



# **BACHELOR OF SCIENCE**

**(B.Sc.)**

**(THREE YEAR DEGREE COURSE)**

**ORDINANCE**

Faculty of Science  
Bachelor of Science (B.Sc.)

**ORDINANCES & RULES / REGULATIONS**

1. The course leading to the Bachelor of Science Degree shall extend over three year's and comprise Physical Education, Rastra Gaurav, Environmental Science, Core Course and Applied Courses as prescribed under ordinances 3 and 4 following.
2. For eligibility to enter upon the B.Sc. Course a candidate must have passed the
  - (i) Intermediate examination in Science (i.e. with subjects including Physics, Chemistry and either Mathematics or Biology) of the Madhyamic Shiksha Parishad, Uttar Pradesh or any Indian University duly incorporated by any Law enforce for the time being or
  - (ii) Any other examination recogniosed by the University as equivalent there to.
  - (iii) Provided that a candidate, who has passed the Intermediate Examination (or an equivalent examination) in agriculture may be permitted to take up B.Sc. course in Life Science Group only but

candidate having passed Intermediate or an equivalent examination in Arts or Commerce shall not be eligible.

3. (a) Physical Education shall be studied in the B.Sc. (Part – I) First year only. The candidate shall be required to obtain 35% marks. If the candidate failed in such examination, may be provisionally permitted to appear at the next higher examination concerned B.Sc. (Part – II)
- (b) Rastra Gaurav shall be studied in the B.Sc. (Part – II) Second year only. The candidate shall be required to obtain 35% marks. If the candidate failed in such examination, may be provisionally permitted to appear at the next higher examination concerned B.Sc. (Part – III)
- (c) Environmental Studies shall be studied in the B.Sc. (Part – III) Third year only. The candidate shall be required to obtain 35% marks. If the candidate failed in such examination, may be provisionally permitted to appear at the next higher examination concerned.
- (d) If any, for B.Com. Degree subject to the condition that the result of this B.Com. (Part – III) examination shall not be declared until he/she also passed in the **Physical Education, Rastra Gaurav, Environmental Studies** paper.
- (e) The Core Course shall be studied in all the three years. The Core Course shall be in the following subjects:

- |  |                               |
|--|-------------------------------|
| (i) Physics.                             | (ii) Geography.               |
| (iii) Chemistry.                         | (iv) Military Studies         |
| (v) Mathematics.                         | (vi) Bio-Technology           |
| (vii) Botany.                            | (viii) Computer Science       |
| (ix) Zoology.                            | (x) Industrial Chemistry      |
| (xi) Statistics.                         | (xii) Industrial Microbiology |
| (xiii) Geology.                          | (xiv) Economics               |
| (xv) Seed Technology                     | (xvi) Still Photography       |
| (xvii) Clinical Nutrition &<br>Dietetics | (xviii) Microbiology          |

(f) A candidate shall be required to opt for any one group out of the following and offer from that group three subject as his core course which shall continue in all the three years. The following groups are given below:-

**(A). Physical Science Group:**

1. Mathematics.
2. Any two of the following:
  - (i) Physics.

- (ii) Chemistry.
- (iii) Statistics.
- (iv) Economics.
- (v) Military Studies.
- (vi) Geology.
- (vii) Computer Science.

Provided Economics will be offered only if Statistics is offered as the other subjects.

**(B). Life Science Group:**

1. Botany and /or Zoology and / or Seed Technology.

2. Any two of the following:

- (i) Chemistry.
- (ii) Geology.
- (iii) Geography.
- (iv) Military Studies.
- (v) Bio-Technology.
- (vi) Industrial Microbiology.
- (vii) Industrial Chemistry.
- (viii) Seed technology.
- (ix) Still Photography.
- (x) Clinical Nutrition & Dietetics.
- (xi) Microbiology

Provided that Geography will be offered only by those who offer Geology as the other subjects.

4. (a) The examination for the degree of Bachelor of Science shall consist of three parts:

(i) B.Sc. (Part – I) at the end of the first year.

(ii) B.Sc. (Part – II) at the end of the second year.

