SEMESTER-I

பருவம் **I**

தமிழ்– தாள் **- 1**

CODE: 16TIED11 **Credits: 3 (2L: 1T: 0P)**

Hours: 4/Week

நோக்கங்கள்: -

1. மாணவர்களுக்கு பண்டைய தமிழக மக்களின் வரலாற்றை அறிமுகம் செய்தல்
2. மாணவர்களுக்கு அற இலக்கியங்களை போதிப்பதன் வழியாக நல்லொழுக்கத்தை வளரச் செய்தல்
3. மாணவர்களுக்கு படைப்பாற்றல் திறனை வளர்த்தல்
4. பயன்பாட்டித்தமிழ் வழியாக மொழித்திறனை மேம்படுத்துதல்

அலகு – 1 தமிழக வரலாறு

சங்ககாலத் தமிழகம் – அரசியல் நிலை – போர் முறை – சமூக அமைப்பு – திருமணமுறை – நம்பிக்கைகள் – வணிகம் – உணவு – உறையுள் – அணிகலங்கள் – கல்வி – பொழுதுபோக்குகள் – அறம்

அலகு – 2 அற இலக்கியங்களும், காப்பியங்களும்

களப்பிரர் காலம் விளக்கம் – நீதி இலக்கியத்தின் சமூகதி தேவை – திருக்குறள் – அன்புடைமை அதிகாரம் - அடக்கவுமை, நட்பு, தீ நட்பு, ஐம்பெருங்காப்பியங்கள் – ஐஞ்சிறுங்காப்பியங்கள்
காப்பியங்கள் – சிலப்பதிகாரம் கதை சுருக்கம் – வழக்குரைத்தகாதை (மட்டும்)

அலகு – 3 உரைநடை

நலவாழ்வு – டாக்டர் மு. வரதராசன்

அலகு – 4 இக்கால இலக்கியங்கள்

சிறுகதை – தோற்றம் – வளர்ச்சி – சிறுகதை ஆசிரியர்கள் – சிறுகதை வகைகள் விடியுமா? – கு.ப.ராஜகோபலன், நாற்று - (சிறுகதிய தொகுப்பு), வானதி பதிப்பகம், தி.நகர்.

அலகு – 5 பயன்பாட்டுத் தமிழ்

பிறமொழிக் சொற்களை தமிழ்ச்சொற்களாக மாற்றுதல் – எழுத்து பிழை நீக்கம் – கலைச் சொல்லாக்கம் – வல்லினம் மிகு இடம் – மிகா இடங்களை கண்டறிதல் – சந்திவிதிகள் – சொற்றொடர் மாற்றம் (தன்வினை – பிறவினை – செயப்பாட்டு வினை – நேர் கூற்று – அயற் கூற்று) – பயிற்சிகள்

COURSE OUTCOME

At the end of this course the students will be able to,

CO1: Recall and recognize heritage and culture through History of Tamil literature.

CO2: Interpret the cultural lifestyle of Ancient Tamil people.

CO3: Evaluate social and individuals' moral value after studying Epics and Ethics Literature.

CO4: Build the humanistic concept and moral life skills in divine and minor literature.

CO5: Improve their own creativity and writing skills in Tamil language.

<u>பார்வை நூல்கள்: -</u>

1. முனைவர் அ . தட்சிணாமூர்த்தி – தமிழர் நாகரிகமும் பண்பாடும் யாழ் வெளியீடு செ-46
2. கே.கே. பிள்ளை – "தமிழக் வரலாறு" மக்கள் பண்பாடும்", உலகத் தமிழாராய்ச்சி நிறுவனம், மீள் பதிப்பு, 2009
3. முனைவர் கு. மோகணராசு – திருக்குறள் மக்கள் உரை, மணிவாசகர் பதிப்பகம்
4. முனைவர். பொற்கோ – நீங்களும் தமிழை தவறு இல்லாமல் எழுதலாம்

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SEMESTER – I

HINDI – PAPER-1

CODE: 16IHED11 **Credits: 3 (2L: 1T: 0P)**

Hours: 4/Week

Objectives: Students develop proficiency in Hindi which equips them to

1. enable the students to acquire basic skills in functional language.
2. develop independent reading skills and reading for appreciating literary works.
3. internalise grammar rules so as to facilitate fluency in speech and writing .
4. develop functional and creative skills in language.
5. develop values of liberalism and an insight into the cultural heritage of the region which remains embodied in the literary output of the region.

