VIVEKANANDA COLLEGE

College with Potential for Excellence
(Residential & Autonomous – A Gurukula Institute of Life-Training)
(Affiliated to Madurai Kamaraj University)
Reaccredited with 'A' Grade (CGPA of 3.59 out of 4.00) by NAAC

TIRUVEDAKAM WEST, MADURAI DISTRICT – 625 234

DEPARTMENT OF MATHEMATICS

B.Sc. MATHEMATICS

SYLLABUS

Choice Based Credit System

(For those who joined in June 2017 and after)

ABOUT THE COLLEGE

Vivekananda College was started by Founder-President Swamiji Chidhbhavanandhaji Maharaj of Sri Ramakrishna Tapovanam, Tirupparaithurai, Trichy in 1971 on the banks of the river Vaigai which is blissfully free from the noise and hurry, the crowds and distraction of the city.

Vivekananda College is a residential college functioning under Gurukula pattern. It is Man-making education, that is imparted in this institution, Culture, character and curriculum are the three facets of ideal education that make man a better man. This is possible only when the teacher and taught live together, The Gurukula system of Training is therefore a humble and systematic attempt in reviving the age old GURUGRIHAVASA for wholesome education, Attention to physical culture, devotion to duty, obedience to teachers, hospitality to guests, zest for life, love for the nation, and above all, humility and faith in the presence of God etc. are the values sought to be inculcated. All steps are taken to ensure the required atmosphere for the ideal life training.

Vivekananda College, Tiruvedakam West, Madurai District-625 234 is an aided college established in 1971 and offers UG and PG courses. This College is affiliated to the Madurai Kamaraj University, Madurai. The College was reaccredited with 'A' grade (CGPA 3.59 out of 4.00) by NAAC in September 2015. The College was awarded College with Potential for Excellence by UGC in April 2016.

VISION AND MISSION

Our Vision: To raise an army of neo-graduates steeped in the hoary culture of the motherland and dedicated to serving her as potential leaders in the manifold spheres of national effort.

Our Mission: A harmonious enrichment of physical, emotional and intellectual facets of a student's personality to bring out his inherent PERFECTION.

Objectives of the Institution

1. To inculcate spiritual, ethical, moral and social values in all disciplines of study.
2. Simultaneous education of the Hand, Heart and Head. Only a sound body can hold a sound mind.
3. Provide opportunities for all round development of the students and excellence in higher education, research and extension in different disciplines.
4. Disseminate the findings of research to the community to facilitate its development.
5. To provide society citizens of sterling character.
6. To cater to the needs of the educationally backward people – the most backward, scheduled caste and tribe.

I Eligibility for Admission

Admission to B.Sc. – Mathematics Programme is open to candidates with +2 pass with Maths, Physics, Chemistry & Biology or Computer Science as major subjects.

For B.Sc.-Mathematics course offered in the college, a pass in the Higher Secondary Examination conducted by the Government of Tamil Nadu or an examination accepted as equivalent there to by the Syndicate of the MKU, subject to such conditions as may be prescribed therefore.

II Duration

The course is for a period of three years. Each academic year shall comprise of two semesters viz. Odd and Even semesters. Odd semesters shall be from June to November and Even Semesters shall be from December to April. There shall be not less than 90 working days which shall comprise 450 teaching clock hours for each semester (Exclusive of the days for the conduct of university end-semester examinations) for each semester.

III CBCS System

All Programmes offered in the college are run on Choice Based Credit System (CBCS). It is an instructional package developed to suit the needs of students to keep pace with developments in higher education and the quality assurance expected of it in the light of liberalization and globalization in higher education.

IV Semesters:

An academic year is divided into two semesters. In each semester, courses are offered in 15 teaching weeks. Each week has 30 working hours spread over 6 days a week.

V Credits:

The term 'Credit' refers to the weightage given to a course, usually in relation to the instructional hours assigned to it. The total minimum credits, required for completing the B.Sc. Programme is 140. The details of credits for individual components and individual courses are given in the above table.

***VI Course*:**

Each Course is to be designed variously under lectures / laboratory / seminar / practical training / assignments to meet effective teaching and learning needs.

VII Examinations:

i). There shall be examinations at the end of each semester, for odd semesters in the month of October / November; for even semesters in April/May. A candidate who does not pass the examination in any course(s) shall be permitted to appear in such failed course(s) in the subsequent examinations to be held in October / November or April/May.

ii). A candidate should get registered for the first semester examination. If registration is not possible owing to shortage of attendance beyond condonation limit / regulations prescribed or belated joining or on medical grounds, the candidates are permitted to move to the next semester. Such candidates shall re-do the missed semester after the completion of the programme.

VIII Condonation

Students must have 75% of attendance in each paper to appear for the examination. Students who have 65% to 74% of attendance shall apply for condonation in the prescribed form with the prescribed fee. Students who have 50% to 64% of attendance shall apply for condonation in prescribed form with the prescribed fee along with the Medical Certificate. Students who have below 50% of attendance are not eligible to appear for the examination. They shall compensate the shortage after the completion of the programme.

IX Question Paper Pattern

Time: 3 Hours
Maximum Marks: 75

SECTION-A (10 X 1 =10 Marks)

Answer All Questions

(1-5) Multiple Choice
(6-10) Fill in the blanks
Two questions from each unit

SECTION-B (5 X 7 = 35 Marks)

Answer All Questions

(11-15) Questions shall be in the format of either (a) or (b)
One question from each unit

SECTION-C (3 X 10 = 30 Marks)

Answer any THREE Questions

(16-20) one question from each unit.

X Evaluation:

Performance of the students are evaluated objectively. Evaluation is done both internally and externally. They will be assessed continuously through Internal Assessment System and finally through summative (end) semester examination. To assess internally, there will be three examinations conducted centrally with a duration of two hours for each paper. In addition to continuous evaluation, the summative semester examination, which will be a written examination of three hours duration, would also form an integral component of the evaluation. The ratio of marks to be allotted to continuous internal assessment and to end semester examination is 25: 75.

The pattern of internal valuation shall be:

Test: 20 Marks (the average of best two tests out of three tests)
Assignment: 5 marks
Total: 25 marks.

In respect of practical papers, the ratio of marks to be allotted to internal assessment and to summative (end) semester examination is 40:60. The internal marks will be calculated on the basis of marks secured at the model examination and marks awarded for the preparation of practical note book. The external marks will be calculated on the basis of the marks awarded by the internal examiner and the external examiner at the summative semester examination.

XI Passing Minimum:

There is no passing minimum for Internal Assessment. The passing minimum for External Examinations shall be 27 out of 75 marks and passing minimum for a paper is 40%.