(iii) B.Sc. (Part – III) at the end of the third year.

(b) The examinations shall be conducted by means of written papers and will include practicals in core courses (other than those in Mathematics and Economics).

5. A candidate who has been admitted to B.Sc. (Part – I) course and has attended in any affiliated colleges for one academic year the regular course of study as prescribed for B.Sc. (Part – I) examination of the University, under these Ordinances, may be permitted, if otherwise eligible, to appear at the B.Sc. (Part – I) examination.

6. (a). A candidate who, having passed the B.Sc. (Part – I) examination of the University, under these ordinances, has attended in an affiliated college for one academic year the regular course of study as prescribed for the B.Sc. (Part – II) examination of the University under these ordinances may be permitted, if otherwise eligible to appear at the B.Sc. (Part – II) examination.

(b). A candidate who, having passed the B.Sc. (Part – I) examination after 10+2, of any other University duly incorporated by any law in force for the time being, may also be permitted, if otherwise eligible, to appear at B.Sc. (Part – II) examination of the University, provided that:-

(i) he/she offered at the above mentioned B.Sc. (Part – I) examination of such University a course of an equivalent standard with almost such syllabi as is prescribed for B.Sc. (Part – I) examination of the University under these ordinance.

(ii) has attended in an affiliated college for one academic year the regular course of study prescribed for B.Sc. (Part – II) examination of the University under these ordinances.

(c). A candidate who has passed the B.Sc. (Part – I) examination and has attended in an affiliated college for one academic year the regular course of study prescribed for B.Sc. (Part – II) examination of the university under these ordinances together with the regular course prescribed for B.Sc. (Part – I) under these Ordinance, may also be permitted to appear at the B.Sc. (Part – II) examination.

7. (a) A candidate who having passed the B.Sc. (Part – II) examination of the University, under these ordinances has attended in an affiliated college for one academic year the regular course of study as prescribed for B.Sc. (Part – III) examination of the university under

these ordinances may be permitted to appear at the B.Sc. (Part – III) examination.

(b). A candidate who has passed the B.Sc. (Part – II) examination after 10+2 of any other university duly incorporated by any law in force for the time being may also be permitted, , if otherwise eligible, to appear at B.Sc. (Part – III) examination of the University, provided that:-

(i) he/she offered at the above mentioned B.Sc. (Part – II) examination of such University a course of an equivalent standard with almost such syllabi as is prescribed for B.Sc. (Part – II) examination of the University under these ordinance.

(ii) has attended in an affiliated college for one academic year the regular course of study prescribed for B.Sc. (Part – III) examination of the University under these ordinances.

8. For a pass in B.Sc. Examination a candidate shall be required to secure the minimum of 35% marks in each theory paper and the minimum of 35% in each practical paper aggregate together in core course. Where a course comprises theory as well as practical the candidate shall have to least 35% marks in theory and practical separately.

9. Provided that in respect of the students who have completed and passed all the three years of the B.Sc. Programme in the aforesaid



manner, the division shall be declared on the basis of the total marks scored in all the three years as follows:

- a) First Division, where student secures 60% or above.**
- b) Second Division where student secures 45% or above but less than 60% marks.**
- c) Third Division where student secures less than 45% marks.**

10. A candidate who has been declared successful at the B.Sc. Part – I, II and III examination in accordance with ordinance – 07, 08 and 09 here in above shall be awarded the degree of Bachelor of Science.

# **FOUNDATION COURSE**

## **PHYSICAL EDUCATION**

### **SYLLABUS**

**Note :- Physical Education shall be studied in the B.Sc. (Part – I) First year only. The Maximum Marks of this Paper is 50 Marks. The candidate shall be required to obtain 35% marks (minimum passing marks should be 18). This paper is compulsory for Regular and Private candidates.**

1. Meaning and Definition of Physical Education Aims and Objectives, Importance.
2. Age and Physical activities and Sports, Chronological, Anatomical and Physiological ages.
3. Sociological implications of Sports and Cultural Heritage.
4. Brief History of Physical Education: Ancient to Modern.
5. Important Institutions of Physical Education and Sports in India.
6. Olympic Games, Asian Games and Commonwealth Games.
7. Need and Importance of Anatomy, Physiology, Recreation and Health Education.
8. Skeletal and Muscular System of Human Body.
9. Respiratory and Digestive Systems.
10. Blood and Circulatory System.

