



MANONMANIAM SUNDARANAR UNIVERSITY -
TIRUNELVELI



UG PROGRAMMES

OPEN AND DISTANCE LEARNING (ODL) PROGRAMMES

(FOR THOSE WHO JOINED THE PROGRAMMES FROM THE ACADEMIC YEAR 2023-2024
ONWARDS)

B.Sc. Mathematics

Semester	Course	Title of the Course	Course Code
IV	Part I –Languages (Tamil)	தமிழும் அறிவியலும்	J1TL41
	Part II – Languages (English)	General English - IV	J2EN41
	Core VII	Sequence and Series	JMMA41
	Core VIII	Fourier Series and Integral Transforms	JMMA42
	Elective IV	Numerical Methods	JEMA41
	Skill Enhancement Course - V	Geo Gebra	JSMA41
	NMC /Substitute Paper	Office Automation	JNMA41
	Value Education	Value Based Education (Common)	JVBE41

தமிழும் அறிவியலும்

அலகு-1	தமிழரின் அறிவியல் சிந்தனைகள்
<ul style="list-style-type: none"> • அறிவியலும் மனித வாழ்வும் • ஐந்திணைப் பகுப்பும் சூழலியலும் • தொழில்நுட்ப மேலாண்மை • நீர் நில மேலாண்மை 	
அலகு-2	பழந்தமிழ் இலக்கியங்களில் அறிவியல் சிந்தனைகள்
<ol style="list-style-type: none"> 1. நிலவியல் 2. உலோகவியல் 	

<ol style="list-style-type: none"> 3. வானவியல் 4. உயிரியல் 5. உளவியல் 	
அலகு-3	இடைக்கால இலக்கியங்களில் அறிவியல் சிந்தனைகள்
<ol style="list-style-type: none"> 1. காப்பியங்களில் அறிவியல் 2. சிற்றிலக்கியங்களில் அறிவியல் 3. உரைநூல்களில் அறிவியல் 	
அலகு-4	இணையத் தமிழ்
<ol style="list-style-type: none"> 1. இணையத் தமிழ் பயன்பாடு - அறிமுகம் 2. இணையத்தமிழ்க் கல்விக்கழகம் 3. இணைய நூலகம் 4. செயற்கை நுண்ணறிவியல் 5. தமிழ்நாட்டு அறிவியல் ஆளுமைகள் 	
அலகு-5	கடிதம் எழுதுதலும் கட்டுரை எழுதுதலும்
<ul style="list-style-type: none"> • உறவு முறைக் கடிதப் பயிற்சி • அலுவலகக் கடிதப் பயிற்சி • விண்ணப்பப் படிவம் எழுதும் பயிற்சி • தன் விவரப் படிவம் எழுதும் பயிற்சி • கருத்து விளக்கக் கட்டுரைகள் எழுதும் பயிற்சி • பத்திரிகைகளுக்குக் கட்டுரை எழுதும் பயிற்சி 	
Text books	

Reference Books

1. தமிழர் வேளாண்மை மரபுகள் - இல).செ.கந்தசாமி
- 2. சங்க இலக்கியத்தில் வேளாண் சமுதாயம், பெ.மாதையன், நியூ செஞ்சுரி புக் ஹவுஸ்
3. தமிழில் அறிவியல் இதழ்கள்சாமுவேல்- ரா.பார்வேந்தன் ஃபிஷ்கிறீன் பதிப்பகம், கோவை
4. அறிவியல் தமிழ் - பதிப்பாசிரியர் இராதா செல்லப்பன்,பாரதிதாசன் பல்கலைக்கழகம், திருச்சிராப்பள்ளி.
5. இணையத் தமிழ் வரலாறு, மு.பொன்னவைக்கோ, பாரதிதாசன் பல்கலைக்கழகம்
6. இணையத் தமிழ், சந்திரிகா சுப்பிரமணியம் - சந்திரோதயம் பதிப்பகம்

7. இணையமும் இனிய தமிழும் - துரை. மணியரசன், இசை பதிப்பகம்
8. கணினித் தமிழ், இல. சுந்தரம் - விகடன் பிரசுரம்
9. மாண்புமிகு மண், பாமயன், வம்சி புக்ஸ்
10. தமிழ் இலக்கியத்தில் அறிவியல் சிந்தனைகள் வானதி பதிப்பகம், சென்னை

