

# UNIVERSITY OF POONA

Circular No 191 of 1989

*Subject* :—Syllabus and text books in English at S.Y.B.Sc.

*Reference* :—This office circular No. 173 of 1986.

In pursuance of the decision taken by the University authorities it is hereby notified for the information of all concerned that the Syllabus and Text books in English at S.Y. B.Sc. as per circular No. 173 of 1986 will be continued for one more year i.e. 1989-90.

Ganeshkhind, Pune-411007  
Ref. No. CBA/1234  
Date : 17-7-1989

V. S. Pol  
for Registrar

Circular No. 136 of 1989

*Subject* :—F.Y., S.Y., T.Y.B.Sc. Geography

In pursuance of the decision taken by the University authorities it is hereby notified for the information of all concerned that the Syllabus of F.Y., S.Y., T.Y.B.Sc. Geography, is as enclosed in Appendix A.

The said syllabus will be implemented from June 1989.

Ganeshkhind, Pune-411007  
Ref. No. CBS/Geography/857  
Date : 25-4-1989

Sd/- X X X  
for Registrar

Gg 210 (S1) S.Y.B.Sc.

Economic Geography

No.	Topic	Sub-Topics	Periods
<b>Section I</b>			
1.	Nature of Economic Geography	( i ) Definition ( ii ) Nature ( iii ) Scope ( iv ) Purpose ( v ) Approaches	3
2.	Climatic regions	( i ) Climatic regions—definition ( ii ) Study of following climatic regions with relation to economic activities : ( a ) The Equatorial ( b ) The Monsoon ( c ) The Tropical deserts ( d ) The Mediterranean ( e ) The Boreal region	14

No.	Topic	Sub-Topics	Periods
		(ii) Soils	
		(a) Formation, composition, texture, horizons.	
		(b) Classification of soils based upon climate and vegetation with reference to following soils :	
		(1) Laterite (2) Prairie soils	
		(3) Chernozem and (4) Chestnut soils	
		Sub Topics	
		(iv) Types of vegetation: Equatorial and Coniferous types.	
3.	Economic activities	(i) Primary	4
		(ii) Secondary	
		(iii) Tertiary with examples	
4.	Types of agriculture	(i) Intensive subsistence	10
		(ii) Plantation agriculture	
		(iii) Commercial grain farming	
		(iv) Dairy farming	
		(v) Mediterranean farming	
5.	Crops	Food crops and cash crops, Geographical conditions and world distribution :	
		Rice, Wheat, Tea, Sugarcane, Cotton	9
			40
<b>Section II</b>			
6.	Minerals and Power resources	(a) Production and distribution of following Minerals and Power resources	14
		(i) Iron ore, U.S.A., U.S.S.R., India	
		(ii) Bauxite All countries.	
		(iii) Manganese Major Producing countries and India	
		(iv) Coal, U.S.S.R., U.S.A., W. Germany, China, India	
		(v) Hydro Power : U.S.A., U.S.S.R., Japan, Switzerland, India	
		(vi) Oil, S.W. Asian countries, India, U.S.A., U.S.S.R.	
		(b) Wind, Solar and nuclear energy	
7.	Industries	(i) Factors of localization: Raw Material, land, labour, capital, transportation facilities, power, resources.	14
		(ii) Location, production and world distribution of following industries :	
		(a) Iron and Steel industries-U.S.A., U.S.S.R., W. Germany, Japan, India.	
		(b) Cotton Textile-India, Japan, U.K.	
		(c) Sugar industries : All countries	
8.	Trade and Transport	(a) (i) Land Transport-merits, demerits	12
		(ii) Water Transport-Major, Navigable, rivers, lakes, ocean routes, of the world. Merits and demerits of water ways	
		(iii) Air-Transport, major routes, Merits and demerits	
		(b) Trade : Factors influencing trade, Types of Trade, regional, national and international, Foreign trade of India	
			40

*Reference Books*

- (1) Economic and Commercial Geography—R. S. Dubey and L. R. Singh.
- (2) Economic and Commercial Geography—Dasgupta.
- (3) Economic Geography—B. Arunachalam.
- (4) Economic Geography—N. J. Pounds.
- (5) Economic Geography—Jones and Darkerwald.
- (6) Economic Geography—J. Alexander.
- (7) Economic Geography—Robinson.
- (8) जगात आर्थिक व व्यापारी भूगोल—गुप्ते, करभकर, परांजवे.
- (9) Economic Geography—Leong Cheng.