XII Classification of Students:

Candidates who have secured not less than 40% of marks in each paper shall be declared to have passed in that paper. Candidates who obtain 40% and above but below 50% shall be declared to have passed in Third Class. Candidates who obtain 50% and above but below 60% of the aggregate marks in Part-III shall be declared to have passed in Second Class and those who obtain 60% of marks and above shall be placed in the First Class. Candidates who obtain 75% and above shall be declared to have passed in Distinction provided he has not re-appeared for any paper during the course of the study.

XIII Failed Candidates:

A candidate who has arrears in any paper in a semester examination will be permitted to proceed to the next semester classes. A candidate who has arrears may appear again in these failed papers at the November/April examinations. The internal assessment marks already obtained by him shall be carried over for the subsequent appearance also.

XIV Improvement of Internal Marks:

The student desirous of improving the internal assessment marks may request the Head of the Department. After obtaining permission from the Staff Council Meeting by the Head, the student may write improvement examinations in consultation with the course teacher. The marks obtained (when it is more than the previous marks) will be submitted to the Controller of Examinations for further adoption.

XV Study Tour

Students are expected to participate in the field visit and the study tours organized by the department. Though study tour/field trip carries no credit, it is compulsory for the students to attend whereby the students can get an opportunity to gain practical knowledge. As such, observational visit to selected social welfare organizations, industries, trade centres, exhibitions, places of historical importance and the like will be considered as extra-curricular activities.

DEPARTMENT OF MATHEMATICS

Vision:

To raise a battalion of maths graduates equipped with logical thinking and tender heart to serve our motherland as potential leaders in the manifold spheres of national effort.

MISSION:

Enriching the mental, emotional and intellectual facets of maths students to cope up with any career that they choose and to strive to attain perfection in life.

OBJECTIVES:

1. To develop the students' mental faculty to appreciate and enjoy the logical reasoning and hidden connections while learning mathematics.
2. To provide ample opportunities to excel in learning mathematics so that he can shine brightly in higher education, research or career that he chooses.
3. To encourage and provide ample opportunities to the maths students to disseminate his mathematical knowledge to the younger and tender students community in rural areas.
4. To provide ample mathematically oriented activities to the students to inculcate spiritual, ethical, moral and social values so that his Hand, Heart, and Head functions inter connectedly and harmoniously.
5. In short, to provide society, citizens of sterling character with sharp intellect.

HISTORY:

Mathematics was taught as a subject in Pre–university classes from 1971 onwards – that was the year the college started functioning. Mathematics as an Ancillary subject was offered from the inception of B.Sc. Physics degree, that is from the year 1973-74. From 1980-81 onwards B.Sc Degree in Mathematics major was offered and so Mathematics department became a full-fledged one. The college became autonomous in June 1987. So the department had freedom to chart its own course. Syllabus was framed in 1987 and updated periodically to cater to the career needs of the students. But while framing and updating the syllabus, Mathematics department has always kept in mind the main stake holders are rural students. So fundamental Mathematics was always a part of the syllabus. When the need arose Computer oriented papers, Competitive mathematics, Operations research, Vedic mathematics, Value education, Environmental science etc were also incorporated in the syllabus.

The department also did not fall back in repaying its social obligations. Our students, guided by the department teachers, become resource persons to teach mathematical concepts, vedic maths, yoga etc to the school students. Learning becomes easier by laboratory activities and by building mathematical models. Our students practice this and their innovations are exhibited and explained in the three day Mathematics Exhibition for Rural Masses conducted once in 2 years. Our students are encouraged to participate enthusiastically in all the college endeavors and activities like NSS, NCC, controlling the public during functions and festival times, election duties, temple cleanliness etc.

SCHEME OF EXAMINIATION

(For those who joined in June 2013 and after)

FIRST SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
I	Tamil	P1LT11	Tamil: Ikkalak Kavithaiyum Urainadaium	6	3	25	75	100
	Sanskrit	P1LS11	Fundamental Grammar & History of Sanskrit Literature – I					
II	English	P2LE11	Communicative English Spoken English – I	5 1	2	25	75	100
III	Core	05CT11	Algebra and Trigonometry	5	4	25	75	100
	Core	05CT12	Differential Calculus	5	4	25	75	100
	Allied	06AT01	Physics-I	6	4	25	75	100
IV	Non Major	05NE11	Fundamentals of Mathematics	2	2	25	75	100
			TOTAL	**30**	**19**			

SECOND SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
I	Tamil	P1LT21	Tamil: Ikala kadhai Ilakkiyamum Makkal Thagavaliyalum.	6	3	25	75	100
	Sanskrit	P1LS21	Poetry, Grammar & History of Sanskrit Literature – II					
II	English	P2LE21	Functional English	5	2	25	75	100
	English	P2LE22	Spoken English-I	1	1	100	–	100
III	Core	05CT21	Integral Calculus	5	4	25	75	100
	Core	05CT22	Analytical Geometry 3D and Vector Calculus	5	4	25	75	100
	Allied	06AT02	Physics – II	4	4	25	75	100
	Allied	06AP03	Practical – I	2	2	40	60	100
IV	Non Major	05NE21	Statistics and Operations Research	2	2	25	75	100
			TOTAL	**30**	**22**			

THIRD SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
I	Tamil	P1LT31	Kappiyamum Pakthi Ilakiyamum Nadakamum	6	3	25	75	100
	Sanskrit	P1LS31	Prose, Poetics & History of Sanskrit Literature-II					
II	English	P2LE31	English through Drama & Poetry Spoken English – II	4 1	2	25	75	100
III	Core	05CT31	Differential Equations	5	4	25	75	100
	Core	05CT32	Numerical methods	6	5	25	75	100
	Allied	05AT31	Programming in C	4	3	25	75	100
	Allied	05AP32	Practical: Programming in C	2	2	40	60	100
IV	Skill Based	05SB31	Mathematical Logic	2	2	25	75	100
			TOTAL	**30**	**21**			

FOURTH SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
I	Tamil	P1LT41	Sanga Ilakkiyamum Neethi Ilakkiyamum	6	3	25	75	100
	Sanskrit	P1LS41	Drama and History of Sanskrit Literature – IV					
II	English	P2LE41	English through classiscs	4	2	25	75	100
	English	P2LE42	Spoken English – II	1	1	100	--	100
III	Core	05CT41	Sequences and Series	6	5	25	75	100
	Core	05CT42	Dynamics	5	4	25	75	100
	Allied	05AT41	Programming in C++	3	3	25	75	100
	Allied	05AP42	Practical : Programming in C++	3	2	40	60	100
IV	Skilled based	05SB41	Competitive mathematics	**2**	**2**	25	75	100
	Total			**30**	**22**			

