



MANONMANIAM SUNDARANAR UNIVERISTY,
TIRUNELVELI-12

SYLLABUS

UG - COURSES – AFFILIATED COLLEGES

Course Structure for B. Sc. Mathematics

(Choice Based Credit System)

(with effect from the academic year 2024-2025 onwards)



Semester-II				
Part	Subject Status	Subject Title	Subject Code	Credit
I	LANGUAGE	TAMIL/MALAYALAM/HINDI		3
II	ENGLISH	ENGLISH		3
III	CORE	ANALYTICAL GEOMETRY (TWO & THREE DIMENSIONS)		4
III	CORE	INTEGRAL CALCULUS		4
III	ELECTIVE	ALLIED PHYSICS II		3
		ALLIED PHYSICS PRACTICAL II		2
IV	SEC 2	MATHEMATICS FOR COMPETITIVE EXAMINATION 2		1
IV	SEC 3	LATEX		1
IV	NAAN MUDHALVAN	(SUBSTITUTE COURSE: MATHEMATICS FOR COMPETITIVE EXAMINATION III)		2



Total Marks: 100 Internal Exam: 25 marks + External Exam: 75 marks

A. Scheme for internal Assessment:

Maximum marks for written test: **20 marks**

3 internal tests, each of **1 hour** duration shall be conducted every semester.

To the average of the **best two** written examinations must be added the marks scored in. The **assignment** for 5 marks.

The break up for internal assessment shall be:

Written test- 20 marks; Assignment -5 marks Total - 25 marks

B. Scheme of External Examination

3 hrs. examination at the end of the semester

A – Part : 1 mark question two - from each unit

B – Part : 5 marks question one - from each unit

C – Part : 8 marks question one - from each unit

➤ **Conversion of Marks into Grade Points and Letter Grades**

S.No	Marks	Letter Grade	Grade point (GP)	Performance
1	90-100	O	10	Outstanding
2	80-89	A+	9	Excellent
3	70-79	A	8	Very Good
4	60-69	B+	7	Good
5	50-59	B	6	Above Average
6	40-49	C	5	Pass
7	0-39	RA	-	Reappear
8	0	AA	-	Absent

➤ **Cumulative Grade Point Average (CGPA)**

$$CGPA = \frac{\Sigma (GP \times C)}{\Sigma C}$$

- **GP** = Grade point, **C** = Credit
- CGPA is calculated only for Part-III courses
- CGPA for a semester is awarded on cumulative basis

➤ **Classification**

- First Class with Distinction : CGPA \geq 7.5*
- First Class : CGPA \geq 6.0
- Second Class : CGPA \geq 5.0 and $<$ 6.0
- Third Class : CGPA $<$ 5.0



PART I – TAMIL

பொதுத்தமிழ் 2

தமிழ் இலக்கிய வரலாறு 2

அலகு 1: தமிழ் இலக்கிய, இலக்கண வரலாறு அறிமுகம்.

1. சிற்றிலக்கியம்: குறவஞ்சி, கலம்பம், உலா, பரணி, பள்ளு, பிள்ளைத்தமிழ், தூது, அந்தாதி.
2. தனிப்பாடல் அறிமுகம்
3. இக்கால இலக்கியம்: கவிதை, சிறுகதை, நாடகம், உரைநடை, திராவிட இயக்கம் வளர்த்த தமிழ்

அலகு 2 சிற்றிலக்கியமும், தனிப்பாடலும்

சிற்றிலக்கியம்:

1. கலிங்கத்து பரணி-விருந்தினரும் வரியவரு நெருங்கி யுண்ணரும் - முதல் - கேட்பாரைக் காண்மின் காண்மின் - வரை
2. திருக்குற்றாலக் குறவஞ்சி - வானரங்கள் கனிகொடுத்து
3. முக்கூடற் பள்ளு - ஆற்று வெள்ளம் நாளை வரத்
4. அபிராமி அந்தாதி - கலையாத கல்வியும் குறையாத வயதும் (பதினாறு செல்வங்கள்)
5. திருவரங்கக் கலம்பம் - மறம் - பிள்ளைப் பெருமாள் ஐயங்கார்-பேசுவந்த தூத செல்லரித்த ஓலை சொல்லுமோ
6. தமிழ்விடு தூது முதல் பத்து கண்ணிகள்