**G 210 : Economic Geography***Books*

- (1) Economic Geography—J. Alexander.
- (2) Economic Geography—Johns and Darkerwald
- (3) Economic Geography—Robinson.
- (4) Economic Geography—Leong Cheng.
- (5) Economic Geography—N. J. Pounds.

S.Y.B.Sc. Gg. 220 : Environmental Science

Section 1 : 1st Term :

Units	Sub-Units	Content Areas	Periods
1. Introduction	(i) Nature	(i) (a) Interdisciplinary, Dynamic, Scientific	4
	(ii) Scope	(ii) (a) Purpose of environmental Science (b) Factors of environmental 1. Physical 2. Cultural	2
2. Ecosystem	(i) Concept	(i) (a) Organism, population, communities	2
	(ii) Structure	(ii) (a) Inorganic substances, organic substances, climate, producers, macro-consumers, micro consumers	2
	(iii) Functioning	(iii) (a) Energy circuits, food chains, webs, ecological niche	3
	(iv) Development and evolution	(b) Species interaction in an ecosystem competition, predation, symbiosis	3
	(v) Major types	(c) Nutrient, biochemical cycles oxygen, carbon, cycle, nitrogen cycle	3
		(iv) (a) Succession (b) Concept of climax (c) Dynamic steady state	3
3. Resources and Energy	(i) Resources (ii) Energy	(v) (a) Terrestrial ecosystem (b) Fresh water ecosystem (c) Marine ecosystem	6
		(i) (a) Type of resources (b) Processes of mineral formation (plate tectonic Biological weathering groundwater)	3
		(ii) (a) Formation of (a)-Coal (b) Oil (c) Natural Gas (b) Non-conventional energy farms (wind, wave solar, geothermal)	6

Section II :

1. Population

- (i) Factors affecting maximum population size  
 (i) 'J' curve  
 'S' curve  
 Biotic potential carrying capacity environmental resistance population crash  
 concept of over population and under optimum population

2

- (ii) Extrinsic and intrinsic limiting factors  
 (a) extrinsic factors : nutrients, climate, light, diseases, interaction between species  
 (b) intrinsic : territoriality, Social stress

3

- (iii) Human population

- (a) population explosion and historical aspect  
 (b) problems and remedies of over population

4

2. Pollution

- (i) Air  
 (ii) Water  
 (iii) Noise  
 (iv) Solid waste  
 (i) Pollutants, sources and effects  
 (ii) Pollutants, measures, B.O.D., C.O.D.  
 (iii) Difference between sound and noise measurement of noise  
 (iv) Bio-degradable and non-degradable solid waste

3

3

3

3

3. Environmental Hazards

- (i) Geophysical hazards  
 (ii) Biological hazards  
 (iii) Man-made hazards  
 (a) earthquake and volcanoes land fall, land erosion  
 (b) floods, droughts, cyclones, heatwave, coldwave  
 (a) Problem of weeds  
 (b) problem of pests

8

- (iii) Problems created due to human interference  
 (a) due to over exploitation of resources  
 (b) due to mis-management  
 (c) due to technological advance ( nuclear )  
 for all the four resources

6

4. Conservation of Resources

- (i) Conservation of Soil  
 (ii) Conservation of water  
 (iii) Conservation of animal  
 (iv) Conservation of forest

- (a) causes of destruction  
 (b) effects  
 (c) measures to conserve and develop

6

5. Environmental Management and Planning

- (i) management  
 (ii) Planning  
 (a) need for management and planning  
 (b) Micro level and meso level planning  
 (c) short term and long term planning

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List of Books :