FIFTH SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
II	English	P2LE51	English for Carrier Development	1	1	100	--	100
III	Core	05CT51	Statistics	5	4	25	75	100
	Core	05CT52	Modern Algebra	5	4	25	75	100
	Core	05CT53	Real Analysis	5	5	25	75	100
	Core	05CT54	Statics	5	4	25	75	100
	Elective	05EP51	Linear Programming	5	5	25	75	100
IV	Skill Based	05SB51	Quantitative Aptitude	2	2	25	75	100
	E.S	ESUG51	Environmental Studies	2	2	25	75	100
			TOTAL	**30**	**27**			

SIXTH SEMESTER

Part	Study Component	Subject Code	Title of The Paper	Hours	Credit	Sessional Marks	Summative Marks	Total
II	English	P2LE61	English for Professional Excellence	1	1	100		100
III	Core	05CT61	Linear Algebra	5	4	25	75	100
	Core	05CT62	ComplexAnalysis	5	5	25	75	100
	Elective	05EP61	Graph Theory	5	5	25	75	100
	Elective	05EP62	Operations Research	6	5	25	75	100
IV	Skill Based	05SB61	Applied Statistics	2	2	25	75	100
	Skill Based	05SB62	Boolean Algebra	2	2	25	75	100
	Skill Based	05SB63	MS Office Practical	2	2	40	60	100
	VE	VEUG61	Value Education	2	2	25	75	100
	EA	EAUG61	Extension Activities		1	--	100	100
			TOTAL	**30**	**29**			
			TOTAL HOURS	**180**				
			TOTAL CREDITS		**140**			

DEPARTMENT OF METHEMATICS
CBCS - DISTRIBUTION OF CREDIT
B.Sc. Mathematics
(For those who joined in June 2013 and after)

Study Component	SEMESTER						Total Credit
	I	II	III	IV	V	VI	
Tamil / Sanskrit	3	3	3	3	-	-	**12**
English	2	2+1	2	2+1	1	1	**12**
Core Subject	8	8	9	9	17	9	**60**
Allied Subject	4	6	5	5	-	-	**20**
Non Major Elective	2	2	-	-	-	-	**4**
Skill Based Subject	-	-	2	2	2	6	**12**
Elective Subject	-	-	-	-	5	10	**15**
Environmental Study	-	-	-	-	2	-	**2**
Value Education	-	-	-	-	-	2	**2**
Extension Activity	-	-	-	-	-	1	**1**
TOTAL	**19**	**22**	**21**	**22**	**27**	**29**	**140**

பகுதி -1 – பொதுத்தமிழ்

முதல் பருவம் - பாடத்திட்டம்

(2017-2018 ஆம் கல்வியாண்டு முதல் முதற்பருவத்தில் சேரும் மாணவர்களுக்குரிய பாடத்திட்டம்)

ூயுசுவு-ஐ: டுயபெரயயந வுயஅடை ஞுரடிதநஉவ		
ஞுரடிதநஉவ வுவைடந: இக்காலக் கவிதையும் உரைநடையும் - தாள்: 1		
ஞுரடிதநஉவ ஊழனந: ூ1சூவு11	ர்ழரசள ூநச றநநம: 6	ஊசநனவை: 3
ஞுநயளழயெட ஆயசமள: 25	ஞுரஅஅயவளைந அயசமள: 75	வுழவயட ஆயசமள: 100

பாடப்பகுதி

அலகு : 1 தமிழ்ச் செய்யுள் : மரபுக்கவிதைகள்
அலகு : 2 தமிழ்ச் செய்யுள் : புதுக்கவிதைகள்
அலகு : 3 தமிழ் உரைநடை இலக்கியம் : சுவாமி சித்பவானந்தரின் சிந்தனைகள்.
அலகு : 4 தமிழ் இலக்கணம் : எழுத்து இலக்கணம்
அலகு : 5 தமிழ் இலக்கிய வரலாறும் பயன்பாட்டுத்தமிழும்

பாடப்பகுதியின் உட்பிரிவுகள்

அலகு: 1 தமிழ்ச் செய்யுள் : மரபுக்கவிதைகள்

1. பாரதியார் கவிதைகள்

1. தமிழ் (கவிதை முழுவதும்)
2. நடிப்புச் சுதேசிகள் (கவிதை முழுவதும்)

2. பாரதிதாசன் கவிதைகள்

1. நீங்களே சொல்லுங்கள் (கவிதை முழுவதும்)
2. புதிய உலகு செய்வோம் (கவிதை முழுவதும்)

3. குருதேவர் இராமகிருஷ்ணர்

நாமக்கல் கவிஞர் வெ.இராமலிங்கம் பிள்ளை

4. கோவில் வழிபாடு

கவிமணி தேசிக விநாயகம் பிள்ளை

5. மதுரை ஸ்ரீமீனாட்சியம்மை

சோழவந்தான்

அரசஞ்சண்முகனார்

அலகு: 2 தமிழ்ச்செய்யுள் : புதுக்கவிதைகள்

6. அன்னை – கவிஞர் கண்ணதாசன்

7. கிழக்கு விழிக்கும் நேரம் - கவிஞர் வைரமுத்து (கொடிமரத்தின் வேர்கள்)

8. அவர்கள் வருகிறார்கள் - மு.மேத்தா (சுதந்திர தாகம்)

9. புதுக்கவிதைகள் - க.நா.சுப்ரமண்யம் (கவிதை)

10. நாம் இருக்கும் நாடு - தமிழன்பன் (வாக்கு வரம் தரும் தெய்வம்)

11. தீர்த்தக்கரையினிலே - முருகு சுந்தரம் (ஒலிபெருக்கி)

12. ஹைக்கூ கவிதைகள் - க.ராமச்சந்திரன்

அலகு: 3 தமிழ் உரைநடை இலக்கியம் - சுவாமி சித்பவானந்தரின் சிந்தனைகள் (தமிழ்த்துறை வெளியீடு)

அலகு: 4 தமிழ் இலக்கணம் - எழுத்து

1. முதல் எழுத்துக்கள்
2. சார்பெழுத்துக்கள்
3. மொழி முதல் எழுத்துக்கள்
4. மொழி இறுதி எழுத்துக்கள்
5. வல்லெழுத்து மிகும் இடங்கள்
6. வல்லெழுத்து மிகா இடங்கள்

அலகு: 5 தமிழ் இலக்கிய வரலாறும் பயன்பாட்டுத் தமிழும்

அ) 1. மரபுக்கவிதையின் தோற்றமும் வளர்ச்சியும்
2. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்

ஆ) மரபுப்பிழை நீக்குதல் - பிறமொழிச் சொற்களை நீக்குதல் - பிழையற்ற தொடரைத் தேர்ந்தெடுத்தல் - ஒருமை பன்மை மயக்கம் – ஓர் எழுத்து ஒரு மொழிக்குரிய பொருள் - ஒலி வேறுபாடுகளும் பொருள் வேறுபாடுகளும் - பொருத்தமான பொருள் - பொருத்தமான தொடர் அறிதல்.

