

Controller of Examinations
SAMBALPUR UNIVERSITY
JYOTI VIHAR, BURLA
Sambalpur (Odisha), PIN- 768 019



PHONE and Fax:0663-2430806
e-mail: coesuniv@gmail.com

Urgent

Addendum

(Both by post and by e-mail)

No. 916 / Acd.-I

Dated: 03/02/17

To

The Principals,
(All the Affiliated Colleges under Sambalpur University having
Three Year Degree Courses excluding Autonomous Colleges.)

Sub: Syllabus & Implementation of CBCS pattern Arts/Science/Commerce (Pass and
Hons.) from the Academic Session 2016-17.

Ref :- This office letter letter No. 9324/Acd.-I dated 8.16.16.

Sir,

In continuation to the letter and the subject cited above, I am directed to forward here with
a copy of approved structure for mark distribution of AECC – Environmental Science for + 3 degree
courses under CBCS .

It may be made available / notified to teachers and students concerned.

Any error and omission etc. may kindly be intimated to this office.

. Any queries on the matter may be made through e-mail: coesuniv@gmail.com.

Thanking you,

Yours faithfully,

Encl:- As above

R.K. Choudhary
20/1/17
Controller of Examinations

P.T.O.

Memo No. 917 /Acad.-I(BOS), dtd. 03-02-17

Copy forwarded with enclosure for information and necessary action to:

1. The Chairman, Post Graduate Council, Sambalpur University.
2. The H.O.D, P.G. Department of Environmental Science. , Sambalpur University..
3. The Director, College Development Council, Sambalpur University.
4. The Director, Directorate of Distance and Continuing Education, Sambalpur University.
5. The Co-ordinator, Private Examination Cell, Sambalpur University.
6. Asst. Registrar (Examination), Sambalpur University.
7. Programmer, University Computer Unit, Sambalpur University.
8. Asst. Controller of Examinations, Sambalpur University.
9. Section Officer / Assistant –in- Charge, *e – Governance Cell*, Sambalpur University with request to provide all the materials in the official web- site accordingly. (as + 3 cbcs- syllabus – *Environmental Science*. –Final)
10. Section Officers, Computer Unit, E.G.-I , EG-II , E.C.- I , EC-II,EC- VI Sections.
11. Five spare Copies for Academic-I Sections with enclosure.

f.k.w.
20/1/17
Controller of Examinations

Memo No. 918 /Acad.-I(BOS), dtd. 03-02-17

Copy forwarded without enclosure for information and necessary action to:

1. *The Dy. Director, e – Governance Cell*, Sambalpur University with request for needful to provide all the materials in the official web- site accordingly.
2. P.A. to the Vice- Chancellor, Sambalpur University.
3. P.A. to the Registrar, Sambalpur University.
4. P.A. to the Controller of Examinations, Sambalpur University.

f.k.w.
20/1/17
Controller of Examinations

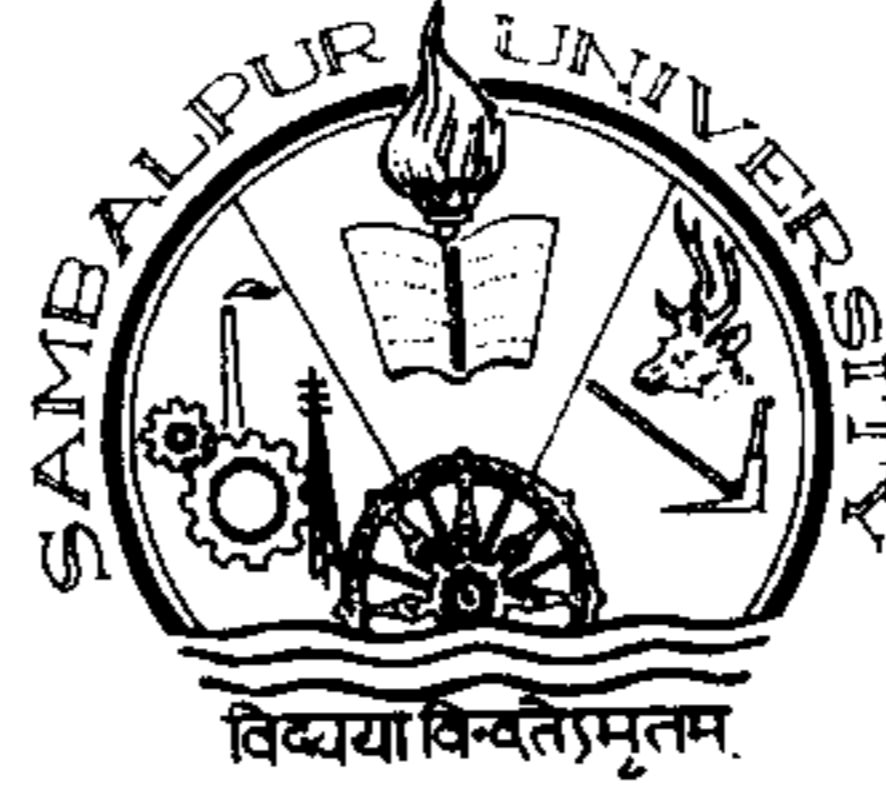
**MARK DISTRIBUTION OF AECC – ENVIRONMENTAL STUDIES UNDER C.B.C.S.
EFFECTIVE FROM 2016-17 SESSION**