- (1) Man and his Environment— I. P. Singh  
 (2) Introduction to Environmental Science—I. M. Moray  
 (3) An Introduction to Environmental System—G. H. Dury  
 (4) Environmental Resources, Pollution, Society—William W. Murach  
 (5) Environmental Science Part I and Part II—Ahirrao and Others  
 (6) "पर्यावरण शास्त्र"—श्री. अहिरेकर आणि इतर

S.V.B.Sc. Practical

Gg. 201 : Map Projection, Surveying and Field Excursion  
(One practical per week . . 4 periods of 45 minutes each )

Unit	Sub-Units	Areas to be developed	Periods
(A) Map Projection	1. Classification of Projections Perspective, Non-perspective, Zenithal, Conical, Cylindrical and Conventional, Their Characteristics and properties 2. Construction ( by pract'cal methods only ) and study of following projection (a) (i) Zenithal ( anomonic ) (ii) Zenithal Polar Steriographic (iii) Zenithal Polar Orthographic (b) (i) Conical ( One standard parallel ) (ii) Conical ( two standard parallel ) (iii) Bonne's equal area projection (c) (i) Cylindrical projections equal area (ii) Cylindrical equal distant projection (iii) Mercators Projection (d) Conventional projection (i) Mollweide's projection (ii) Sinusoidal projection	To acquire the knowledge about projection To know the various types of projections To acquire the skill of drawing different projection To know the properties and characteristics of different projections	10 8
(B) Surveying	Choice of projections 1. Principles of Surveying and types of Survey (i) Geodetic and Plane Table Survey (ii) First, Second and Third order Survey 2. Plane table Survey : radiation and inter section method	To know the importante and usefulness of different projection To acquire the knowledge of Surveying To know the various types of Survey To acquire the skill of doing Survey by Plane Table To know the various methods of plane Table Survey	4 4 4 4 <hr/> 40

3. Prismatic compass Survey-Whole circle and quadrant methods of plotting of bearings, open and closed traverse, closing of errors	To acquire the skill of doing Survey by Prismatic Compass ( To know the mechanism of Prismatic Compass ) To know the various of plotting the bearings To know and Practice the various methods of Prismatic Compass Survey To acquire the Skill of closing of errors	12
4. Levelling with the help of a dumpy level ( i ) Collimation method ( ii ) Rise and fall method	To acquire the skill of doing Survey with Dumpy level ( To know the mechanism of Dumpy level ) To know and Practice the various methods of Survey done by Dumpy level	10
5. Contouring with the help of Indian Clinometer	To know the mechanism of Indian clinometer To acquire the skill of taking reading with Indian Clinometer	6

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6. Excursion	Visit to a place of Geographical interest and submission of its report	To know the knowledge of other places
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Weightage to the topic Practical will last for more than 4 hours

A : 40 marks

B : 40 marks

C : Oral, Journal, excursion Report -- 20 marks

**Books :**

- (1) Map Projection : Kellaway
- (2) Map Projection : Steers
- (3) Map work and Practical Geography ? Singh and Dutta
- (4) Surveying and Levelling : Kanitkar and Kanitkar

## UNIVERSITY OF POONA

Circular No. 189 of 1989

**Subject :—B.Sc. Defence Studies Revised Syllabus**

In pursuance of the decision taken by the University authorities, it is hereby notified for the information of all concerned that the revised Syllabus of Defence Studies at F.Y., S.Y. and T.Y.B.Sc. is as given in enclosure.

This syllabus is implemented from June, 1989.

Ganeshkhind, Pune-411007 }  
 Ref. No. CBH/1232 }  
 Date : 17-7-1989 }

Sd/- X X X  
 for Registrar.

**S.Y.B.Sc. Course 4 : THEORY AND PRACTICE OF WAR***Section I :*

- (1) War : Approacher, Meaning, function, Causes.
- (2) Principles of war.
- (3) Operations of war : Advance to contact; Attack; Defence and Withdrawal.
- (4) Role and Scope of Intelligence in war and peace.
- (5) Importance of coordination and cooperation of Army, Navy and Air Force in war.