தனிப்பாடல்

1. வான்குருவி யின்கூடு - ஒளவையார்
2. ஆமணக்குக்கும் யானைக்கும் சிலேடை: முதிருக்கும் கொம்பசைக்கும் மூரித்தண்டே-காளமேகப் புலவர்
3. இம்பார் வான் எல்லை இராமனையே பாடி - வீரராகவர்
4. நாராய் நாராய் முத்தப் புலவர்

அலகு 3 இக்கால இலக்கியம் - 1

1. பாரதியார் பாரத சமுதாயம் வாழ்கவே
2. பாரதிதாசன் - சிறுத்தையே வெளியில் வா
3. நாமக்கல் கவிஞர் - கத்தியின்றி
4. தமிழ் ஒளி - மீன்கள் (அந்தி நிலா பார்க்க வா)
5. ஈரோடு தமிழன்பன் - எட்டாவது சீர் (வணக்கம் வள்ளுவ)

சிறுகதைகள்

1. புதுமைப்பித்தன் - கடிதம்
2. ஜெயகாந்தன் - வாய்ச் சொற்கள் (மாலை மயக்கம் தொகுப்பு)
3. ஆர். சூடாமணி - அந்நியர்கள்

உரைநடை :

1. மு. வ கடிதங்கள் - தம்பிக்கு நூலில் முதல் இரண்டு கடிதங்கள்



அலகு 4 இக்கால இலக்கியம் 2

1. தந்தை பெரியார் - திருக்குறள் (மாநாட்டு) உரை
2. பேரறிஞர் அண்ணா - இரண்டாம் உலகத் தமிழ் மாநாட்டு உரை
3. கலைஞர் மு. கருணாநிதி - தொல்காப்பிய பூங்கா-எழுத்து-முதல் நூற்பா கட்டுரை

நாடகம் /திரைத்தமிழ்:

1. வேலைக்காரி - திரைப்படம்
2. ராஜா ராணி - சாக்ரடீஸ் - ஓரங்க நாடகம்

இதழியல் தமிழ்:

முரசொலி கடிதம்

1. செம்மொழி வரலாற்றில் சில செப்பேடுகள்

அலகு 5 மொழிப் பயிற்சி

சொல் வேறுபாடு / பிழை தவிர்த்தல்

வாசிப்பது - வாசிப்பாளர்

சுவர் - சுவரில்

வயிறு - வயிற்றல்

கோயில் - கோவில்

கரறுப்பு - கருப்பு

இயக்குநர் - இயக்குனர்

சில்லறை - சில்லரை

முறித்தல் - முரித்தல்

மனம் - மனசு - மனது

அருகில் - அருகாமையில்

அக்கரை - அக்கறை

மங்கலம் - மங்களம்

பயிற்சி:

1. பிழையான சொற்களை ஒரு பத்தியில் கொடுத்து அந்தந்தப் பிழையான சொற்களைச் சரியாக எழுதச் செய்தல்
2. சிறிய பத்தி ஒன்றை ஆங்கிலத்தில் கொடுத்து அதனைத் தமிழில் மொழிபெயர்க்க வைத்தல்

Text Books:

1. பிழையான சொற்களைச் சரியாக எழுதச் செய்தல்
2. சிறிய பத்தி ஒன்றை ஆங்கிலத்தில் கொடுத்து அதனைத் தமிழில் மொழிபெயர்க்க வைத்தல்

Reference Books:

- மு. வரதராசன், தமிழ் இலக்கிய வரலாறு, சாகித்ய அக்காதமி, புதுடெல்லி
- மது. ச. விமலானந்தன், தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
- தமிழண்ணல், புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
- தமிழ் இளகிய வரலாறு - முனைவர் சிற்பி பாலசுப்ரமணியன், முனைவர்.சொ. சேதுபதி
- புதி யதமிழ் இலக்கிய வரலாறு - முனைவர் சிற்பி பாலசுப்ரமணியன், நீல. பத்மநாபன்

Web Sources:

