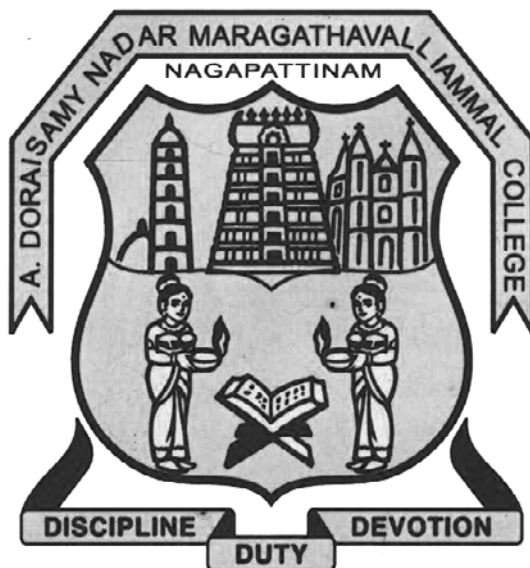


**DEPARTMENT OF BIOCHEMISTRY**

**U.G. PROGRAMME**

**SYLLABUS**

**2018 – 2021 BATCH  
II SEMESTER**



**A. D. M. COLLEGE FOR WOMEN  
NAGAPATTINAM**

SEMESTER II  
CORE COURSE – II

இடைக்கால இலக்கியமும் புதினமும்

அகமதிப்பீடு - 25  
புறமதிப்பீடு - 75  
மொத்த மதிப்பெண் - 100

பயிற்று மணிகள் - 6  
தரப்பள்ளிகள் - 3  
தேர்வு மணிகள் - 3

நோக்கம் :

1. சமய இலக்கியத் தோற்றத்திற்கான வரலாற்றுப் பின்புலத்தை அறிவித்தல்.
2. தமிழ் சைவ, வைணவ இலக்கியங்களை அறிமுகப்படுத்தல்.
3. தமிழ் மொழியின் செம்மொழிப் பண்புகளை அறியச் செய்தல்.
4. தமிழ்ச் சிற்றிலக்கியங்களின் இலக்கியச் சிறப்பைக் கற்பித்தல்.

அலகு - 1

பன்னிருதிருமுறைகள்

1. திருநாவுக்கரசர்தேவாரம் - திருப்பூந்துருத்தி (திருஅங்கமாலை)
2. சுந்தரர்தேவாரம் - திருவையாற்றுப் பதிகம்
3. மாணிக்கவாசகர் திருவாசகம் - சிவபுராணம்

அலகு - 2

நாலாயிரதிவ்வியப் பிரபந்தம்

1. பெரியாழ்வார் திருமொழி - நற்றாய் புலம்பல்
2. தொண்டரடிப்பொடியாழ்வார் - திருமாலை
3. மதுரகவியாழ்வார் - கண்ணிருண்சிறுத்தாம்பு

அலகு - 3

(அ) முத்துக்குமாரசாமி பிள்ளைத்தமிழ் : 2 பாடல்கள்

1. செங்கீரைப்பருவம் - பாடல் 8 - 'விரல்கவை உண்டு'
2. அம்புலிப் பருவம் - பாடல் 6 - 'ஓழிகாதபுவனத்து'

(ஆ) நந்திக்கலம்பகம் : 2 பாடல்கள்

1. வாடைநோக
2. உரைவரம்பு
3. மயில்கண்டால்
4. சூழிவன்
5. கோலக்கொடி

(இ) தமிழ்விடுதாது

17 முதல் 46 வரை - 30 கண்ணிகள்

(ஈ) குற்றாலக் குறவஞ்சி: குறத்திமலைவளம் கூறல் - 3 பாடல்கள்

1. வானரங்கள்
2. முழங்கு
3. ஆடும் இரவு

(உ) கலிங்கத்துப் பரணி: களம் பாடியது - 4 பாடல்கள்

1. ஆடல்
2. நெருங்கு
3. வாய்மடித்து

(ஊ) தனிப்பாடல்கள் : 5 பாடல்கள்

1. காளமேகப்புலவர் - 3 பாடல்கள்: 1. கத்துகடல் 2. பூநக்கி 3. பண்பு
2. ஓளவையார் - 1 பாடல் : மதியாதார்முற்றம்
3. பலபட்டடைச் சொக்கநாதப் புலவர் - 1 பாடல்: படிக்காசுப் புலவர்பாடல்

அலகு - 4

புதினம் காயம். தி.வெ. இராசேந்திரன்

அலகு - 5 இலக்கிய வரலாறு

பன்னிருதிருமுறைகள், நாலாயிரதிவ்யபிரபந்தம், சிற்றிலக்கியங்கள்.