Transaction mode:

Lecture cum discussion, group discussion; panel discussion, seminar group work, library work.

COURSE CONTENT:

Unit - I: Descriptive Grammar

Sandhi (Agama, Adesa, Dwitwa etc) A suitable book on Sandhi will be followed in the classroom

Reference: Hindi Vyakaran by N Nagappa.

Unit - II: Functional Language

(a) Group Discussion: Introduction-Definition-characteristics-types of discussions-round-table –symposium-panel-lecture forum etc.-relevance of group Discussions –Exercises.

(b) Conversation: Definition-styles of conversation-formats of conversation-telephonic conversa6ion, etc-Exercises

Reference: Effective Group Discussion – Theory and Practice by Gloria J.Galanes, McGraw Hill Company (Publishers).

Unit - III: Modern Poetry:

i) Kavya Kusumaakar - First eight Poets (Modern)
Prasaranga, University of Mysore, Mysore

Unit - IV: Prose : Collection of Short Stories:

Katha Kousthubh (Ed). Dr Tippeswamy

Sessional work :

In the internal class during the different activities the performance of the student will be assessed by the teacher. Test, assignments and small projects works may be given .

COURSE OUTCOME

At the end of this course the students will be able to,

CO1: Familiar with the writing style of great writers in India.

CO2: Understand the importance of selecting a profession according to one's own interest.

CO3: Describe the present situation; politicians' behavior& their self-oriented activities.

CO4: Develop their appreciation skills

CO5: Understand the writing style of writer "Fanishwarnath renu" who is well known for his village type stories.

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SEMESTER – I

ENGLISH – PAPER-1

CODE: 16IEED11 **Credits: 3 (2L: 1T: 0P)**

Hours: 4/Week

Objectives: Students develop proficiency in English which equips them to

1. Students develop proficiency in English which equips them to:
2. understand the demands of audience, subject, situation and purpose and the
3. use of language for effective communication.
4. analyse language in context to gain an understanding of grammar, vocabulary, spelling, punctuation and speech.
5. examine authentic literary and non-literary texts and develop insight and appreciation.
6. gain an understanding of study and reference skills.
7. plan, draft, edit and present a piece of writing.

Unit I : Descriptive Grammar

Parts of speech: Nouns, pronouns, adjectives, verbs, adverbs, prepositions, conjunctions, interjections.

Tenses- **articles.**

Unit II : **Skills in Communication**

Use of conventional formulae: Greeting, apology, invitation, refusal, accepting, thanking. Debating on an issue – agreeing / disagreeing.

Unit III : Study and Reference Skills

Study skills: Note making, Note- taking, Paraphrasing. Reference skills: Dictionary, library, thesaurus, encyclopedias

Unit IV: Literature – Prose

Extract from Abdul Kalam's *Wings of Fire*. Women, Not the Weaker Sex - M.K. Gandhi

Unit V: Composition

Reading Comprehension,Filling up Forms, Railway Reservation/ Cancellation Forms, Bank-Challan, Convocation Form,Money Order Form.

COURSE OUTCOME

At the end of this course the students will be able to,

CO1: Understand the demands of audience, subject, situation and purpose of using language.

CO2: Analyze the language in context to gain an understanding of grammar rules.

CO3: Examine authentic literary and non-literary texts and develop insight and appreciation.

CO4: Plan, draft, edit and present a piece of writing.

CO5: gain an understanding of study and reference skills.