பாடநூல்கள்

1. தமிழ்ச் செய்யுள் தொகுப்பு (தமிழ்த்துறை வெளியீடு)
2. சுவாமி சித்பவானந்தரின் சிந்தனைகள் (தமிழ்த்துறை வெளியீடு)

பார்வை நூல்கள்

1. பாரதியார் கவிதைகள் (குமரன் பதிப்பகம்)
2. பாரதிதாசன் கவிதைகள் (சுவாமிமலை பதிப்பகம்)
3. தமிழ் இலக்கிய வரலாறு - முனைவர். பாக்யமேரி
4. தமிழ் இலக்கிய வரலாறு - மு.வரதராசனார்

DEPARTMENT OF SANSKRIT

B.A. / B.Sc. PART-I –LANGUAGE SANSKRIT SYLLABUS: SEMESTER – I:

PAPER – I

(For those who join in June 2017and After)

PART - I Sanskrit Paper I		
Subject Title : **Fundamental Grammar & History of Sanskrit Literature – I**		
Subject Code: **P1LS11**	Hours per week: **6**	Credit: **3**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

FUNDAMENTAL GRAMMAR & HISTORY OF SANSKRIT LITERATURE -I

Following portions for Grammar:

Declension of the following nouns and pronouns:

UNIT-I Akārānta Mascular, Ākārānta Faminine & Akārānta Neuter.

Asmad and Yuṣmad śabdas

Conjugation of the following verbs in present, past & future tense

Bhav, paṭh, Vad, Gacch, Vas, Driś (Paś), Krīḍ Dhāv

UNIT-II & III History of Sanskrit Literature:

a) Vedas and Purāṇās
b) Itihāsa
c) Court Epics – Mahākāvyas

UNIT –IV

Translation:

a) From Sanskrit to English:
Passages exercises 2, 3 and 4 from the prescribed texts.

b) From English to Sanskrit:
Passages exercises 1, 2 and 3 from the prescribed texts.
UNIT – V. Transliteration
a)Devanaagari to IPS. b) IPS to Devanaagari

Prescribed text: "SĀHITYA RASAKANĀḤ"

(Published by A.M.G. Publications, Madurai – 625 016)
Sanskrita Sri Patamala Book 1: Publication: Sanskrit Educational Society, Madras – 18.

A short history of Sanskrit Literature (Published by A.M.G. Publications, Madurai – 625 016) year of publication- 1996

Department of English (Part II) - **SEMESTER I**
(For those who joined in June 2017 and after)

PART II – Paper I		
Subject Title **: Communicative English**		
Subject Code:**P2LE11**	Hours per week: **5**	Credit: **3**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objectives: Total number of hours per semester: **75 Hrs**

- ❖ *To develop listening and speaking skills*
- ❖ *To increase the vocabulary of students*
- ❖ *To improve reading skills*
- ❖ *To develop competency in grammar*
- ❖ *To develop continuous writing*

Unit – I - Listening, Speaking and Reading Components 15 Hrs

1. Rabindranath Tagore – Cabuliwallah
2. Khushwant Singh – Karma
3. R.K. Narayan – Sweets for Angels
4. K.A.Abbas – Sparrows

Unit – II 15 Hrs

- Sentences, Clauses, and Phrases
- Parts of Speech
- Nouns
- Pronouns
- Determiners
- Articles
- Adjectives
- Verbs
- Adverbs
- Some Common Adjectives and Adverbs

Unit – III Composition 15 Hrs

- Letter writing – Formal Letters & Informal Letters
- Descriptive Writing – General topics (Paragraph)

Unit – IV - Extensive Reading: Short Stories 15 Hrs

- Young Naren - by Brahamachari Amal.
  [From "A Simple life of Swami Vivekananda"
  Advaita Ashrama, Kolkata]
- A Story of Initiation - by Sri Aurobindo Society.
  From "Stories and Anecdotes from the Mother"
  Pondicherry.
- Glory At Twilight - Bhabani Bhattacharya
- The Martyr's Corner - R.K. Narayan

Unit – V - Translation 15 Hrs

Translation of Sentences and Stories from Tamil to English / English to Tamil (Passages will be supplied)

Reference Book:

1. A Textbook of English Grammar and Usage by K.V.Joseph (Page. No.1-184) Second Edition (2012), TATA McGraw Hill Education Private Limited, New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – I**

(For those who joined in June 2013 and after)

PART – III : **Core Subject Theory**		
Subject Title : **Algebra and Trigonometry**		
Subject ode:**05CT11**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill in basic Mathematics.*

Algebra

Unit – I:

Imaginary roots, irrational roots – relation between roots and coefficients – symmetric functions of the roots – sum of powers of the roots - Newton's theorem – transformations of equations - roots with signs changed - roots multiplied by a given number.

Unit – II:

Reciprocal equations – synthetic division – decreasing and increasing the roots – removal of terms – to form an equation whose roots are any power of the roots– transformation in general.

Unit – III:

Descarte's rule of signs – Rolle's Theorem – multiple roots– finding approximate root using Horner's method

Trigonometry

Unit – IV:

Expansions – expansions of $\cos n\theta$, $\sin n\theta$ and $\tan n\theta$ – expressions for $\cos^n\theta$ and $\sin^n\theta$ – expansions of $\sin\theta$, $\cos\theta$ and $\tan\theta$ in series of ascending powers of θ – hyperbolic functions – inverse hyperbolic functions.

Unit – V:

Logarithm of complex numbers – summation of series: (C+iS method only)

Text book:

- ✓ Algebra vol I by T.K.Manicavachagompillai, Viswanathan, printers and publishers Pvt. Ltd., Chennai. For units I, II, III-relevent chapters.
- ✓ Trigonometry by T.K.Manicavachagompillai, Viswanathan, printers and publishers Pvt. Ltd., Chennai. For units IV, V - relevent chapters.