**LEB**

**A.D.M. COLLEGE FOR WOMEN (AUTONOMOUS), NAGAPATTINAM  
DEPARTMENT OF ENGLISH  
SEMESTER-II CATEGORY – PART II- ENGLISH  
PAPER-II POETRY FOR EFFECTIVE COMMUNICATION  
(For candidates admitted from the academic year 2016-17 onwards)**

**SEMESTER II**

**ELC II – POETRY FOR EFFECTIVE COMMUNICATION**

**Objectives:**

**To make learners to be aware of the various elements of poetry.**

**To make them appreciate the poem.**

**Text prescribed:**

- I** Tranquil Reflections  
-Edited by Dr.A.Santhanalakshmi & Mrs.V.Kannaki, etal.
- II** Spoken Language Component  
(Materials Prepared by the Department of English)

**Unit – I**

1. Christina Rossetti - “Goblin Market”  
2. Edith Sitwell - "A Mother to her dead child”

**Unit – II**

3. Emily Dickens - “Hope”  
4. Sylvia Plath - “Mirror”

**Unit – III**

5. Toru Dutt - “The Lotus”  
6. Sarojini Naidu - “The Soul’s Prayer”

**Unit – IV**

7. Kamala Das - “ My Grandmother’s House”  
8. Lakshmi Kannan - “She”

**Unit – V**

9. Meena Kandasamy - “Touch”  
10. Meena Alexandar - “Muse”  
11. Spoken Language Component- Syllable Division

**Pattern of Evaluation**

**CIA – 25 Marks (Passing minimum of 40%)**

**Test (Written) – 10 Marks**

**Assignment & Group Discussion - 5 Marks**

**Written Quiz & Seminar - 5 Marks**

**Attendance - 5 Marks**

**SEMESTER – 75 Marks**

**Total Marks – 100 Marks (Passing minimum of 40%)**

**Question Pattern:**

**Section A - 20 Marks**

**Short answer questions (10x2=20 Marks)**

**Section B – 25 Marks**

**Paragraph Questions (5x4=20 Marks)**

Answer all the Paragraph questions either or pattern (A question should be asked from each unit)

Spoken English Component  $10 \times \frac{1}{2} = 5$  Marks

**Section C –**

**Essay Questions (3x10=30 Marks)**

Answer any 3 Questions. (One Essay should be asked from each Unit)

## SEMESTER – II CORE COURSE II MAJOR PRACTICAL I

**Internal: 25**  
**External : 75**

**Instruction Hours: 6**  
**Exam Hours: 3**  
**Credit: 5**

### **OBJECTIVES:**

**To enable the students can get practical knowledge about the qualitative and Quantitative analysis of Biomolecules.**

### **I. QUALITATIVE ANALYSIS:**

#### **a. Carbohydrates**

Glucose

Fructose

Maltose

Galactose

Lactose

Sucrose

#### **b.Amino acids**

Tryptophan

Tyrosine

Proline

Histidine

Arginine

cysteine

#### **d.Lipids**

### **II. QUANTITATIVE ANALYSIS**

- a. Estimation of reducing sugar by Benedict's quantitative method
- b. Estimation of Amino acids by Formal titration.
- c. Estimation of Ascorbic acid by titrimetric method using 2, 6 dichlorophenolindophenol dye.
- d. Acid number, Iodine number and saponification number of lipids.

### **REFERENCE BOOKS:**

1. Manuals in biochemistry Dr. J.Jayaraman – 1996, New age in International Publication
2. Manuals in biochemistry Dr.S. Ramakrishnan – 2000, Orient Longman
3. Practical biochemistry Plummer – 2008, TATA Mc Graw Hill Education

**UBC/2SBC**

**SEMESTER – II  
CORE COURSE III  
ANALYTICAL BIOCHEMISTRY**

**Internal: 25  
External : 75**

**Instruction Hours: 6  
Exam Hours: 3  
Credit: 5**

**OBJECTIVES:**

**To enable the students understand the principles, instrumentation and application of various biochemical techniques.**

**UNIT - I: CHROMATOGRAPHY:**

Principles, Materials, Methods & Applications of Paper chromatography, thin layer chromatography, Column chromatography, Gas liquid chromatography, Ion exchange Chromatography, High performance liquid chromatography and Molecular Sieve chromatography.

**UNIT - II: ELECTROPHORESIS**

Principles, Methods, Instrumentation & Applications of Paper electrophoresis, Agar gel electrophoresis, PAGE, Immuno electrophoresis, Isoelectro focusing. Factors affecting migration rate.

**UNIT -III: CENTRIFUGATION**

Centrifugation, Homogenization and Cell fractionation. Centrifuge, relative centrifugal force, Principles instrumentation and uses of Analytical and preparative Ultra centrifuge, Molecular weight determination by sedimentation Velocity Method & sedimentation co-efficient methods.

**UNIT – IV: SPECTROSCOPY**

Colorimetry, Beer's-Lambert's law. Instrumentation and applications of Spectrophotometer- Flame photometer, NMR, Applications and Instrumentation of Atomic Absorption Spectroscopy and fluorescence spectroscopy.