11. Nutrition and Balanced Diet.
12. Ill-effects of Drugs and Tobacco.
13. First Aid and Personal Hygiene.
14. Communicable diseases.
15. Importance of Posture and deviations.
16. Importance of Sports Psychology.
17. Learning, Motivation and Transfer of Training in Physical Education.
18. Prevention and treatment of Sports injuries.
19. Rehabilitation Therapies in Sports injuries
20. Therapeutic Exercises – Isotonic and Isometric.
21. Common Massage Techniques and Therapeutic use.
22. Importance of Management in Physical Education and Sports.
23. Kinesiology-Proximal & Dismal attachments and action of Muscles.
24. Lever and Law of Motion-their application to human body.
25. Force and its application in sports activities.
26. Application to human body of axis and plane, centre and gravity, line of gravity, equilibrium, mass and weight, speed, velocity, acceleration and momentum.

# **FOUNDATION COURSE**

## **RASTRA GAURAV**

### **SYLLABUS**

**Note :- Rastra Gaurav shall be studied in the B.Sc. (Part – II) Second year only. The Maximum Marks of this Paper is 50 Marks. The candidate shall be required to obtain 35% marks (minimum passing marks should be 18). This paper is compulsory for Regular and Private candidates.**

**प्रश्न पत्र का ढाँचा :-**

1. पूर्णांक – 50 न्यूनतम उत्तीर्णक – 18।
2. प्रश्नपत्र में एक-एक अंक के कुल 50 वस्तुनिष्ठ प्रश्न होंगे, जो बहुविकल्पीय होंगे। प्रत्येक प्रश्न के उत्तर के 4 विकल्प रहेंगे। परीक्षार्थी को इन विकल्पों में से किसी एक सही विकल्प पर चिह्न लगाकर उत्तर देना होगा।
3. सभी प्रश्न अनिवार्य होंगे।
4. प्रश्न हिन्दी तथा अंग्रजी दोनों भाषाओं में होंगे।

**पाठ्यक्रम की विषयवस्तु :-**

पाठ्यक्रम में निम्नलिखित विषयों का समावेश रहेगा –

1. सामान्य ज्ञान – 10 प्रश्न (10 प्रश्न x 01 अंक) – 10 अंक का होगा।

2. सामान्य हिन्दी व्याकरण (संधि-विग्रह, समास, पर्यायवाची, विलोम शब्द) – 10 प्रश्न/10 अंक का होगा।
3. सामान्य संस्कृत व्याकरण (संधि-विग्रह, समास, तत्सम, तद्भव शब्द) – 10 प्रश्न/10 अंक का होगा।
4. भारतीय इतिहास, दर्शन, संस्कृति का सामान्य परिचय – 10 प्रश्न/10 अंक का होगा।
5. पर्यटन एवं पर्यावरण विषयक सामान्य जानकारी – 10 प्रश्न/10 अंक का होगा।

# **FOUNDATION COURSE**

## **ENVIRONMENTAL STUDIES**

### **SYLLABUS**

**Note :- (i). Environmental Studies shall be studied in the B.Sc. (Part – III) Third year only. The Maximum Marks of this Paper is 50 Marks. The candidate shall be required to obtain 35% marks (minimum passing marks should be 18). This paper is compulsory for Regular and Private Candidates.**

**(ii). The Question Paper carries 50 marks as follows:**

**(a) Short Answers Pattern of 20 marks.**

**(b) Essay Type with candidate choice of 30 marks.**

#### **Contents of Syllabus:-**

##### **Unit 1:**

The Multidisciplinary nature of environmental studies – Definition, Scope and Importance. Need for public awareness.

##### **Unit 2:**

Natural Resources.

Renewable and Non-renewable resources.

Natural resources and Associated Problems.