SEQUENCES AND SERIES

UNIT	Details
I	Sequences - Bounded sequences - Monotonic Sequences – Convergent Sequences –Divergent and Oscillating Sequences – The Algebra of limits. (Chapter3:Sections- 3.1to3.7)
II	Behaviour of Monotonic Sequences–Some theorem on limits – Subsequences –Limit points – Cauchy sequences. (Chapter3:Sections- 3.8to3.12)
III	Series of positive terms: Infinite series–Comparison test. (Chapter2:Sections-4.1, 4.2)
IV	Kummer’s test–Root test–Integral Test. (Chapter4:Sections-4.3 to4.5)
V	Series of Arbitrary terms: Alternative series – Absolute convergence–Tests for convergence of series of arbitrary terms. (Chapter 5:Sections - 5.1to5.3)
Reference Books	<ol style="list-style-type: none"> 1. Richard R.Gold berg, Methods of Real Analysis: Oxford and IBH Publishing,2020. 2. Ethan D.Bloch, The Real Numbers and Real Analysis, Springer, 2011. 3. G. M. Fikhtengol’ts, The Fundamentals of Mathematical Analysis, Voll. Pergamon Press, NewYork,1965. 4. T.M.Apostol, Calculus (Vol.I), John Wiley and Sons(Asia) P.Ltd., 2002. 5. R.G.Bartle and D.RSherbert, Introduction to Real Analysis, John Wiley and Sons (Asia) P. Ltd., 2000. 6. E.Fischer, Intermediate Real Analysis, Springer Verlag,1983. 7. K.A.Ross, Elementary Analysis- The Theory of Calculus Series- Undergraduate Texts in Mathematics, Springer Verlag, 2003.

FOURIER SERIES AND INTEGRAL TRANSFORMS

UNIT	Details
I	Fourier Series–Definition –Fourier coefficients and Fourier series for a given periodic function with period 2π and $2l$, odd and even functions – Convergence of Fourier series. (Book1 -Chapter1:Sections -1.4 to 1.8)
II	Half range Fourier series – Parseval’s theorem – Root-Mean square value of a function – Harmonic analysis – Complex form of Fourier series. (Book1 -Chapter 1: Sections -1.9to1.12)
III	Fourier Transforms–Fourier Integral theorem–Fourier sine and cosine transforms–Properties of Fourier transform–Convolution theorem–Parseval’s Identity. (Book1-Chapter2: Sections -2.2to 2.6))
IV	Laplace Transforms – Definition – Results – Laplace transform of periodic functions – Some general Theorems – Evaluation of certain integrals. (Book2-Chapter9:Sections -1to5)
V	The Inverse Transform – Results – Solving ordinary differential equations with constant coefficients, simultaneous linear differential equations and differential equations with variable coefficients by Laplace Transform. (Book2-Chapter9:Sections -6to 10)
Reference Books	<ol style="list-style-type: none"> 1. M.K.Venkataraman and Manorama Sridhar, Vector Calculus and Fourier Series, The National Publishing Company, Chennai-1, 2002. 2. J.Ray Hanna, Fourier Series, Transforms and Boundary value Problems, Dover Publications, New York, 2008. 3. P. R. Mittal, Differential Equations, Fourier and Laplace Transforms, Probability, Margham Publications, Chennai, 2012. 4. S.Arumugam A.Thangapandi Issac, Trigonometry and Fourier Series.

NUMERICAL METHODS

UNIT	Details
I	Finite Differences: Difference Operators–Other Difference Operators – Error propagation in a difference table. (Chapter 6: Sections -6.1 to 6.3)
II	Interpolation: Newton’s Interpolation Formulae – Central Difference Interpolation Formulae: Gauss Forward and Backward and Sterling’s (only) – Lagrange’s Interpolation Formula – Divided Differences– Newton’s Divided Differences formula. (Chapter 7: Sections-7.1 to 7.5) [Except Bessel’s and Laplace Everett’s formulae in 7.2]
III	Numerical Differentiation and Integration: Derivatives using Newton’s forward difference formula–Derivatives using Newton ‘sbackward difference formula – Derivatives using central difference formula – Maxima and Minima of theInterpolating polynomial–Numerical Integration. (Chapter 8: Sections - 8.1 to 8.5)
IV	Numerical Solutions of Ordinary Differential Equations: Taylor’s Series Method – Picard’s method – Euler’s method – Runge - Kutta method. (Chapter 10: 10.1 to 10.4)
V	Numerical Solutions of Ordinary Differential Equations: Predictor Corrector method – Milne’s Method – Adams-Bash forth method. (Chapter 10: Sections– 10.5to 10.7)
Reference Books	<ol style="list-style-type: none"> 1. R.M. Somasundaram and R.M. Chandrasekaran, Numerical Methods with C++ Programming, Prentice Hall India Pvt. Ltd., New Delhi, 2005. 2. S. S. Sastry, Introductory Methods of Numerical Analysis, Fourth Edition, PHI Learning Private Limited, New Delhi-1, 2009. 3. Pallab Ghosh, Numerical Methods with Computer Programs in C++, Prentice Hall IndiaPvt. Ltd.,New Delhi,2009. 4. T.Veerarajan and T.Ramachandran, Numerical Methods with Programs in C, Second Edition, McGraw Hill Education Pvt. Ltd, New Delhi, 2006.