Sugested Readings:

- Block, C.C.(1997). *Teaching the Language Arts*, 2nd Ed. Allyn and Bacon
- Mckay. et al. (1995). *The Communication Skills Book*, 2nd Ed. New Harbinger Publications.
- Hornby,A.S.(2001).*Oxford Advanced Learner's Dictionary*,OUP
- Thomsan,A.J. & Martinet.(2002).*A Practical English Grammar*.OUP
- Mahadevan, Usha. Empower with English, Sun Beams – 1. Emerald Publication, Chennai, 2012

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SEMESTER – I

ENVIRONMENTAL EDUCATION

CODE: **Credits: 2 (1L-0.5T-0.5P)**
Hours: 3/Week

Objectives: On completion of the course, the student-teachers will be able to

1. understand the importance of protecting the environment.
2. develop the knowledge of various awareness programmes on protecting the environment
3. identify the ways to utilize conventional energy sources.
4. describe the future of Solar Energy.
5. explain the role of an individual in conservation of natural resources.
6. suggest ways to increase the ground water level in and around college campus.
7. conduct awareness programmes on different types of pollution.
8. report on action-taken to protect college campus from Land Pollution.
9. discuss the adverse effects of Global Warming.
10. explain the ways to avoid nuclear accidents.
11. Justifying the role of an individual in protecting the Environment.

UNIT-I: Introduction to Environmental Education and Natural Resources

Definition and Meaning of Environment – Components – Scope – Nature – Importance - Need for public awareness and objects of Environmental Study. Resources : Natural Resources – Renewable resources - Non renewable resources – Energy resources – Chief resources of energy and their classification – Growing needs of energy – Alternative sources of energy – Future of Solar Energy.

UNIT-II: Role of an individual in Conservation of Natural Resources and Environmental Pollution

Role of an individual in conservation of natural resources – Water Conservation – Energy Conservation – Conservation of Forest resources – Soil conservation – Equitable use of resources for sustainable life style.

Environmental Pollution: Definition – Causes - Effects and control measures of air pollution – Water Pollution – Soil Pollution – Noise Pollution - Nuclear Hazards – Role of an individual in prevention of Pollution.

UNIT–III: Environmental Issues and Role of Education

Climate change – Global Warming – Acid Rain – Ozone Layer depletion – Nuclear accidents and Holocaust. Education for sustainable development of environment, Environmental Education in National Policy on Education (1986) – Need – Providing Environmental Education at different levels – current status of Environmental Education in School curriculum – Role of NCERT – Role of Teachers.

COURSE OUTCOME

At the end of this course the students will be able to,

CO1: understand the importance of protecting the environment.

CO2: develop the knowledge of awareness on protecting the environment

CO3: conduct awareness programmes on different types of pollution.

CO4: discuss the adverse effects of Global Warming.

CO5: plan the ways to avoid nuclear accidents.

References

- Amandeep Kaur. (2003). Environmental Education, Tandon Publications, Ludhiana.
- Arul Jothy. (2009). Environmental Education, Centrum Press, New Delhi.
- Gopal Dutt .N.H. (2007). Environmental Pollution Control, Neelkamal Publications, New Delhi.
- Joshi. A.L. (2012). Environmental Education Saurabh Publishing House, New Delhi.
- Khoshoo.T.N. (1991). Environmental concerns and strategies, Ashish Publishing House, New Delhi.
- Raghavan Nambiar. K, (2010), Text book of Environmental Studies, Scitech Publication Pvt. Ltd., Chennai.
- Reena Mohanka. (2009). Environmental Education A.P.H Publishing Corporation, New Delhi.
- Suresh Pachauri. (2012). Environmental Education, Pearson Series in Education, Delhi.
- Surinder Singh Sirohi. (2010). Environmental Education, Tandon Publications, Ludhiana.

