**KGiSL Institute of Technology**

**Department of Information Technology**

**Lesson plan (Micro level)**

Faculty Name : Mr. S. Rajasekaran Designation : Assistant Professor

Subject -Name : Environmental Science and Engineering Subject Code :GE8291 (C215)

Academic Year : 2018-2019 Sem/Year : II/IV

**COURSE OUTCOMES**

Upon completion of the course, the student should be able to:

1. C215.1: Knowledge about environment and geological classifications and importance.
2. C215.2: Knowledge about pollution and seriousness of environment.
3. C215.3: Public awareness of environment at infant stage.
4. C215.4: Ignorance and incomplete knowledge has lead to misconceptions.
5. C215.5: Development and improvement in standard of living has lead to serious
6. Environmental disasters.

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| **Unit I-**  **ENVIRONMENT, ECOSYSTEMS AND BIODIVERSITY** | | | | | | | | | |
| **Topics** | | Planned Date | Mode of Teaching | | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Definition, Scope and Importance of Environment – Need for Public Awareness | 15/12/18 | PPT | | T1,W1 | C215.1 |  |  |  |
| 2 | Concept of an Ecosystem – Structure and Function of an Ecosystem | 18/12/18 | PPT | | T1,W1 | C215.1 |  |  |  |
| 3 | Producers, Consumers and Decomposers | 19/12/18 | PPT | | T1,W1 | C215.1 |  |  |  |
| 4 | Energy Flow in the Ecosystem | 21/12/18 | PPT | | T1,W1 | C215.1 |  |  |  |
| 5 | Ecological Succession | 22/12/18 | PPT | | T1,W2 | C215.1 |  |  |  |
| 6 | Food Chains, Food Webs and Ecological Pyramids | 26/12/18 | PPT | | T1,W2 | C215.1 |  |  |  |
| 7 | Introduction, Types, Characteristic Features, Structure and Function of the (A) Forest Ecosystem | 27/12/18 | PPT | | T1,W2 | C215.1 |  |  |  |
| 8 | Grassland Ecosystem (C) Desert Ecosystem | 28/12/18 | PPT | | T1,R1 | C215.1 |  |  |  |
| 9 | Aquatic Ecosystems (Ponds, Streams, Lakes, Rivers, Oceans, Estuaries) – Introduction to Biodiversity | 02/01/19 | PPT | | T1,R2 | C215.1 |  |  |  |
| 10 | Bio geographical Classification of India | 03/01/19 | PPT | | T1,R2 | C215.1 |  |  |  |
| 11 | Value of Biodiversity: Consumptive Use, Productive Use, Social, Ethical, Aesthetic and Option Values | 04/01/19 | PPT | | T1,R2 | C215.1 |  |  |  |
| 12 | Biodiversity at Global, National and Local Levels | 05/01/19 | PPT | | T1,R2 | C215.1 |  |  |  |
| 13 | India as a Mega-Diversity Nation, Hot-Spots of Biodiversity | 07/01/19 | PPT | | T1,W2 | C215.1 |  |  |  |
| 14 | Threats to Biodiversity: Habitat Loss, Poaching of Wildlife, Man-Wildlife Conflicts – Endangered and Endemic Species of India | 09/01/19 | PPT | | T1,R1 | C215.1 |  |  |  |
| 15 | Conservation of Biodiversity: In-Situ and Ex-Situ Conservation of Biodiversity. | 10/01/19 | PPT | | T1,R1 | C215.1 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 14 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **14** | | | |
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| **Unit II-**  **ENVIRONMENTAL POLLUTION** | | | | | | | | | |
| **Topics** | | Planned Date | Mode of Teaching | | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Air Pollution, Water Pollution | 11/01/19 | PPT | | T2,R2 | C215.2 |  |  |  |
| 2 | Soil Pollution, Marine Pollution | 12/01/19 | PPT | | T2,R4 | C215.2 |  |  |  |
| 3 | Noise Pollution, Thermal Pollution | 18/01/19 | PPT | | T2,R4 | C215.2 |  |  |  |