- இணைய தமிழ் நூலகம் - சென்னை நூலகம் - Online Tamil Library - ChennaiLibrary.com
- [முகப்பு - சிறுகதைகள் \(sirukathaigal.com\)](http://முகப்பு - சிறுகதைகள் (sirukathaigal.com))
- www.tamilvirtualuniversity.org
- [Buy tamil books online 10% to 50% discount, Tamil Novels, Tamil Audio Books online - Buy tamil books online - Established 2010 \(noolulagam.com\)](http://Buy tamil books online 10% to 50% discount, Tamil Novels, Tamil Audio Books online - Buy tamil books online - Established 2010 (noolulagam.com))
- www.katuraitamilblogspot.com



MALAYALAM

PAPER- II Office Communication Malayalam

Learning Objectives

- To give compressive view of communication and its scope and importance in official communication and business communication
- To recall the official writing styles
- To understand different kinds of letter drafting
- To Generalize office keeping and data management
- To differentiate the structural and content variations both official and non-official communication
- To compare the different style of letters based on domains
- To Conceptualize the different trends in computer network and social media

UNITS I

This unit introduces basic communication skills in Malayalam. Salutation, Discourse markers, formal and informal communication strategies, principles of communication, reading and analysis are also introduced

Language-oral and written-importance of languages-formal and informal – communication style in written communication-principles of written communication Text-messages-Email-letter drafting- different types of letter drafting personal letters- -Business letters Official letters—letter to the editor memorandums- Bio data-Reports-press conference-business proposal

UNIT II

This unit introduces - word processing and Editing text Auto correct spell check & grammar check, undo & redo Text formatting Changing case, drop caps, coloring & highlighting text, adding special characters, bullets & numbering

Document formation compositional and typographical ways. Advanced page layout in word Borders, box, shading, page fills & back ground Module and Table & columns Creating tables Inserting tables from the menu & tool bar, drawing tables Manipulating tables Selecting tables elements, inserting & deleting columns & rows, adjusting table properties, are introduced . This unit introduces the Printing word documents Using print preview. Practical knowledge in different fonts and Unicode

UNIT III

This Unit Introduces blog writing, technical writing, content editing, Proof reading, news making, advertisement writing (Writing for career)



UNIT IV

Official language- Malayalam

Detailed study-

1. Malayalam nammude mathru bhasha.- Bharana bhasha prasnangal- M.V.Thomas,State Institute of languages.
2. Bharanam janakeeya bhashayil- Bharana bhasha prasnangal M.V.Thomas-State Institute of languages
3. Deseeyodgrathanam pradesika bhashakaliloode -Bharana bhasha prasnangal M.V.Thomas,State Institute of languages
4. Bhasha samraajyam srishtikkum--- Bhashayum bharanabhashayum Dr.Ezhumattoor Raja raja Varmma ,State Institute of languages
5. Swathanthryathinte Kodiyadayalam- Bhashayum bharanabhashayum Dr.Ezhumattoor Raja raja Varmma, State Institute of languages
6. Bharanaghatana vyavasthakal- Bhashayum bharanabhashayum- Dr.Ezhumattoor Rajaraja Varmma, State Institute of languages
7. Malayala dinaghoshavum Bharanabhashavaraghoshavum Bhashayum bharanabhashayum-Dr.Ezhumattoor Rajaraja Varmma, State Institute of languages

UNIT V

This unit introduces Malayalam for Competitive Exams. Reading comprehension, reasoning , inferential comprehension, analogical creations(Competitive Malayalam) Malayalam for language Specific Exams for writing UPSC, PSC exams

Reading List (Print and Online)

1. Bharana bhasha prasnangal- M.V.Thomas-State Institute of languages
2. Business Communication for Success: Publisher: University of Minnesota Libraries Publishing
3. Vanijyaparamaya kathidapadukal,G.R.Pilla .State Institute of languages
4. Bhashayum bharanabhashayum-Dr.Ezhumattoor Rajaraja Varmma,



HINDI

Kahani, Ekanki aur Vyakaran

Course Objectives

The Main Objectives of this course are to:

- Introduction to Hindi fiction
- Teaching of social values through stories and skits
- Practical application of grammar

Unit I

Hindi Katha-Sahitya: Parichay

- Kahani ke Tatva
- Hindi ke Pramukh kahanikaro ka Parichay
- Ekanki ke Tattva
- Hindi ke Pramukh Ekankikaro ka Parichay