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SEMESTER – I
DEVELOPMENTAL STAGES OF LEARNER

CODE: 16CIED11 **Credits: 3 (2L-0.5T-0.5P)**
Hours: 4/Week

Objectives: On completion of the course, the student-teachers will be able to

1. describe the principles of growth and development
2. explain the characteristics of prenatal development
3. understand the physical, mental, emotional, social and moral development of infancy and babyhood
4. understand the physical, mental, emotional, social and moral development of Early and late childhood
5. analyse the characteristics of adolescents and their problems.

UNIT-I: Growth and Development

Concept of Growth, Development and Maturation - Principles of Growth and Development - Introduction to Stages of development: Prenatal and Postnatal: Infancy, Babyhood, childhood, adolescence - Aspects of development: Physical, Mental, Emotional, Moral & Social.

UNIT-II: Role of Heredity and Environment

Heredity and Environment: Mechanism of Heredity – Identical and Fraternal Twins – Biological Inheritance: principles & significance – Role of Heredity - Role of Environment –concept of Nature and Nurture in the development of an individual.

UNIT-III: Developmental Stages

Prenatal Development: Prenatal – 3 Stages of prenatal development: Zygote, Embryo and Fetus - Hazards during prenatal stages: Physical and Psychological. Infancy and Babyhood: Characteristics – Developmental tasks – Physical Development – Cognitive Development – Emotional Development – Social Development – Moral Development – Physical and Psychological hazards (Stage wise). Early and Late Childhood: Characteristics – Developmental tasks – Physical Development – Cognitive Development – Emotional Development – Social Development – Moral Development – Physical and Psychological hazards (stage wise). Adolescence: Characteristics – Developmental Tasks – Physical development – Cognitive development (Piaget) – Social development(Erickson) – Emotional development, Moral development (Kohlberg) – Discipline. Interests of Adolescents – Problems of Adolescents. Group Behaviour - Leadership.

COURSE OUTCOME

At the end of this course the students will be able to,

CO1: Identify the characteristics of pre-natal development

CO2: Understand physical, mental, emotional, social, and moral development of childhood.

CO3: Analyze the interests of adolescence

CO4: Demonstrate the development tasks of the adolescence

CO5: Plan and execute guidance programmes for early and late childhood

References:

- Berk, Laura E. (2007). Child Development, Pearson Prentice Hall, New Delhi.
- Bhatia, H.R. (2008). Educational Psychology, Pearson Prentice Hall, New Delhi.
- Dash, B.N. (2007). Educational Psychology, Neelkamal Publications (P) Ltd, Delhi.
- Hurlock, Elizabeth B. (2006). Child Growth and development, Tata Mc Graw Hill Pvt Company, Delhi.
- Mangal, S.K. (2008). General Psychology, Sterling Publishers (P) Ltd, New Delhi.
- Robert A.Baron, (2007). Psychology, A.I.T.B.S Publishers, New Delhi.
- Santrock, John W. (2007). Adolescence, Tata Mc Graw Hill, New Delhi.
- Stella Reynolds. (2006). Educational Psychology, Lotus Press, New Delhi.

SEMESTER-I

MATHEMATICS – PAPER-1

TRIGONOMETRY AND FOURIER SERIES

CODE: 16EIED12 **Credits: 3 (2L: 1T: 0P)**

Hours: 4/Week

Objectives: To enable students to

1. understand the concept of summation of series
2. gain knowledge in Fourier series
3. apply the concepts to other courses

Unit – I: Expansion in series – Expansions of Sin θ, Cos θ, (problems involving evaluation of limits only), Expansion of $Sin\, n\theta$, $Cos\, n\theta$, $Tan\, n\theta$, tan(A+B+C+….) (Formation of equations excluded) , Powers of sines and cosines of θ in terms of functions of multiples of θ.

Unit – II: Hyperbolic Functions: definition, relation between hyperbolic functions and Inverse hyperbolic functions.

Unit – III: Logarithm of complex quantities.

Unit – IV: Summation of Trigonometric series by using complex quantities: C + iS form Gregory series (only simple problems in both cases).

