects of case study & suggestions		
11. Recommendations for beneficiaries/farmers about case study		
12. References/Appendices.		
<b>(C)Experiential Learning &amp; Hands on Training</b>	4	5
<b>Project Preparation Modules for Experiential Learning/Hands of Training</b>		
1. Project Title.		
2. Student name/ ID No.		
3. Department/ Section		
4. Name of Guide/ Instructor/ Supervisor/ Designation/ Department		
5. Justification/ Relevance of Project		
6. Project Activities/ Methodologies		
7. Project of Output/results		
8. Summary & Conclusion		
9. Future prospects of case study & suggestions		
10. References		
11. Appendices.		
	20	20

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## **EVALUATION SCHEME- THEORY**

The evaluation of the theory paper of B.Sc. (Agriculture) 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 – Semester I**

Type	Details	Marks
Mid Term	One Mid-term Sessional	25
Marks obtained in various Tests, Assignments, Presentations, Quiz, Tutorials, etc.	Average of marks obtained	20
Attendance	75% + : 5 marks	5
<b>TOTAL</b>	<b>50</b>	

### **Internal Assessment- Semester II to VII**

The distribution of Internal Assessment Marks is as follows:

Type	Details	Marks
Mid Term	Two Mid-term Sessional of 15 marks each (15+15)	30
Marks obtained in various Tests, Assignments, Presentations, Quiz, Tutorials, etc.	Average of marks obtained	15
Attendance	75%+ : 5 marks	5
<b>TOTAL</b>	<b>50</b>	

### **External Assessment**

Type	Marks
Theory	50

### **EVALUATION SCHEME -PRACTICAL**

The evaluation of the practical paper of B.Sc. (Agriculture) 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**

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

#### **External Assessment**

Type	Marks
Practical	50

## Examination Scheme of BSc Agri VIII Semester Student READY Programme

Course code	Course Name	Credit	Maximum Number
RDYC99448	Rural Agricultural Work Experience (RAWE)	20	500
	Agro-Industrial Attachment (Internship)		250
	Experiential Learning & Hands-on Training		250
	<b>Total</b>	<b>20</b>	<b>1000</b>