**UNIT - V: RADIO ISOTOPE**

Radioactive decay, Measurement of Radioactivity - GM counter, Scintillation counter, Autoradiography, Manometry- Warburg Constant Volume, Gilson Respirometer, uses of Warburg and Gilson manometry. Biological hazards of radiation in handling radio isotopes

**TEXT BOOK:**

Instrumental Method of Chemical Analysis – Chatwal / Anand 2005

**REFERENCE BOOKS:**

1. Instrumental method of chemical analysis - B.K. Sharma - 2000
2. Biophysical chemistry - Upadhyay, Upadhyay Nath - 2004
3. Analytical biochemistry - Wilson & walker - 2001

**ES**

**II SEMESTER  
ENVIRONMENTAL STUDIES**

Internal Marks: 25

External Marks: 75

Total Marks : 100

Instruction Hrs : 2

Credit : 2

Exam Hrs : 3

**Unit: 1** The Multidisciplinary nature of environmental studies Definition, scope and importance.

Need for public awareness.

**(2 Hours)**

**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 effects on forests and tribal people.

b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams 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-pesticide 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 resources, land degradation, man induced Landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

**(8 Hours)**

**Unit: 3 Ecosystems**

Concept of an ecosystem.

Structure and function of an ecosystem.

Producers, consumers and decomposers

Energy flow in the ecosystem

Ecological succession.

Food chains, food webs and ecological pyramids

Introduction, types, characteristic features, structure and function of the following ecosystem:-

a. Forest ecosystem

b. Grassland ecosystem

c. Desert ecosystem

d. Aquatic ecosystems, (ponds, streams, lakes, rivers, oceans, estuaries)



#### **Unit: 4 Biodiversity and its conservation**

Introduction – Definition : Genetic, species and ecosystem diversity Biogeographical classification of India

Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values

Biodiversity at global, National and local levels India as a mega-diversity nation Hot-spots of biodiversity

Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.

Endangered and endemic species of India Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity. **(8 Hours)**

#### **Unit: 5 Environmental Pollution**

Definition 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

Solid waste Management: Causes, effects and control measures of urban and industrial wastes.

Role of an individual in prevention of pollution Pollution case studies Disaster management: floods, earthquake, cyclone and landslides. III-Effects of Fireworks: Firework and Celebrations, Health

Hazards, Types of Fire, Firework and Safety **(8 Hours)**

#### **Unit: 6 Social Issues and the Environment**

From Unsustainable to Sustainable development. Urban problems related to energy.

Water conservation, rain water harvesting, watershed management.

Resettlement and rehabilitation of people; its problems and concerns.

Case studies Environmental ethics: Issues and possible solutions.

Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies. Wasteland reclamation.

Consumerism and waste products. Environment Protection Act.

Air (Prevention and Control of Pollution) Act.

Water (Prevention and Control of Pollution) Act.

Wildlife Protection Act. Forest Conservation Act.

**Unit: 7 Human Population and the Environment**

Population growth, variation among nations.

Population explosion – Family Welfare Programmes

Environment and human health

Human Rights - Value Education

HIV/ AIDS - Women and Child Welfare

Role of Information Technology in Environment and human health Case studies.

**Unit: 8 Field Work**

Visit to a local area to document environmental assets-river / forest/ grassland/ hill / Mountain.

**References:**

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2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt Ltd, Ahamedabad – 380013, India, E-mail: mapin@icenet.net(R)
3. Brunner R.C. 1989, Hazardous Waste Incineration, McGraw Hill Inc 480 p
4. Clark R.S. Marine Pollution, Clanderson Press Oxford (TB)
5. Cunningham, W.P.Cooper, T.H.Gorhani E & Hepworth, M.T. 2001.
6. De A.K. Environmental Chemistry, Wiley Eastern Ltd
7. Down to Earth, Centre for Science and Environment (R)
8. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute Oxford University, Press 473p.
9. Hawkins, R.E. Encyclopedia of India Natural History, Bombay Natural History Society, Bombay (R)
10. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press 1140 p.
11. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws Himalaya Pub. House, Delhi 284 p.
12. Mckinney, M.L. & Schoch R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition 639 p.
13. Mhaskar A.K. Matter Hazardous, Techno-Science Publications (TB)
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15. Odum, E.P. 1971 Fundamentals of Ecology. W.B. Saunders Co. USA. 574 p
16. Rao MN & Datta, A.K. 1987 Waste Water treatment, Oxford & IBH Publication Co. Pvt Ltd 345 p.
17. Sharma B.K. 2001 Environmental chemistry Goel Publ House, Meerut.
18. Survey of the Environment, The Hindu (M ).
19. Townsend C. Harper, J and Michael Begon, Essentials of Ecology, Blackwell science (TB)
20. Trivedi R.K. Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol. I and II, Enviro Media (R).
21. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science Publications (TB).

22. Wagner K.D. 1998 Environmental Management. W.B. Saunders Co. Philadelphia USA 499 p  
(M) Magazine (R) Reference (TB) Textbook.