*Section II :*

- (6) World War I : Strategy Doctrines and Organisation (Including French warfare, Tank warfare and Gas warfare).
- (7) World War II : Strategy, Doctrines and Organisation (including Blitzrig, Air Power, Submarines).
- (8) Limited War and Total War : Meaning and Concept.
- (9) Insurgency and Counter Insurgency.
- (10) Concept of Mechanised Infantry and Mechanical Warfare.

*Reference Books*

- (1) Brodie B.—*Strategy in the Missile Age.*
- (2) Earle E. M.—*Makers of Modern Strategy.*
- (3) Falls Cyril :—*Hundred years of War.*
- (4) Houard M.—*Theory and Practice of War.*
- (5) Montgomery—*History of warfare.*



**S.Y.B.Sc. Course 5 : NATIONAL SECURITY***Section I :*

- (1) National Interest and National Security—Concepts and role in making of foreign policy.
- (2) National Power :
  - (i) Elements of National Power
  - (ii) Evaluation of National Power.
- (3) Models of National Security :
  - (i) Balance of Power—Meaning types, characteristics methods and evaluation
  - (ii) Collective security—meaning de foundations and evaluation.
  - (iii) Regional Defence Organisations—Military Alliances.
- (4) Arms control and Disarmament—Meaning objective and efforts at arms control before and after.
- (5) Nonalignment : Meaning and evolution with special reference to NAM Conferences (Belgrade 1961, Cairns 1964, Lasaka 1976, Algiers 1973, Colombo, 1976, Havana 1979, New Delhi 1983, Harave 1986 ).

*Section II :*

- (6) India's foreign and Defence Policy—National Interest, Goals and Objectives foundations.
- (7) India's role as in Nonaligned movement.
- (8) India and South Asia :
  - (i) Indo-Pakistan Relations ( Special reference to border problem, Kashmir and Nuclear Science )
  - (ii) India's relations with Nepal, Bangladesh and Shrilanka.
  - (iii) India and SAARC.
- (9) India China Relations ( Special reference to Border and Tibet ).
- (10) India's relations with super powers.
- (11) India's Indian Ocean Policy.
- (12) India's Nuclear Policy.

*Books*

- (1) Palmer and Perkins—*International Relations*.
- (2) Chopra Surendra—*Studies in Indian Foreign Policy*.
- (3) Bimal Prasad—*Studies in Indian Foreign Policy*.
- (4) K. Subramanyam—*Our National Security*.
- (5) वसंत रायपूरकर—आंतरराष्ट्रीय संबंध

**S.Y.B.Sc. Course 6 : INTERNATIONAL RELATIONS***Section I :*

- (1) Consequences of World War II
- (2) Cold War :
  - (i) Causes and Evolution ( 1945-1962 )
  - (ii) Growth of Military Alliances
- (3) Defents :
  - (i) Decline of Cold War
  - (ii) Growth of Deterte
- (4) United Nations :
  - (i) Organisation
  - (ii) Contribution to maintenance of peace and security
- (5) New International a Economic War—Concept and meaning

*Section II :*

- (6) Uses in International Relations
  - (i) US-USSR relations
  - (ii) US-China relations
  - (iii) USSR-China relations
- (7) Nonalignment :
  - (i) Concept and meaning
  - (ii) Role in international relations
- (8) Rise of nationalism in Asia and Africa
- (9) West Asia :
  - (i) Arab-Israel conflict
  - (ii) Iran-Iraq conflict
- (10) Indo-China : Developments since 1945

*Books .*

- (1) Peter Calvoscreci—World Politics since 1945
- (2) M. G. Gupta—International Relations Part II
- (3) वि. मा. बाबल—मातृराष्ट्रीय संबंध १९४६-१९७४

## UNIVERSITY OF POONA

Circular No. 282 of 1989

*Subject :—Changes in F.Y. and S.Y.B.Sc. Botany Syllabus*

In pursuance of the decision taken by the University authorities, it is hereby notified for the information of all concerned that the changes in F.Y. and S.Y.B.Sc. Botany are as given in Appendix "A".