Credit Hours	-	02
Full Marks	-	50
Time	-	2 Hours.

Q. 1 . Compulsory questions (10 nos.). Each question carries 01 mark.
The questions will be distributed over the four units.

Q.2, 3, 4, 5 are long type questions each carrying 10 marks and will be set from Units I, II, III, IV respectively. Each question will have two bit questions of 5 marks each. For each unit there should be one alternate question and the candidate will answer only one question.

Controller of Examinations
SAMBALPUR UNIVERSITY
JYOTI VIHAR, BURLA
Sambalpur (Odisha), PIN- 768 019



PHONE and Fax:0663-2430806
e-mail: coesuniv@gmail.com

Urgent

(Both by post and by e-mail)

No. 9324 / Acd.-I

Dated: 08/12/16

To

The Principals,
(All the Affiliated Colleges under Sambalpur University having
Three Year Degree Courses excluding Autonomous Colleges.)

Sub: Syllabus & Implementation of CBCS pattern in **Arts/Science/Commerce (Pass and Hons.)** courses from the Academic Session **2016-17**.

Ref :- This office letter No 5314/ Acd-I dated 21.7.16 and letter No. 5970/Acd.-I dated 8.8.16.

Sir,

In continuation to the letters and the subject cited above, I am directed to intimate you that the Vice- Chancellor has been pleased to approve the syllabus for Courses / papers related to **Environmental Science** for CBCS + 3 courses degree B.A./B.Sc/B.Com.(A.E.C.C) examinations under 6 (15) of O.U. Act -1989 giving it effect from the Academic Session, 2016-17. The detail Courses of Studies is enclosed herewith for your reference and necessary action.

This may kindly be noted that it is the final syllabus for **Environmental Science** subject/ papers under CBCS pattern. It may be made available to teachers and students concerned. Further you are requested to ensure teaching of the courses in your colleges accordingly.

Any error and omission etc. may kindly be intimated to this office.

. Any queries on the matter may be made through e-mail: coesuniv@gmail.com.

Thanking you,

Yours faithfully,

Encl: *As above*

S.K.N.S
07/12/16
Controller of Examinations
S.K.N.S

P.T.O.

Memo No. 9325 /Acad.-I(BOS),

dtd. 08/12/16

Copy forwarded with enclosure for information and necessary action to:

1. The Chairman, Post Graduate Council, Sambalpur University.
2. The H.O.D., P.G. Department of **Environmental Science**, Sambalpur University.
3. The Director, College Development Council, Sambalpur University.
4. The Director, Directorate of Distance and Continuing Education, Sambalpur University.
5. The Co-ordinator, Private Examination Cell, Sambalpur University.
6. Asst. Registrar (Examination), Sambalpur University.
7. Programmer, University Computer Unit, Sambalpur University.
8. Asst. Controller of Examinations, Sambalpur University.
9. Section Officer / Assistant –in- Charge, **e – Governance Cell**, Sambalpur University with request to provide all the materials in the official web- site accordingly. (as + 3 cbcs- syllabus – **Environmental Science –Final**)
10. Section Officers, Computer Unit, E.G.-I, EG-II, E.C-I, EC-II, EC-VI Sections.
11. Five spare Copies for Academic-I Sections with enclosure.