GEO GEBRA

UNIT	Details
I	Installation and Introduction of Geo Gebra-Drawing versus Geometric Construction. (Chapters:1 and 2)
II	Practice Block I–Basic Algebraic Input, Commands and Functions. (Chapters: 3 and 4)
III	Export of Pictures to the Clipboard–Practice Block II–Inserting Pictures into the Graphics View. (Chapters:5,6 and 7)
IV	Inserting Text in to the Graphics View–Practice Block III. (Chapters:8and 9)
V	Combining Spread sheet View & Graphics View – Creating Static Instructional Materials – Creating Dynamic Worksheets. (Chapters:10,11 and 12)
Reference Books	1.Steve Phelps, An Introduction to Geo Gebra, 2011.

OFFICE AUTOMATION

UNIT	Details
I	MS-WORD: View of Microsoft Word Window – Creating a New Document – Editing text – Moving and copying text and object – Using Clipboard – Formatting. (Unit 5: Sections-5.1 to 5.7)
II	MS-WORD: Finding and Replacing Text–Working with Table, Chart and Excel Spreadsheet in MSWord – Inserting Charts– Correcting spelling and grammatical errors. (UNIT6: Sections- 6.1 to 6.4)
III	MS-WORD: Charts–Screenshots–MailMerge.MS-EXCEL: Creating a new document – Saving a document – Work Sheet - (UNITS 7 & 8: Sections -7.3 to 7.5 and 8.1 to 8.3)
IV	MS-EXCEL: Formatting–Formatting Rows and Columns– Functions in Formula – Formulas and Functions. (UNIT 8: Sections -8.4 to 8.7)
V	MS-POWER POINT: Normal View – PowerPoint Slide – Applyinga Theme– Text–Savinga Presentation–Power Pointview–Slide Show – Adding audio content to slides. (UNITS 10 & 11: Sections - 10.2 to 10.6 ,11.1, 11.5, 11.6)
Reference Books	https://baou.edu.in/assets/pdf/BSCIT_103_slm.pdf https://www.msuniv.ac.in/images/academic/departments//information_technology/econtent/6_Computer_Fundamentals_and_Office_Automation.pdf

VALUE BASED EDUCATION

(Common Syllabus)

UNIT	Details
I	<p>Introduction to Value based Education</p> <p>a. Value: meaning and Classification b. Value based Education: Meaning, Characteristics, Components and Contents c. Value Erosion and Inculcation: Value crises in social life, economic life, and political life - Value inculcation: need and importance - Role of Parents and Teachers in inculcating values.</p>
II	<p>Harmony in Being and Living</p> <p>a. Harmony of the self (I) with the body: Nurturing of the body- Understanding myself as co-existence of the self and the body- Understanding needs of self and needs of the body- Understanding the activities in the self and activities in the body. b. Harmony in the Family, Society and Nature: Family as a basic unit of human interaction and values in relationships - Affection, care, guidance, reverence, Glory, gratitude, and love – Harmony in society: Justice preservation, Production Work, Exchange Storage Harmony in nature: four orders in nature- The holistic perception of harmony in existence.</p>
III	<p>Social Issues, Social Justice and Human Rights</p> <p>Social issues – causes and magnitude - alcoholism, drug addiction, poverty, Unemployment Social Justice: Definition and need – factors responsible for social injustice: caste and gender – contributions of social reformers. Human Rights: Concept and Principles of human rights – human rights and Indian constitution – Rights of Women and children – violence against women</p>
IV	<p>Values and Mass Media</p> <p>Mass media: Meaning, functions and characteristics – Effects and Influence on youth and children – Media Power – socio, cultural and political consequences of mass mediated culture - consumerist culture – Globalization – new media-prospects and challenges – Role of media in value building</p>
V	<p>Ethics</p> <p>Ethics: Meaning and importance Social ethics: tolerance, equity, justice for all, sensitivity towards mankind, love for nature and creatures, nationalism-love for nation, pride for nation, Honour to the law, Indian culture and traditions – Civic Sense: Being a good civilian Professional Ethics: Dedication to work and duty – Commitment to the Profession.</p>
Reference	<p>1. Allport, G.W., Vernon, P.E., and Lindzey, G. (1970) study of values, Busto: Houghton Mifflin.</p>