Reference Book:

- ✓ Algebra by Dr. S. Arumugam, New gamma Publishing House, Palayankottai
- ✓ Trigonometry by Dr. S. Arumugam & Thangapandi Issac, New gamma Publishing House, Palayankottai.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – I**

(For those who joined in June 2013 and After)

PART – III : **Core Subject Theory**		
Subject Title : **Differential Calculus**		
Subject Code: **05CT12**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks:**100**

Objective:

- *To develop the skill in Solving problems*

Unit-I:

Methods of differentiation: standard forms – differential coefficient of x^n e^x, log x, sinx, cosx, tanx, (derivations not included) – differential coefficient of a sum or difference – product rule – quotient rule – function of a function rule – inverse functions – hyperbolic functions – inverse hyperbolic functions – logarithmic differentiation – trigonometrical transformations – differentiation of implicit function – differentiation of one function w.r.t. another function.

Unit-II:

Successive differentiation – the n^{th} derivative – standard results – formation of equation involving derivatives –Leibnitz formula for the n^{th} derivative of a product and related problems

Unit-III:

Subtangent and subnormal – differential coefficient of the length of an arc of a curve – polar coordinates – angle between the radius vector and the tangent – angle of intersection of two curves – length of an arc in polar co-ordinates – envelope – method of finding the envelopes.

Unit-IV:

Curvature – circle, radius and centre of curvature – cartesian formula for the radius of curvature – the coordinates of centre of curvature – evolute and involute – radius of curvature when the curve is given in polar co-ordinates – pedal equation of a curve – chord of curvature.

Unit-V:

Partial differentiation – function of a function rule – total differential coefficient – implicit functions – homogeneous functions.

Text Book:

- ✓ Calculus vol I by T.K. Manicavachagompillai and S. Narayanan, Vishwanathan printers and publishers Pvt. Ltd., Chennai.

Reference Book:

- ✓ Calculus by Dr. S.Arumugam, New Gamma publishing house, Palayamkottai.

B.Sc. Mathematics (Allied Physics) CBCS Syllabus - **SEMESTER – I**

(For those who joined in June 2016 and after)

PART – III : Allied Subject		
Subject Title : **Ancillary Physics – I**		
Subject Code: **06AT01**	Hours per week: **4**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objectives:

- *To learn about acoustics of buildings.*
- *To know about elasticity, viscosity and Surface tension.*
- *To get a knowledge in electricity and magnetism.*
- *To provide a good foundation in optics.*

UNIT I: Waves and Oscillations

Simple Harmonic Motion – Composition of two Simple Harmonic Motions in a straight line – Composition of two Simple Harmonic Motions of equal time periods at right angles – Melde's Experiment – Ultrasonics- production – application and uses – Reverberation – Absorption coefficient – Acoustics of buildings – factors affecting the acoustics of buildings – Sound distribution in an auditorium.

UNIT II: Properties of Matter

Elasticity: Introduction – Different moduli of elasticity – Poisson's ratio- Energy stored in a stretched wire – Bending of beams – expression for the bending moment – Theory of Non-uniform bending – Torsion Pendulum – expression for the period of oscillation of a torsion pendulum.

Viscosity: Streamline flow and turbulent flow – Coefficient of viscosity – Derivation of Poiseulle's formula.

Surface Tension: Introduction – experimental determination of surface tension – Jaegar's method.

UNIT III: Thermal Physics

Laws of thermodynamics – Zeroth law of thermodynamics – first law of thermodynamics – second law of thermodynamics – third law of thermodynamics – Heat engine – Entropy – Change of entropy in a carnots cycle.

Unit IV: Electricity and Magnetism

Introduction – Magnetic effect of electric current – Oersted's experiment – BiotSavart law – Magnetic induction at a point on the axis of a circular coil – choke coil – Electric circuit – switches – fuses – circuit breaker – the relay.

Unit V: Geometrical Optics

Introduction – image formation by refraction – Critical angle – Refraction through prism – direct vision spectroscope – coma – Spherical aberration in a lens – methods of minimizing spherical aberration – condition for minimum spherical aberration of two thin lenses separated by a distance – chromatic aberration in a lens – condition for achromatism of two lenses separated by a distance.

Text Book:

- ✓ Allied Physics Paper I and II by R. Murugeshan, M.Shantha Kiruthiga Sivaprasath, S.Chand & Company Pvt. Ltd., New Delhi, Revised Edition, Reprint 2014.

  Unit I: 1.1 to 1.3, 1.9, 1.11 to 1.19.
  Unit II: 2.1 to 2.7, 2.12, 2.14, 2.15, 2.17, 2.24, 2.29
  Unit III: 3.15 to 3.21
  Unit IV: 4.1, 4.4 to 4.6, 4.15 to 4.20
  Unit V: 5.1, 5.2, 5.4, 5.6, 5.14, 5.16, 5.18 to 5.20, 5.22, 5.27

Reference Books:

- ✓ Electricity and Magnetism by R. Murugeshan -Reprint with correction 2008.
- ✓ Principles of Electronics by V.K.Metha & Rohit Metha-Multicolour Illustrative edition – 2006, S. Chand & Company Pvt. Ltd., New Delhi.
- ✓ Modern Physics by R. Murugeshan & Kiruthiga Sivaprasath-Multicolour Edition – 2007, S. Chand & Company Ltd., New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – I**

(For those who joined in June 2013 and After)

PART – IV : Non Major Elective		
Subject Title **: Fundamentals of Mathematics**		
Subject Code:**05NE11**	Hours per week: **2**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill in Basic Mathematics.*

Unit-I

Theory of indices – ratio and proportion.

Unit-II

Distance between two points – equation of a line – different forms [except normal form].

Unit-III

Theory of matrices – addition and multiplication of two matrices.

Unit-IV

Finding the n^{th} term and the sum to n terms of an A.P and G.P – arithmetic mean and geomentric mean.

Unit-V

Solving the quadratic equations – finding the roots – forming the equation when the roots are given (only second degree).

Text Book:

- ✓ Business mathematics by Dr.M.Manoharan & Dr.C.Elango Palani Paramount publications, Palani.2006 Edt.

Reference Book

- ✓ Business Mahtematics by Dr.V.R.Vittal, Margham publications Chennai.