Unit – V: Fourier Series of periodicity 2π – half range series

COURSE OUTCOME

At the end of this course the students will be able to,

CO1: Derivate the Expansions of $\sin n\theta$ $\cos n\theta$,$\tan n\theta$

CO2: Compare the circular function and hyperbolic function

CO3: Construct the hyperbolic function formulae from circular function formulae

CO4: Apply the rule of logarithm and its concepts.

CO5: Gain knowledge in Fourier series.

Reference Books:

1. S. Narayan and T.K. Manicavachagom Pillay, Trigonometry
2. S. Narayan and T.K. Manicavachagom Pillay (2002), Calculus Volume –II, S.Viswanathan printers and publishers Pvt. Ltd., Chennai.
3. P.R. Vittal, Trigonometry, Margham Publications.

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SEMESTER-I

PHYSICS – PAPER-I

MECHANICS & PROPERTIES OF MATTER

CODE: 16EIED11 **Credits: 4 (3L: 0T: 1P)**

Hours: 5/Week

Objectives : Enable the Students to

1. study and apply the knowledge of Gravitation at various situation.
2. understand the concepts of statics, hydrostatics, hydrodynamics and dynamics of charged bodies under various fields and the rigid body dynamics in terms of MI.
3. study the basics of Elasticity and its importance in beams, girders.
4. study the concepts of viscosity and surface tension and the various methods to
5. determine the parameters experimentally.

Unit – I: Statics

Friction - Laws of Friction - coefficient of Friction-Equilibrium on a rough inclined plane - impulse- Collision - oblique impact of smooth spheres - Direct impact of two smooth spheres - loss of kinetic energy due to direct impact and oblique impact of two smooth spheres.

Unit – II: Hydrostatics and Hydrodynamics

Center of pressure - centre of pressure of a rectangular lamina and triangular lamina - Atmospheric pressure - Variation of atmospheric pressure with altitude - Equation of continuity - Energy of liquid -Euler's equation -Bernoulli's theorem -Applications.

Unit – III: Dynamics of rigid bodies

Moment of inertia - Radius of gyration - Theorems of M .I - M.I of circular disc, solid cylinder, hollow cylinder, solid sphere and hollow sphere - K.E of a rotating body - M.I of a diatomic molecule - Rotational energy state of a rigid diatomic molecule - centre of

mass - conservation of linear momentum - Relation between Torque and angular momentum.

Unit – IV: Gravitation and Elasticity

Newton's law - Kepler's law - G by Boy's method - Gravitational field and potential - potential and field due to a spherical shell and solid sphere - Compound pendulum - Modulli of elasticity - work done in a strain – Rigidity modulus by static torsion (scale & telescope) Torsional oscillation of a body - Bending of beams - bending moment - cantilever - Y - Uniform and non- uniform bending.

Unit –V: Viscosity and Surface Tension

Critical velocity - Poiseullie's formula - coefficient of viscosity - h by variable pressure head - Terminal velocity and Stoke's formula - Stokes method - variation of viscosity with temperature and pressure - viscosity of gases - Rankine's method - Surface tension - work done - Angle of contact - Quincke's method -Drop weight method.

COURSE OUTCOME

At the end of this course the students will be able to,

CO1: Understand the basic concepts of elastic moduli and their relation.

CO2: Study the basics of Elasticity and its importance in beams, girders.

CO3: Discuss the important concepts in surface tension and their experimental procedure.

CO4: Analyze the concepts of statics, hydrostatics, hydrodynamics.

CO5: Determine the parameters experimentally.

Reference Books:

1. R. Murugeshan, Mechanics and Mathematical Physics , S.Chand & Company Ltd., New Delhi (Third Revised Edition 2008).
2. R. Murugeshan, Properties of Matter, S.Chand & company Ltd, New Delhi (2010).
3. Fundamentals of Physics, 6th Edition, David Halliday, Robert Resnick and Jearl Walker, John Wiley and Sons Inc.
4. University Physics, Revised Edition, Harris Benson, John Wiley and Sons, Inc.