Unit II

Hindi Kahaniya

- Premchand – Bade Ghar ki Beti
- Malathi Joshi – Vo Tera Ghar Yah Mera Ghar
- Pita - Gyanranjan

Unit III

Hindi Ekanki

- Lakshmi ka Swagat – Upendranath Ashk
- Vibhajan – Vishnu Prabhakar
- Maa Baap – Sri Vishnu

Unit IV

Vyakaran

- Kriya Visheshan
- Sambandh Bodhak
- Samuchay Bodhak
- Vismayadi Bodhak aadi shabdo ka prayog

Unit V

Pratiyogi Pariksha par aadharit Nimnalikhit Vishayo se sambandhit Prashikshan Karya

- Tamil Bhasha: Mahakavi Bharatiyar
- Sanket Vikas dwara Lekhan kala aur Kahani Lekhan ka Vikas
- Gadyansh dekhkar sahi Shirshak chunna
- Pathit Vyakaran par aadharit Vakya rachna
- Vibhinna Pratiyogi parikshao ke bare mein suchna pradan dena

Reference Books

1. Aath Ekanki Natak – Ed. Dr. Ramkumar Verma
2. Das Ekanki

Related Online Contents (MOOCs, SWAYAM, NPTEL, YouTube, Websites, etc.)

1. Lokpriya Kahaniya: <https://www.hindwi.org/sangrahaalay/100-best-storiesin-hindii>
2. Vo Tera Ghar Ye Mera Ghar:
http://gadyakosh.org/gk/%E0%A4%B5%E0%A5%8B_%E0%A4%A4%E0%A5%87%E0%A4%B0%E0%A4%BE_%E0%A4%98%E0%A4%B0_%E0%A4%AF%E0%A5%87_%E0%A4%AE%E0%A5%87%E0%A4%B0%E0%A4%BE_%E0%A4%98%E0%A4%B0_%E0%A4%AE%E0%A4%BE%00%A4%B2%E0%A4%A4%E0%A5%80_%E0%A4%9C%E0%A5%8B%E0%A4%B6%E0%A5%80
3. <https://hindistory.net/>



Part II English

GENERAL ENGLISH - II

Learning Objectives

- To make students realize the importance of resilience
- To enable them to become good decision makers
- To enable them to imbibe problem-solving skills
- To enable them to use tenses appropriately
- To help them use English effectively at the work place.

UNIT I

RESILIENCE

Poem

- 1.1 Don't Quit – Edgar A. Guest
- 1.2 Still Here – Langston Hughes

Short Story

- 1.3 Engine Trouble – R.K. Narayan
- 1.4 Rip Van Winkle – Washington Irving

UNIT II

DECISION MAKING

Short Story

- 2.1 The Scribe – Kristin Hunter
- 2.2 The Lady or the Tiger - Frank Stockton

Poem

- 2.3 The Road not Taken – Robert Frost
- 2.4 Snake – D. H Lawrence

UNIT III

PROBLEM SOLVING

Prose life Story

- 3.1 How I taught My Grandmother to Read – Sudha Murthy

Autobiography

- 3.3 How frog Went to Heaven – A Tale of Angolo
- 3.4 Wings of Fire (Chapters 1,2,3) by A.P.J Abdul Kalam

UNIT IV

Tenses

- 4.1 Present
- 4.2 Past
- 4.3 Future
- 4.4 Concord

UNIT V

English in the Workplace

- 5.1 E-mail – Invitation, Enquiry, Seeking Clarification
- 5.2 Circular
- 5.3 Memo
- 5.4 Minutes of the Meeting



Text Books (Latest Editions)**References Books**

1. Martin Hewings. Advanced English Grammar. Cambridge University Press, 2000
2. SP Bakshi, Richa Sharma. Descriptive English. Arihant Publications (India) Ltd., 2019.
3. Sheena Cameron, Louise Dempsey. The Reading Book: A Complete Guide to Teaching Reading. S & L. Publishing, 2019.
4. Barbara Sherman. Skimming and Scanning Techniques, Liberty University Press, 2014.
5. Phil Chambers. Brilliant Speed Reading: Whatever you need to read, however. Pearson, 2013.
6. Communication Skills : Practical Approach Ed. Shaikh Moula Ramendra Kumar. Stories of Resilience, Blue Rose Publications, 2020.