இரண்டாம் பருவம் - பாடத்திட்டம் (2017 - 2018-ஆம் ஆண்டு முதல்)

PART-I: **Language Tamil Subject**		
Subject Title: **இக்காலக் கதை இலக்கியமும் மக்கள் தகவலியலும் - தாள்: 2**		
Subject Code: **P1LT21**	Hours per week: **6**	Credit: **3**
Seasonal Marks: **25**	Summative marks: **75**	Total Marks: **100**

பாடப்பகுதி

அலகு: 1 தமிழ்ச் சிறுகதை இலக்கியம்
அலகு: 2 தமிழ் நாவல் இலக்கியம்
அலகு: 3 மக்கள் தகவலியல்
அலகு: 4 தமிழ் இலக்கணம் - சொல்
அலகு: 5 தமிழ் இலக்கிய வரலாறும் பயன்பாட்டுத்தமிழும்

பாடப்பகுதியின் உட்பிரிவுகள்

அலகு : 1 தமிழ்ச் சிறுகதை இலக்கியம் - பூ மலரும் காலம் (ஜி.மீனாட்சி)
அலகு : 2 தமிழ் நாவல் இலக்கியம் - வேரில் பழுத்த பலா (சு.சமுத்திரம்)

அலகு : 3 மக்கள் தகவலியல் - பாடப்பகுதிகள்

1. இதழ்கள் தொடங்குவதற்குரிய வழிமுறைகள்
2. செய்தித்தாள் நிர்வாக அமைப்பு
3. பேட்டி - அதன் வகைகள்
4. செய்தி - செய்தி விளக்கம்

அலகு : 4 தமிழ் இலக்கணம் - சொல்

1. நான்கு வகைச் சொற்கள்
2. வினா - விடை வகைகள்
3. வேற்றுமைகள்
4. தொகைகள்

(வேற்றுமைத் தொகை, வினைத்தொகை, பண்புத்தொகை, உவமைத்தொகை, உம்மைத்தொகை, அன்மொழித்தொகை)

அலகு : 5 தமிழ் இலக்கிய வரலாறும் பயன்பாட்டுத்தமிழும்

அ) 1. சிறுகதையின் தோற்றமும் வளர்ச்சியும்
2. புதின இலக்கியத்தின் தோற்றமும் வளர்ச்சியும்

ஆ) தொடரும் தொடர்பும் அறிதல் - பிரித்து எழுதுதல் - பொருந்தாச் சொல்லைக் கண்டறிதல் – வழுவுச்சொற்களை நீக்கிய தொடரைக் குறிப்பிடுதல்- சொற்களை அகர வரிசைப்படுத்தல்- வேர்ச்சொல்லைத் தேர்வு செய்தல் - எவ்வகை வாக்கியம் எனக் கண்டு எழுதுதல் - சொற்களை ஒழுங்குபடுத்திச் சொற்றொடர் ஆக்குதல் - ஆங்கிலச்சொல்லுக்கு நிகரான தமிழ்ச் சொல் அறிதல்.

பாடநூல்கள்

1. சிறுகதை – பூ மலரும் காலம் (ஜி.மீனாட்சி)
2. நாவல் - வேரில் பழுத்த பலா (சு.சமுத்திரம்)
3. இதழியல் கலை (டாக்டர் மா.பா.குருசாமி)
4. தமிழ் இலக்கிய வரலாறு (முனைவர் பாக்யமேரி)

பார்வை நூல்கள்

1. மக்கள் தகவல் தொடர்பியல் அறிமுகம் (டாக்டர் கி. இராசா)
2. இதழியல் (ச.ஈஸ்வரன்)
3. இதழியல் (டாக்டர் இரா.கோதண்டபாணி)
4. இதழியல் ஓர் அறிமுகம் (டாக்டர் அந்தோணி இராசு)
5. தமிழ் இலக்கிய வரலாறு (டாகடர் மு.வரதராசனார்)

DEPARTMENT OF SANSKRIT

B.A. / B.Sc. PART-I –LANGUAGE SANSKRIT SYLLABUS: SEMESTER – II:

PAPER – II

(For those who join in June 2017and After)

PART – I Sanskrit Paper II		
Subject Title : **Poetry Grammar & History of Sanskrit Literature – II**		
Subject Code:**P1LS21**	Hours per week: **6**	Credit: **3**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

POETRY

Selected portions from the prescribed text: **Kaliviḍambanam** & **Sabhārañjanaśatakam**

- Published by SADGUNA PUBLLICATIONS

Kalividambanam Cidambaram (TN)

Unit I. scholars and Teachers Verse No. 1-10,

Unit II. Astrologers & Physicians V. 14-30

Unit III. Relatives & Pseudo monks Vv. 41-50, 84-93.

Sabhārañjanaśatakam

Unit IV Wisdom and it's acquisition Vv. 1-12

Unit V Poetry & Poet Vv. 13-30.

Prescribed text:
LYRICS & CHAMPU KAVYAS
A short history of Sanskrit Literature
(Published by A.M.G. Publications, Madurai – 625 016 Page No. 51 – 60, 42 – 45)
year of publication- 1996

Kaliviḍambanam & Sabhārañjanaśatakam
Published by SADGUNA PUBLLICATIONS
Cidambaram (TN). 2014.

B.Sc. Mathematics Part-II English CBCS Syllabus - **SEMESTER – II**

(For those who join in June 2015 onwards)

PART II – Paper I		
Subject Title **: Functional English**		
Subject Code:**P2LE21**	Hours per week: **5**	Credit: **3**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objectives: Total number of hours per semester: **75 Hrs**

- *To develop listening, speaking and reading skills*
- *To develop Information and Communication Technology (ICT) skills*
- *To develop presentation skills*
- *To develop competency in grammar*

Unit – I Listening, Speaking and Reading Components **15 Hrs**

Prose

1. My Visions for India - A.P.J. Abdul Kalam
2. Mahatma Gandhi - V.S.Srinivasa Sastri
3. The Secret of Work - Swami Vivekananda
4. The Golden Age of Cricket - Neville Cardus
5. Tree Speaks - C.Rajagopalachari

Unit – II Language Study **15 Hrs**

- Tenses and Their Uses
- Concord or Agreement
- Conditional Sentences
- Active and Passive Voice
- Preposition

Book: ***A Textbook of English Grammar and Usage*** **by K.V.Joseph**

Second Edition (2012), TATA McGraw Hill Education Private Limited, New Delhi.

Unit – III Composition **15 Hrs**

- Letter writing – Informal Letters
- Hints Development
- Descriptive Writing

Unit – IV Extensive Reading: Short Stories **15 Hrs**

Extensive Reading

1. Upper Division Love - Manohar Malgonkar
2. The Tiger in the Tunnel - Ruskin Bond
3. A Devoted Son - Anitha Desai
4. *The Lost Child* - *Mulk Raj Anand*
5. The Cask of Amantilado - Edgar Allan Poe

Unit – V Translation **15 Hrs**

- Translation of Sentences and Stories from Tamil to English/English to Tamil (Passages will be supplied)

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – II**

(For those who joined in June 2013 and after)

PART – III : **Core Subject Theory**		
Subject Title : **Integral Calculus**		
Subject Code:**05CT21**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of solving problems.*

Unit-I:

Integration – introduction – definite integral – methods of integration – integral of function containing linear function of x – integrals of the form F F[f(x)] f ′(x)dx – integration of rational, irrational and algebraic functions.