| 4 | Nuclear Hazards | 21/01/19 | PPT | | T2,R1 | C215.2 |  |  |  |
| 5 | Soil Waste Management | 22/01/19 | PPT | | T2,R1 | C215.2 |  |  |  |
| 6 | Role of an Individual in Prevention of Pollution | 23/01/19 | PPT | | T2,R3 | C215.2 |  |  |  |
| 7 | Pollution Case Studies | 24/01/19 | VC | | T2,R2 | C215.2 |  |  |  |
| 8 | Disaster Management: Floods, Earthquake, Cyclone and Landslides | 23/01/19 | PPT | | T2,R1 | C215.2 |  |  |  |
| 9 | **Lead Poisoning** | 23/01/19 | VC | | W2 | C215.2 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 8 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **9** | | | |
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| **Unit III-**  **NATURAL RESOURCES** | | | | | | | | | |
| **Topics** | | Planned Date | | Mode of Teaching | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Forest Resources: Use and Over-Exploitation, Deforestation, Case Studies - Timber Extraction, | 25/01/19 | | PPT | T1,R1 | C215.3 |  |  |  |
| 2 | Mining, Dams and Their Effects on Forests and Tribal People | 04/02/19 | | PPT | T1,R3 | C215.3 |  |  |  |
| 3 | Water Resources: Use and Over-Utilization of Surface and Ground Water, Floods, Drought, Conflicts Over Water, Dams-Benefits and Problems | 05/02/19 | | PPT | T1,R2 | C215.3 |  |  |  |
| 4 | Mineral Resources: Use and Exploitation, Environmental Effects of Extracting and Using Mineral Resources. Case Studies | 06/02/19 | | PPT | T1,R1 | C215.3 |  |  |  |
| 5 | Food Resources: World Food Problems, Changes Caused by Agriculture and Overgrazing, Effects of Modern Agriculture, | 07/02/19 | | PPT | T1,R4 | C215.3 |  |  |  |
| 6 | Fertilizer-Pesticide Problems, Water Logging, Salinity. Case Studies | 09/02/19 | | PPT | T1,R1 | C215.3 |  |  |  |
| 7 | Energy Resources: Growing Energy Needs, Renewable and Non Renewable Energy Sources, Use of Alternate Energy Sources. Case Studies | 11/02/19 | | PPT | T1,R3 | C215.3 |  |  |  |
| 8 | Land Resources: Land as a Resource, Land Degradation, Man Induced Landslides, Soil Erosion and Desertification | 12/02/19 | | PPT | T1,R2 | C215.3 |  |  |  |
| 9 | Role of an Individual in Conservation of Natural Resources | 13/02/19 | | C&B | T1,R4 | C215.3 |  |  |  |
| 10 | Use of Resources for Sustainable Lifestyles. | 14/02/19 | | PPT | T1,R1 | C215.3 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 10 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **10** | | | |
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| **Unit IV-**  **SOCIAL ISSUES AND THE ENVIRONMENT** | | | | | | | | | |
| **Topics** | | Planned Date | | Mode of Teaching | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | From Unsustainable to Sustainable Development – Urban Problems Related to energy | 16/02/19 | | PPT | T2,R4 | C215.4 |  |  |  |
| 2 | Water Conservation, Rain Water Harvesting, Watershed Management – Resettlement and Rehabilitation of People | 18/02/19 | | PPT | T2,R4 | C215.4 |  |  |  |
| 3 | Role of Non-Governmental Organization- Environmental Ethics: Issues and Possible Solutions | 19/02/19 | | PPT | T2,R4 | C215.4 |  |  |  |
| 4 | Climate Change, Global Warming, Acid Rain, Ozone | 20/02/19 | | PPT | T2,R1 | C215.4 |  |  |  |
| 5 | Layer Depletion, Nuclear Accidents a nd Holocaust, Case Studies. | 21/02/19 | | PPT | T2,R3 | C215.4 |  |  |  |