Web Sources

1. Langston Hughes. Still Here
<https://poetryace.com/im-still-here>
2. R. K. Narayan. Engine Trouble
<http://www.sbioaschooltrichy.org/work/Work/images/new/8e.pdf>
3. Washington Irving. Rip Van Winkle
<https://www.gutenberg.org/files/60976/60976-h/60976-h.htm>
4. Frank Stockton. The Lady or the Tiger <https://www.gutenberg.org/ebooks/396>

ANALYTICAL GEOMETRY (Two & Three Dimensions)**Objectives of the Course**

- Necessary skills to analyze characteristics and properties of two- and three-dimensional geometric shapes.
- To present mathematical arguments about geometric relationships.
- To solve real world problems on geometry and its applications.

UNIT I

Pole, Polar- conjugate points and conjugate lines – diameters –conjugate diameters of an ellipse –Semi diameters –Conjugate diameters of hyperbola – Related problems only. (Book 1: Chapters: 9 and 10)

UNIT II

Polar coordinates: General polar equation of straight line – Polar equation of a circle given a diameter, Equation of a straight line, circle, conic–Equation of chord, tangent, normal. (Book 2: Chapter 9: Sections - 1 to 3, 5 to 10, 12)



UNIT III

System of Planes – Length of the perpendicular–Orthogonal projection.

(Book 3: Chapter 2: Sections - 1 to 11)

UNIT IV

Representation of line– Angle between a line and a plane – coplanar lines– Shortest distance between two skew lines– Length of the perpendicular.

(Book 3: Chapter 3: Sections - 1 to 8)

UNIT V

Equation of a sphere- General equation – Section of a sphere by a plane – Equation of the circle –Tangent plane –Angle of intersection of two spheres –Condition for the orthogonality. (Book 3: Chapter 4: Sections - 1 to 8)

Recommended Text

1. P.R. Mittal and V. Malini, Analytical Geometry & Trigonometry, Margam Publications, 2018.
2. T.K. Manicavachagom Pillay and T. Natarajan, Analytical Geometry (Part I – Two dimensions), S. Viswanathan Printers and Publishers Pvt. Ltd., 2012.
3. T.K. Manicavachagom Pillay and T. Natarajan, Analytical Geometry (Part II- Three dimensions), S.Viswanathan (Printers and Publishers) Pvt. Ltd., 2012.

Reference Books

1. S.L.Loney, Co-ordinate Geometry.
2. Robert J.T.Bell, Co-ordinate Geometry of Three Dimensions.
3. William F. Osgood and William C. Graustein, Plane and Solid Analytic Geometry, Macmillan Company, New York, 2016.
4. Calculus and Analytical Geometry, G.B.Thomas and R.L.Finny, Pearson Publication, 9th Edition, 2010.
5. Robert C. Yates, Analytic Geometry with Calculus, Prentice Hall, Inc., New York, 1961.
6. Earl W. Swokowski and Jeffery A. Cole, Algebra and Trigonometry with Analytic Geometry, Twelfth Edition, Brooks/Cole, Cengage Learning, CA, USA, 2010.
7. William H.Mc Crea, Analytical Geometry of Three Dimensions, Dover Publications, Inc, New York, 2006.
8. John F. Randelph, Calculus and Analytic Geometry, Wadsworth Publishing Company, CA, USA,1969.
9. Ralph Palmer Agnew, Analytic Geometry and Calculus with Vectors, McGraw-Hill Book Company, Inc. New York, 1962.



Website and e-Learning Source

1. <https://nptel.ac.in>

INTEGRAL CALCULUS**Objectives of the Course**

- Knowledge on integration and its geometrical applications, double, triple integrals and improper integrals.
- Knowledge about Beta and Gamma functions and their applications.
- Skills to Determine Fourier series expansions.

UNIT I

Reduction formulae – Types, integration of product of powers of algebraic and trigonometric functions, integration of product of powers of algebraic and logarithmic functions – Bernoulli's formula.

(Chapter 1: Sections -13 to 15)

UNIT II

Multiple Integrals–Definition of double integrals– Evaluation of double integrals – Double integrals in polar coordinates – Change of order of integration.