- (a) Forest Resources: Use and over exploitation, deforestation case studies. Timber extraction, mining, dams and their on forests and tribal people.

- (b) Water Resources: Use and Over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems.
- (c) Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
- (d) Food Resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer – pesticides problems, water logging, salinity, case studies.
- (e) Energy Resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
- (f) Land Resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
- (g) Role of an individual in conservation of natural resources.

### **Unit 3:**

#### Ecosystems :

- (a) Concept of an ecosystem.
- (b) Structure and function of an ecosystem.
- (c) Procedure, consumers and Decomposers.
- (d) Ecological Succession.
- (e) Food chains, food webs and ecological pyramids.
- (f) Introduction, Types, Characteristics, Features, Structures and Functions of the following ecosystem:-
  - (i) Forest Ecosystem.
  - (ii) Grass Land Ecosystem.
  - (iii) Desert Ecosystem.

- (iv) Aquatic Ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

**Unit 4:**

- (i) Biodiversity and its conservation: Introduction – Definition, genetics, species and ecosystem.
- (ii) Value of Biodiversity: Consumptive use, Productive use, Social Ethical, Aesthetic and Option values.
- (iii) Biodiversity at global, national and local levels.
- (iv) Hot-spots of biodiversity.
- (v) Threats to biodiversity: Habitat Loss, Poaching of wildlife, Man-wildlife conflicts.
- (vi) Endangered and endemic species of India.
- (vii) India as a mega-diversity nation.
- (viii) Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

**Unit 5:**

Environmental Pollution:

- (i) Definition
- (ii) Causes, effects and control measures of :-
  - (a) Air Pollution.
  - (b) Water Pollution.
  - (c) Soil Pollution.
  - (d) Marine Pollution.
  - (e) Noise Pollution.
  - (f) Thermal Pollution.



- (g) Nuclear Hazards.
- (iii) Solid Waste Management: Causes, effects and control measures of urban and industrial wastes.
- (iv) Role of an individual in prevention of pollution.
- (v) Pollution case studies.
- (vi) Disaster Management: Floods, Earthquake, Cyclone and Landslides.

### **Unit 6:**

Social Issues and the Environment:

- (a) From unsustainable to sustainable development.
- (b) Urban problems related to energy.
- (c) Water conservation, rain water harvesting, watershed management.
- (d) Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies.
- (e) Consumerism and water products.
- (f) Environment Protection Act.
- (g) Air (Prevention and Control of Pollution) Act.
- (h) Water (Prevention and Control of Pollution) Act.
- (i) Wildlife Protection Act.
- (j) Forest Conservation Act.
- (k) Issues involved in environment of environmental legislation, public awareness.

### **Unit 7:**

Human Populated and the Environment:

- (a) Population growth, variation among nations.
- (b) Population explosion – Family Welfare Programme.
- (c) Environment and Human Health.
- (d) Human Rights.
- (e) Value Education.
- (f) HIV/AIDS.
- (g) Women and Child Welfare.
- (h) Role of Information Technology in Environment and Human Health.

## Distribution of Marks in B.Sc. each Paper

S.No.	Subject Name	Theory Paper		Practical Paper	
		Max. Marks	Mini. Pass Marks	Max. Marks	Mini. Pass Marks
(i)	Physics	150	53	50	17
(ii)	Chemistry	150	53	50	17
(iii)	Botany	150	53	50	17
(iv)	Zoology	150	53	50	17
(v)	Mathematics	150	53	50	17
(vi)	Geology	150	53	50	17
(vii)	Geography	150	53	50	17
(viii)	Computer Science	150	53	50	17
(ix)	Economics	200	70	-----	-----
(x)	Statistics	150	53	50	17
(xi)	Bio-technology	150	53	50	17
(xii)	Industrial Chemistry	150	53	50	17
(xiii)	Industrial Microbiology	150	53	50	17
(xiv)	Seed Technology	150	53	50	17
(xv)	Military Studies	150	53	50	17
(xvi)	Still Photography	150	53	50	17
(xvii)	Clinical Nutrition & Dietetics	150	53	50	17
(xviii)	Microbiology	150	53	50	17