2. Central Board of Secondary Education (1997), Value Education: A Handbook for Teachers, Delhi: Central Board of Secondary Education.
3. Delors, J. (1996), Learning: The Treasure within- Report of the International Commission on Education for the Twenty-First Century, Paris: UNESCO.
4. Morris, Charles W. (1956). Varieties of Human Values. Chicago: University of Chicago Press.
5. Shukla, R.P.(2005). Value Education and Human Rights. Sarup & Sons, New Delhi
6. Satchidananda. M.K. (1991), "Ethics, Education, Indian Unity And Culture" – Delhi, Ajantha Publications
7. Saraswathi. T.S. (Ed) 1999. "Culture", Socialisation And Human Development: Theory, Research And Application In India" – New Delhi Sage Publications.
8. Venkataiah. N (Ed) 1998, "Value Education" New Delhi Ph. Publishing Corporation.
9. Chakraborti, Mohit (1997) "Value Education: Changing Perspectives" New Delhi: Kanishka Publications.
10. Adithya Shetty and K.Pushpanandan Rao (2000): as quoted in Jayarami Reddy, B., (2010): "Values of B.Ed. teacher trainees in relation to certain psycho-sociological variables in Andhra Pradesh", Unpublished Ph.D. Thesis, Department of Education, S.V.University, Tirupati,
11. Amareswaran, N. (2009): "Moral values of intermediate students", Published Ph.D. Thesis, Department of Education, S.V. University, Tirupati.
12. Chetty, K. M. (2004): "Perspective of value oriented education" paper presented at UGC National Seminar on value oriented education, organized by Dept. of education, S.V.University, Tirupati.
13. Chhaganlal, Nandini Man Sukhbai (1992): "A study of the value, adjustment, attitude in the teaching profession and academic achievement of researchers' children as compared to non-teachers children". [Ph.D. Edu. Saurashtra University]
14. Mahatma Gandhi at Wardha Conference (1937) : as quoted in Gawande, E. N., (1994): "Value oriented education vision for better living", Sarup and Sons Publishers 4740/23, Ansari Road, Darya Colony, New Delhi, p. 9.
15. Mohan Reddy (2011): "An analytical study of attitude of intermediate students towards value oriented education in relation to certain psycho-sociological variables", Ph.D. theses, S.V.University, Tirupati.
16. Rajasekhar Reddy (2002) quoted in Nagarjuna, T.I. (2009): "A study of attitudes of DIET students towards value oriented education in relation to intelligence, personality and other variables", Published Ph.D. Thesis, Department of Education, S.V. University, Tirupati.
17. Rajagopal (1989) quoted in Yella Reddy, B. (2009): "A study of moral judgment of intermediate students in relation to certain factors", Published Ph.D. thesis, S.V.University, Tirupati.
18. Awasthi D. Value based Education is the only solution to the problem of Crisis of Moral Values among the youth of India. Retrieved from: worldwide, 2014. journals.com/gra/file:php? 2014. 1411110022_81.pdf.
19. Brubacher, J.S. Modern Philosophies of Education, McGraw Hill Book Company, INC, New York, 1950, Pp.93-95.
20. Chetty, K.M., Value Education: A Conceptual Analysis, 70th Session of

	<p>Indian Philosophical Congress, Haridwar, 1995, Pp.3-4.</p> <ol style="list-style-type: none">21. Dr. Jangaiah, C. Values Classification, APH Publishing Corporation, New Delhi, 1998, .22. Prahallada, N.N, Value Education in India. Association of Indian Universities, New Delhi, 2000.23. Rohidekar, S.R. Inculcation of values-how? APH Publishing Corporation, New Delhi, 1998.24. Seshadri, C. Education in Values, APH Publishing Corporation, New Delhi, 1998, Pp.47- 48.
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