S.K.M
07/12/16
Controller of Examinations
S.K.M

Memo No. 9326 /Acad.-I(BOS),

dtd. 08/12/16

Copy forwarded without enclosure for information and necessary action to:

1. **The Dy. Director, e – Governance Cell**, Sambalpur University with request for needful to provide all the materials in the official web- site accordingly .
2. P.A. to the Vice- Chancellor, Sambalpur University.
3. P.A. to the Registrar, Sambalpur University.
4. P.A. to the Controller of Examinations, Sambalpur University.

S.K.M
07/12/16
Controller of Examinations
S.K.M

Sn//-

Unit 1: Ecosystems, Biodiversity and Conservation

Multidisciplinary nature of environmental studies; What is an ecosystem, Structure and function of ecosystem; Energy flow in an ecosystem; food chains, food webs, Examples of some terrestrial and aquatic ecosystems
Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value. Levels of biological diversity: genetic, species and ecosystem diversity. Biodiversity patterns and global biodiversity hot spots, India as a mega-biodiversity nation. Endangered and endemic species of India. Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit 2: Natural Resources and Sustainable Development

Land resources and land use change; Land degradation, soil erosion and desertification; Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations; Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state); Energy resources: Renewable and non renewable energy sources, use of alternate energy sources. Scope and importance, concept of sustainability and sustainable development

Unit 3: Environmental Pollution, Policies & Practices

Environmental pollution: types, causes, effects and controls; Air, water, soil, noise, solid waste Pollution and their control and management:
Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture; Environment Laws: Salient features of Environment Protection Act, Air (Prevention & Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD); Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context

Unit 4: Human Communities and the Environment

Human population growth; Impacts on environment, human health and welfare.; Resettlement and rehabilitation of project affected persons. Disaster management: floods, earthquake, cyclones and landslides; Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan; Environmental ethics: Role of Indian and other religions and cultures in environmental conservation; Environmental communication and public awareness.

P.T.O.

Sasaly
19/9/16

J. K. Sanyal
19/9/16

[Signature]
19/9/16

[Signature]
19.9.16

Suggested Readings:

1. Dash, M.C. 2010-Fundamentals of ecology, Mc- Graw Hill
2. Mishra.P.C.-Fundamentals of Air and Water Pollution, Ashish Publ., New Delhi
3. Mishra.P.C. and Dash, M.C. 2000.-Man and Environment, Mac Millan Publ., New Delhi
4. Trivedy and Raj- Environmental Energy Resources, Akash Deep, New Delhi
5. Goel-Air Pollution, Techno science
6. Goel and -Water Pollution, Causes, effect and Control, New age International
7. CPCB- Pollution Control: Acts, Rules and Notifications, CPCB, New Delhi
8. Agrawal, K.C.-Environmental Laws: New Perspectives, Nidhi Publishers, Bikaner
9. Agrawal, K.C.-Wildlife of India, Conservation and mAngement, Nidhi Publishers
10. Singh, G.-environmental Lws in India, Quality Law books
11. Trivedy & Raj- Solid waste Pollution, Akash Deep Publ. House, New Delhi
12. Odum, E.P., Odum, H.T. & Andrews, J. 1971- *Fundamentals of Ecology*, Philadelphia: Saunders.
13. Singh, J.S., Singh, S.P. and Gupta, S.R. 201 - *Ecology, Environmental Science and Conservation*, S. Chand Publishing, New Delhi.
14. Ramade, F. Ecology of Natural Resources, John Wiley & Sons
15. Pepper, I.L., Gerba C.P & Brusseau M.L. 2011 *Environmental and Pollution Science* Academic Press
16. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
17. Warren, C. E. 1971. *Biology and Water Pollution Control*, WB Saunders.
18. Gleick, P. H. 1993. *Water in Crisis*, Pacific Institute for Studies in Dev., Environment & Security, Stockholm Env. Institute, Oxford Univ. Press
19. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*, Oxford and IBH Publishing Co. Pvt. Ltd.
20. Sengupta, R. 2003. *Ecology and economics: An approach to sustainable development*, OUP.