Physics Practicals – I

Paper – I

Any Seven Practicals

1. Torsion Pendulum.
2. Surface Tension – Capillary rise method.
3. Deflection Magnetometer (TanA & TanB).
4. Young's modulus – Non-uniform Bending.
5. Sonameter – frequency of the tuning fork.
6. Stoke's method.
7. Poiselleus methods.
8. Viscosity – Constant pressure head.

9. Viscosity – Variable pressure head.

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SEMESTER-I

CHEMISTRY – PAPER-I

INTRODUCTION TO ORGANIC CHEMISTRY

Code: 16CIED12 **Credits: 4 (3L: 0T: 1P)**

Hours: 5/Week

Course objective: To know about what are hydrocarbons and their classification, conformations, preparations, properties and about aromaticity.

Unit I – Classifications of hydrocarbons

Chemistry of alkanes and cycloalkanes petroleum source of alkanes-Methods of preparing alkanes and cycloalkanes - chemical properties –mechanism of free radical substitutions in alkanes - halogenation –uses.

Unit II – Conformational Analysis

Conformational study of ethane and n-butane – Relative stability of cyclo alkanes from cyclopropane upto cyclooctane – Bayer's straintheory – Limitations – cyclohexane and mono-and disubstituted cyclohexanes.

Unit III – Preparation methods of hydrocarbons

General methods of preparation and properties of Alkenes and alkynes –electrophilic and radical addition mechanisms- addition reactions with H_2,X_2, HX, HOX, H_2SO_4, H_2O , hydroboration Ozonolysis and peroxide effect. Hydroxylation of alkenes with $KMnO_4$- allylic substitution of alkenes by NBS –acidity of alkynes and formation of acetylides-test for alkenes and alkynes.

Unit IV – Types of dienes and reactions

Dienes-types-stability-preparation of 1, 3 butadiene, isoprene and chloroprene-reactivity –1, 2 and 1, 4 additions in conjugated dienes,-Diels-Alder reaction. Types of polymerization-mechanisms of ionic and free radical addition polymerization.

Unit V - Aromaticity and preparation of aromatic compounds

Aromaticity-Huckel's rule-resonance in benzene –electrophilic substitution in aromatic compounds-general machanism –nitration, sulphonation, halogenation, Friedelcraft's alkylation and acylation-Orientation and reactivity in monosubstituted benzenes polynuclear hydrocarbons –naphthalene, anthracene and phenanthrene – preparation, properties and uses.

COURSE OUTCOME

At the end of this course the students will be able to,

CO1: Understand the nature and function of hydrocarbons.

CO2: Learn and classify the stability and aromaticity of organic molecules

CO3: Interpret the laws of gaseous behaviour in different concepts

CO4: understand the geometry of simple organic compounds

CO5: Analyze the basic mechanism of different reactions

Text Book:

- P. L. Soni. Text Book of Organic Chemistry" Sultan Chand & sons. 32nd edition. **2013**

Reference Books

- Robert Thornton Morrison, Robert Neilson Boyd, "Organic Chemistry" Ashok K. Ghosh 10th edition, **2013**
- Dr. Jagadamba singh, Dr. L. D. S. Yadav, "Advanced Organic Chemistry" Pragati Prakashan, 7th Edition, **2011**

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CHEMISTRY
PRACTICAL-I

Acid – Base Titrations

1. Estimation of Hydrochloric acid using oxalic acid
2. Estimation of sodium Hydroxide using sodium carbonate
3. Estimation Borax

Redox Titration

4. Estimation of oxalic acid using Mohr's salt
5. Estimation of Calcium
6. Estimation of Ferrous Sulphate using oxalic acid
7. Estimation of H_2O_2
8. Estimation of copper using Potassium Dichromate
9. Estimation of Ferric Iron using Potassium Dichromate

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