The above said changes will be effective from this year.  
Ganeshkhind, Pune-411007

Ref. No. CBS/Botany/1676

Dated : 9-10-1989

V. S. Pol  
for Registrar**Change in F.Y.B.Sc. and S.Y.B.Sc. Botany Syllabus**

Over the last year(s) it has been observed by teachers teaching the F.Y.B.Sc. and S.Y.B.Sc. course in Botany that there are

- (1) Some overlapping of topic(s) and
- (2) Some topics have been with many details which can not be given justice in the time available, therefore the B.O.S. in Botany held on 28-3-1989 resolves that the following portion(s) in Theory and Practicals in the syllabus be deleted or corrected for teaching the subject, From June, 1989.

The details of this are as follows :

S.Y.B.Sc.

Deletions and Corrections from S.Y.B.Sc. : SYLLABUS

BOTANY PAPER I

Phytochemistry and Plant Physiology

First Term—Phytochemistry

DELETION

- A-1 1.2 An outline of metabolic pathways leading to the formation of primary and secondary metabolites.  
 7.2 (a) T C A cycle  
 1.2 (b) C A M  
 7.2 (c) Calvin  
 1.2 (d) R-oxidation  
 3.2 Proteins—configuration should be explained  
 3.4 Glucosides—Digitalis, Senna, Soapnut, dhurin  
 3.6 Organic acids—Lactic acid, Tartaric acid.

CORRECTION

- A-1 1 instead of 2  
 B-2 2 instead of 4  
 C-3-1 6 instead of 8  
 3.2 3 instead of 4  
 3.3 3 instead of 4  
 3.5 3 instead of 4  
 3.10 2 instead of 3

Second Term : PHYSIOLOGY

DELETION

- H Photosynthesis (entire topic)  
 I Respiration (entire topic)

CORRECTION

*N.B. :—Number of periods allotted to :*

- G Ascent of sap—4 instead of 3  
 L Photoperiodism and Vernalization 6 instead of 5

PHYTOCHEMISTRY

CORRECTION

*Read as follows :*

- 4 Extraction of leaf-pigments and their separation by paper chromatography.  
 5 Detection of anthocyanin pigments.

PHYSIOLOGY

DELETION

7. To determine the rate of photosynthesis in aquatic plants (*Hydrilla*) by varying (i) light intensity, (ii) amount of dissolved CO<sub>2</sub> in water.

(v) Thin layer chromatography (TLC).

5-6-7 (ix) CO<sub>2</sub> necessary for photosynthesis.

**CORRECTION**

(vii) Kuhne's tube.

*N.B.* :—Under plant-physiology-practicals there will be 5 lab exercises instead of 7 out of which exercise No. 2, 3 and 4 will be major experiments and exercise No. 5 will include demonstration experiments.

**BOTANY-PAPER II****GYMNOSPERM, ANGIOSPERM TAXONOMY AND APPLIED BOTANY****First Term : GYMNOSPERMS AND ANGIOSPERMS TAXONOMY****DELETION**

- |     |                         |
|-----|-------------------------|
| B-3 | Study of plant families |
| 4   | Meliaceae               |
| 9   | Umbelliferae            |
| 16  | Palmae                  |

**CORRECTION**

*N.B.* :—Number of periods allotted to.

- |     |   |
|-----|---|
| B-3 | Study of plants families-14 periods instead of 20 |
|-----|---|

**Second Term : APPLIED BOTANY****DELETION**

- |     |                                |
|-----|--------------------------------|
| B-2 | Azotobacter and                |
| F   | Social forestry (entire topic) |

**CORRECTION**

*N.B.* :—Number of periods allotted to :

- |   |                |
|---|----------------|
| B | 3 instead of 4 |
|   | 5 instead of 6 |

**Practicals : GYMNOSPERMS AND ANGIOSPERMS TAXONOMY****CORRECTION**

Botanical excursions be treated as equivalent to three practicals (Lab. exercises)

**Practicals : APPLIED BOTANY****DELETION**

- |     |             |
|-----|-------------|
| 4.a | Azotobacter |
|-----|-------------|

**CORRECTION**

- |     |  |
|-----|--|
| 2.1 | Mixture of Lakhni dal in gram/Tur (i) Macroscopic detection (ii) Microscopic detection (iii) Chemical detection. |
|-----|--|

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