| 6 | Wasteland Reclamation – Consumerism and Waste Products, Environment Production Act– Air (Prevention And Control Of Pollution) Act | 04/03/19 | | PPT | T2,R2 | C215.4 |  |  |  |
| 7 | Water (Prevention And Control Of Pollution) Act – Wildlife Protection Act – Forest Conservation Act, Enforcement Machinery Involved in Environmental Legislation- Central and State Pollution Control Boards- Public Awareness. | 05/03/19 | | PPT | T2,R2 | C215.4 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 7 | | | |
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| **Unit V -**  **HUMAN POPULATION AND THE ENVIRONMENT** | | | | | | | | | |
| **Topics** | | Planned Date | | Mode of Teaching | Reference | Course Outcome | Actual  Date | Day Order /Hour | Remarks |
| 1 | Population Growth, Variation Among Nations | 07/03/19 | | PPT | T2,R3 | C215.5 |  |  |  |
| 2 | Population Explosion | 08/03/19 | | PPT | T2,R2 | C215.5 |  |  |  |
| 3 | **Population Explosion in China** | 08/03/19 | | PPT | W2 | C215.5 |  |  |  |
| 4 | Family Welfare Programme | 09/03/19 | | PPT | T2,R1 | C215.5 |  |  |  |
| 5 | Environment and Human Health – Human Rights – Value Education | 12/03/19 | | PPT | T2,R1 | C215.5 |  |  |  |
| 6 | HIV / AIDS – Women and Child Welfare | 13/03/19 | | PPT | T2,R4 | C215.5 |  |  |  |
| 7 | Role of Information Technology in Environment and Human Health – | 13/03/19 | | PPT | T2,R4 | C215.5 |  |  |  |
| Total No. of Hours prescribed per Unit by Anna University | | | | | | 6 | | | |
| Total No. of Hours Required as per Lesson Plan | | | | | | **7** | | | |
| Signature of Faculty | | | Signature of HOD | | | | | | |
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| |  |  |  |  | | --- | --- | --- | --- | | **Total No. of Hours prescribed by Anna University for Completion of the Course** | | | **45** | | **Total No. of Hours Required as per Lesson Plan to complete the Course** | | | **47** | | No. of Hours Required for covering Content Beyond Syllabus | | | **2** | | **Total No. of Lecture Hours for Completion of the Course** | | | **47** | |  | | | | | **Prepared by** | Name : Mr. S. Rajasekaran  Designation : Assistant Professor | Sign | | | **Approved by** | Name : Dr.G.Vijaya  Designation : Professor & Head | Sign | |   **TEXT BOOKS:**  T1. Gilbert M. Masters, ―Introduction to Environmental Engineering and Science‖, Second Edition, Pearson Education 2004.  T2. Benny Joseph, ―Environmental Science and Engineering‖, Tata McGraw-Hill, 2006 | | | | | | | | | |
| **REFERENCE BOOKS:**  R1. R.K. Trivedi, ―Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards‖, Vol. I and II, Enviro Media.  R2. Cunningham, W.P. Cooper, T.H. Gorhani, Environmental Encyclopedia‘, Jaico Publishing, 2001.  R3. Dharmendra S. Sengar, ―Environmental law‖, Prentice Hall, 2007.  R4. Charles N. Fischer, Richard. J. LeBlanc, “Crafting a Compiler with C”, Pearson Education, 2008.  R5. Rajagopalan.R, ―Environmental Studies-From Crisis to Cure‖, Oxford University Press 2005 | | | | | | | | | |
| **WEB REFERENCES:**  W1. https://nptel.ac.in/courses/122102006/10  W2. https://youtube.com | | | | | | | | | |
| **MODE OF TEACHING:**  **C&B**- Chalk & Board  **PPT-**Power Point Presentation  **VC**-Video clipping | | | | | | | | | |
| **CONTENT BEYOND SYLLABUS (CBS)**  1. Lead Poisoning.  2. Population explosion in china and problems. | | | | | | | | | |

**Faculty HOD Principal**