Unit-II:

Properties of definite integrals – integration by parts – reduction formulae: for integrands $x^n e^{ax}$, x^n cosax, $\sin^n x$, $\cos^n x$, $\sin^m x \cos^n x$, $\tan^n x$, $\cot^n x$, $\sec^n x$, $\text{cosec}^n x$.

Unit – III

Double Integral – evaluation of double integral – double integral in polar coordinates – Beta and Gamma functions.

Unit –IV

Triple integrals – change of variables – Jacobian – transformation from cartesian to polar coordinates – cartesian to spherical polar coordinates – cartesian to cylindirical coordinates – area by double integral – volume by triple integral.

Unit -V

Fourier series – definition – even and odd functions – expanding f(x) as Fourier series in $(-\pi,\pi)$, $(0, 2\pi)$ – half range series – development of cosine and sine series – change of interval – expanding f(x) as fourier series in $(-l, l)$, $(0, 2l)$ and $(0, l)$.

Text Book:

- ✓ Calculus Vol II and III by S. Narayanan, T.K. Manicavachagompillay. S.Visvanathan, printers & publishers, Pvt. Ltd Chennai.

Reference Book:

- ✓ Calculus by Dr.S.Arumugam New Gamma Publishing House, Palayamkottai.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – II**

(For those who joined in June 2013 and after)

PART – III : **Core Subject Theory**		
Subject Title : **Analytical Geometry (3D) and Vector Calculus**		
Subject Code: **05CT22**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill in solving problems.*

Unit I – Coordinate system and planes **–** rectangular cartesian coordinates – direction cosines – direction ratios – angle between two lines – condition for parallelism and perpendicularity – planes – equation of a plane – different forms – general form, three point form; intercept form, normal form –angle between two planes – length of the perpendicular from a point to a plane – angle bisectors of two planes.

Unit – II Straight line **–** equation of a straight line-different forms – non-symmetric form, symmetric form, two point form – a plane and a line – coplanar lines – condition for coplanarity – angle between a line and a plane – equation of a plane containing two lines – length of the perpendicular from a point to a line – skew lines – shortest distance between two skew lines.

Unit – III The Sphere **– e**quation of a sphere – different forms – centre radius form, diameter form – tangent line and tangent plane – angle of intersection of two spheres – section of a sphere.

Unit – IV Vector differentiation – differentiation of vectors – gradient of a vector – geometrical interpretation – directional derivative and its maximum value – divergence and curl of a vector – solenoidal and irrotational vectors – Laplacian operator – harmonic vectors – connected theorems and problems.

Unit – V Line and surface integrals – vector integration – line integrals – work done by a force – surface integrals – integral theorems – Green's theorem in plane, Stoke's theorem, Gauss divergence theorem (Statements only, without proof) – verification of these theorems – simple problems.

Text Book:

- ✓ Analytical Geometry 3 Dimensions by T.K.Manicavachagompillai. S.Vishwanathan printers and publishers Pvt. Ltd. Chennai.
- ✓ Vector Calculus by T.K.Manicavachagompillai. S.Vishwanathan printers and publishers Pvt. Ltd. Chennai.

Reference book:

- ✓ Analytical Geometry 3D and Vector Calculus by S.Arumugam and Thangapandian Isaac. New Gamma Publicatons Company, Palayamkottai.

B.Sc. Mathematics (Allied Physcs) CBCS Syllabus - **SEMESTER – II**

(For those who joined in June 2016 and after)

PART – III : Allied Subject		
Subject Title : **Ancillary Physics – II**		
Subject Code: **06AT02**	Hours per week: **4**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objectives:

- *To learn about Atomic and nuclear physics*
- *To know about elements of relativity*
- *To get a knowledge in electronics*

UNIT I: PHYSICAL OPTICS

Interference – Introduction – interference in thin films – production of colors in thin films – diffraction – introduction – plane transmission diffraction grating – polarization – introduction – double refraction – specific rotator power – lauret's half shade polarimeter – difference between interference and diffraction.

UNIT II: ATOMIC PHYSICS

Vector atom model – Quantum numbers associated with the vector atom model – the Pauli's exclusion principle – magnetic dipole moment due to spin – the stern and gerlach experiment.

Unit III: NUCLEAR PHYSICS:

Models of nuclear structure – mass defect – binding energy – ionization chamber – nuclear fission-energy released in fission – atom bomb – Nuclear reactor – Nuclear fusion – Distinction between fission and fusion.

UNIT IV: ELEMENTS OF RELATIVITY

Frame of reference – Galilean Transformation Equations – Postulates of Special theory of Relativity – The Lorentz Transformation Equations – derivation – Length Contraction – Time Dilation –Mass Energy Equivalence.

UNIT V: ELECTRONICS

Light Emitting Diode (LED) – Zener Diode – experiment to study the characteristics of the zener diode – zener diode as voltage regulator – Logic Gates – AND gate – OR gate – the NOT gate – the NAND gate –NAND gate is a universal gate- the NOR gate –NOR gate is universal gate – Boolean algebra – Postulates and theorem of Boolean algebra – De Morgan's theorem.

Text Book:

- ✓ Allied Physics Paper I and II by R. Murugeshan, M.Shantha Kiruthiga Sivaprasath, S.Chand & Company Pvt. Ltd. New Delhi, Revised Edition, Reprint 2014.

  Unit I: 6.2 to 6.4, 6.8, 6.10, 6.12, 6.14, 6.19, 6.20
  Unit II: 7.1, 7.2, 7.4, 7.7, 7.8
  Unit III: 8.1, 8.3, 8.4, 8.6, 8.8, 8.9, 8.12, 8.13, 8.14
  Unit IV: 10.1 to 10.4, 10.11 to 10.21
  Unit V: 9.1 to 9.7, 9.9

Reference Books:

- ✓ Electricity and Magnetism by R. Murugeshan - Reprint with correction 2008.
- ✓ Principles of Electronics by V.K.Metha & Rohit Metha - Multicolour Illustrative edition – 2006, S. Chand & Company Ltd., New Delhi
- ✓ Modern Physics by R. Murugeshan & Kiruthiga Sivaprasath - Multicolour Edition – 2007, S. Chand & Company Ltd., New Delhi.