(Chapter 5: Sections - 1, 2.1, 2.2, 3.1, 3.2)

UNIT III

Triple integrals –Applications of multiple integrals –Areas of curved surfaces–Change of variables – Jacobian. (Chapter 5:Sections - 4, 5.1 to 5.4, 7;Chapter 6: Sections-1, 2)

UNIT IV

Beta and Gamma functions – infinite integral –Definitions– Recurrence formula of Gamma functions – Properties of Beta and Gamma functions- Relation between Beta and Gamma functions - Applications. (Chapter 7: Sections - 2.1 to 2.3 and 3 to 6)

UNIT V

Geometrical Applications of Integral calculus: Area – Volume – Length of a curve – Area of surface of revolution. (Chapter 2:Sections -1.1 to 1.4, 3, 4, 5)

Recommended Text

1. S. Narayanan and T.K. Manicavachagom Pillay, Calculus Vol II, S.Viswanathan (Printers and Publishers) Pvt. Ltd., 2012.

Reference Books

1. H.Anton, I.Birens and S. Davis, Calculus, John Wiley and Sons, Inc., 2002.



2. G.B.Thomas and R.L. Finney, Calculus, Pearson Education,2007.
3. D.Chatterjee, Integral Calculus and Differential Equations, Tata- McGraw Hill Publishing Company Ltd.
4. P.Dyke, An Introduction to Laplace Transforms and Fourier Series, Springer Undergraduate Mathematics Series, 2nd Edition, 2001.

Website and e-Learning Source

1. <https://nptel.ac.in>

ALLIED PHYSICS –II

COURSE OBJECTIVES

- To understand the basic concepts of optics, modern Physics, concepts of relativity and quantum physics, semiconductor physics, and electronics.

UNIT-I

OPTICS: interference – interference in thin films –colors of thin films – air wedge – determination of diameter of a thin wire by air wedge – diffraction – normal incidence – experimental determination of wavelength using diffraction grating (no theory) – polarization – polarization by double reflection – Brewster’s law – optical activity – application in sugar industries

UNIT-II

ATOMIC PHYSICS: atom models – Bohr atom model – mass number – atomic number – nucleons – vector atom model – various quantum numbers – Pauli’s exclusion principle – electronic configuration – Bohr magneton – Stark effect – Zeeman effect

UNIT-III

NUCLEAR PHYSICS: nuclear models – liquid drop model – magic numbers– nuclear energy – mass defect – binding energy – radioactivity – uses – half life – mean life - radio isotopes and uses nuclear fission – chain reaction – critical reaction – critical size- atom bomb - introduction to DAE, IAEA – nuclear fusion – thermonuclear reactions – differences between fission and fusion.

UNIT-IV

INTRODUCTION TO RELATIVITY

Frame of reference – postulates of special theory of relativity – Galilean transformation equations – Lorentz transformation equations – derivation – length contraction – time dilation –

UNIT-V

SEMICONDUCTOR PHYSICS: p-n junction diode – forward and reverse biasing –



characteristic of diode – zener diode – characteristic of zener diode – voltage regulator – full wave bridge rectifier – construction and working – advantages (no mathematical treatment) – USB cell phone charger

TEXT BOOKS

1. R.Murugesan (2005), Allied Physics, S.Chand and Co, New Delhi.
2. K.Thangaraj and D.Jayaraman (2004), Allied Physics, Popular Book Depot, Chennai.
3. Brijlal and N.Subramanyam (2002), Textbook of Optics, S.Chand and Co, NewDelhi.
4. R.Murugesan (2005), Modern Physics, S.Chand and Co, NewDelhi.
5. A.Subramaniyam Applied Electronics, 2nd Edn., National Publishing Co.,Chennai.

REFERENCE BOOKS

1. Resnick Halliday and Walker (2018), Fundamentals of Physics, 11th Edn., John Willey and Sons, Asia Pvt. Ltd., Singapore.
2. D.R.Khanna and H.R. Gulati (1979).Optics, S.Chand and Co. Ltd., New Delhi.
3. A.Beiser (1997), Concepts of Modern Physics, Tata Mc Graw Hill Publication, NewDelhi.
4. Thomas L. Floyd (2017), Digital Fundamentals, 11th Edn., Universal Book Stall, NewDelhi.
5. V.K.Metha (2004), Principles of electronics, 6th Edn. ,S.Chand and Company, New Delhi.

WEB RESOURCES

1. https://www.berkshire.com/learning-center/delta-p-facemask/https://www.youtube.com/watch?v=QrhxU47gtj4https://www.youtube.com/watch?time_continue=318andv=D38BjgUdL5Uandfeature=emb_logo
2. <https://www.youtube.com/watch?v=JrRrp5F-Qu4>
3. <https://www.validyne.com/blog/leak-test-using-pressure-transducers/>
4. <https://www.atoptics.co.uk/atoptics/blsky.htm>
5. <https://www.metoffice.gov.uk/weather/learn-about/weather/optical-effects>

ALLIED PRACTICAL– II

COURSE OBJECTIVES

- Apply various Physics concepts to understand concepts of Light, electricity and magnetism and waves, set up experimentation to verify theories, quantify and analyse, able to do error analysis and correlate results

Minimum of SIX Experiments from the list:

1. Radius of curvature of lens by forming Newton’s rings
2. Spectrometer-grating—normal incidence method
3. LCR Series resonance circuit



4. LCR Parallel resonance circuit
5. Determination of AC frequency using sonometer
6. Thermal conductivity of poor conductor using Lee's disc
7. Determination of figure of merit table galvanometer
8. Characterisation of Zener diode
9. Construction of Zener regulated power supply
10. Verification of truth tables of basic logic gates using ICs
11. Verification of De Morgan's theorems using logic gate ICs.
12. Deflection Magnetometer (Tan A)

Note : Use of digital balance, digital screw gauge, digital calipers are permitted

MATHEMATICS FOR COMPETITIVE EXAMINATION II

Objectives of the Course

- To learn the techniques for solving aptitude problems. Also to motivate the students for attending various competitive examinations.

UNIT I: Chain Rule.

UNIT II: Time and work.

UNIT V: Pipes and Cistern.

UNIT III: Time and Distance.

UNIT V: Simple interest and Compound interest.

Recommended Text

1. R.S. Agarwal-Objective Arithmetic, Published by S.Chand & Co, Ltd., Edition (2018).

Reference Books

1. Rajesh Verma- Fasttrack Objective arithmetic, Arihant Publications (India) Limited., Fourth Edition 1st January 2018.
2. R.S.Aggarwal, Arithmetic Subjective and objective, Published by S.Chand and Co. Ltd. Revised Edition.1st April 2017.

Website and e-Learning Source

1. <https://nptel.ac.in>

LaTeX

Objectives of the Course

- To introduce coding and decoding concepts. Also to develop the students in the field of coding theory

UNIT I

LaTeX – Sample Files, Editing Cycle, Three productivity tools, Typing text, Typing



Math, Anatomy of an article, Sectioning, Invoking proclamations, Inserting references, LaTeX error messages.

(Chapter 1: Sections - 1.2 to 1.4; Chapter 2: Sections - 2.1 to 2.4; Chapter 3: Sections - 3.1 to 3.4; Chapter 4: Sections - 4.1, 4.2.2 to 4.2.4, 4.3.1)

UNIT II

Typing Text: The keyboard, Word Sentences and paragraphs, Symbols not on the keyboard (Quotation marks, Dashes, Special Characters – only), Comments and footnotes.

(Chapter 5: Sections - 5.1, 5.2, 5.4.1, 5.4.2, 5.4.4, 5.5)

UNIT III

Typing Text: Changing Font Characteristics, Lines paragraphs and pages.

(Chapter 5: Sections - 5.6, 5.7)

UNIT IV

Text Environments: Some general rules for displayed text environments, Lists environments, Style and size environments, Proclamations (theorem-like structures), Proof environments, Tabular environments.

(Chapter 6: Sections - 6.1 to 6.6)

UNIT V

Typing Math: Math environments, Spacing Rules, Equations, Basic Constructs, Delimiters, Operators. (Chapter 7: Sections - 7.1 to 7.6)

Recommended Text

1. George Gratzer, More Math into LaTeX, 4th Edition, Springer, 2007.

Reference Books

1. Helmut Kopka and Patric W.Daly, A guide to LaTeX, Fourth edition, Addison-Wesley.
2. David R. Wilkins, Getting started with LaTeX, Second Edition.

Website and e-Learning Source

1. <https://nptel.ac.in>