B.Sc. Mathematics (Allied Physics) CBCS Syllabus - **SEMESTER – II**
(For those who joined in June 2016 and after)

PART – III : Allied Physics Practical		
Subject Title : **Practical**		
Subject Code: **06AP03**	Hours per week: **2**	Credit: **2**
Sessional Marks: **40**	Summative Marks: **60**	Total Marks: **100**

List of Experiments
(Any fourteen experiments)

1. Non-Uniform Bending – Pin and Microscope
2. Non-Uniform Bending – Optic lever
3. Uniform Bending – Pin and Microscope
4. Uniform Bending – Optic lever
5. Compound Pendulum
6. Torsion Pendulum
7. Sonometer – Verification of Laws (1^{st} law & 2^{nd} law)
8. Viscosity by Stoke's method
9. Newton's rings – Determination of Radius of curvature
10. Air wedge – Thickness of a paper
11. Spectrometer – Refractive Index
12. Spectrometer – Grating -Normal incidence
13. Carey Foster Bridge
14. Diode Characteristics
15. Zener Diode Characteristics
16. Logic Gates – AND, OR, NOT

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – II**

(For those who joined in June 2013 and after)

PART – IV : Non Major Elective		
Subject Title **: Statistics and Operations Research**		
Subject Code:**05NE21**	Hours per week: **2**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill in solving problems.*

Unit-I: Averages – mean, median, mode.

Unit-II: Deviation – quartile deviation – standard deviation.

Unit-III: Graphical solution of a L.P.P.

Unit-IV: Transportation problem.

Unit-V: Assignment problem.

Text Book:

- ✓ Statistics by Dr.S.Arumugam, New Gamma publications Palayamkottai, edition 2013.
- ✓ Operations Research by Dr.S.Arumugam. Scitech Publications, Chennai, edition 2006.

Reference Books:

- ✓ Statistics, by S.C.Guptha and V.K.Kapur Sultan Chand & sons, New Delhi.
- ✓ Operations Research, by Kanti Swarop P.K.Guptha and Manmohan 5^{th} edition 2005.

மூன்றாம் பருவம் - பாடத்திட்டம் (2017-2018 ஆம் ஆண்டு முதல்)

PART-I: **Language Tamil Subject**		
Subject Title: **காப்பியமும் பக்தி இலக்கியமும் நாடகமும் - தாள்: 3**		
Subject Code: **P1LT31**	Hours per week: **6**	Credit: **3**
Seasonal Marks: **25**	Summative marks: **75**	Total Marks: **100**

பாடப்பகுதி

அலகு: 1 தமிழ்க் காப்பிய இலக்கியம்
அலகு: 2 தமிழ்ப் பக்தி இலக்கியம்
அலகு: 3 தமிழ் நாடகம் (வைகையில் வெள்ளம் வரும்)
அலகு: 4 தமிழ் இலக்கணம் (அணிகள்)
அலகு: 5 தமிழ் இலக்கிய வரலாறும் பயன்பாட்டுத்தமிழும்.

பாடப்பகுதியின் உட்பிரிவுகள்

அலகு: 1. தமிழ்க் காப்பிய இலக்கியம்

1. சிலப்பதிகாரம் - வழக்குரை காதை
2. மணிமேகலை - ஆபுத்திரன் திறம் அறிவித்த காதை
3. கம்பராமாயணம் - வாலி வதைப்படலம்
4. வில்லிப்புத்துரார் பாரதம் - கண்ணன் தூதுச்சருக்கம்
5. கந்த புராணம் - அயனைச் சிறை நீக்கும் படலம்

அலகு: 2 தமிழ் பக்தி இலக்கியம்

1. தேவாரம் – திருஞானசம்பந்தர் (திருவேடகப் பதிகம்)
2. திருவாசகம் – மாணிக்கவாசகர் (பிடித்த பத்து)
3. திருமந்திரம் – திருமூலர் (10 பாடல்கள்)
4. திருப்பாவை – ஆண்டாள் (10 பாசுரங்கள் தெரிவு செய்யப்பெற்றவை)
5. பராபரக்கண்ணி – தாயுமானவர் (10 கண்ணிகள் தெரிவு செய்யப்பெற்றவை)

அலகு: 3 நாடகம் – வைகையில் வெள்ளம் வரும்

அலகு: 4 தமிழ் இலக்கணம் – அணிகள்

1. அணிகள் (உவமையணி, உருவக அணி, வேற்றுமை அணி, பிறிது மொழிதல் அணி, வஞ்சப்புகழ்ச்சி அணி)
2. பாவகைகள் (வெண்பா, ஆசிரியப்பா)
3. மடல் வரைதல் – விண்ணப்பம் (புகார்க் கடிதம் – பாராட்டுக் கடிதம்)

அலகு: 5 தமிழ் இலக்கிய வரலாறும் பயன்பாட்டுத்தமிழும்.

அ) 1. காப்பிய இலக்கிய வரலாறு 2. பக்தி இலக்கிய வரலாறு
ஆ) பத்திரிக்கைச் செய்தி எழுதுதல் - நேர்காணல் எடுத்தல் - துணுக்குகள் எழுதுதல்

பாடநூல்கள்

1. தமிழ்ச் செய்யுட் தொகுப்பு (தமிழ்த்துறை வெளியீடு)
2. நாடகம் - வைகையில் வெள்ளம் வரும் (பாவை பப்ளிகேஷன்ஸ்).

பார்வை நூல்கள்

1. தமிழ் இலக்கிய வரலாறு (முனைவர் பாக்யமேரி)
2. தமிழ் இலக்கிய வரலாறு (டாக்டர் மு.வரதராசனார்

DEPARTMENT OF SANSKRIT

B.A. / B.Sc. PART-I –LANGUAGE SANSKRIT SYLLABUS: SEMESTER – III:

PAPER – III

(For those who join in June 2017and After)

PART – I Sanskrit Paper III		
Subject Title : **Prose ,Poetics & History of Sanskrit Literature – III**		
Subject Code: **P1LS31**	Hours per week: **6**	Credit: **3**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

PROSE

Following portions from the prescribed text: 'SAHITYA RASA KANA'
- Published by J.M. Publications, Madurai.

UNIT I & II

1. Gurubhakti
2. Mātaṅgacaritam
3. Samsargajādoṣaguṇā bhavanti
4. Akarṇahrudayo gardabhaḥ
5. Śukanāsopadeśaḥ

POETICS

UNIT III & IV

ALAṄKĀRA (POETICS) FROM THE TEXT BOOK: SĀHITYA RASAKANĀḤ:-

UPAMĀ, ANANVAYA, UTPREKṢĀ, ATIŚAYOKTI, ULLEKHĀ, VYATIREKA, SAMĀSOKTI, ŚLEṢA, ARTHĀNTARANYĀSA.

HISTORY OF LITERATURE

UNIT V
Prose Romance,
Historical Kavyas, Popular Tales.

Prescribed text:
A short history of Sanskrit Literature
(Published by A.M.G. Publications, Madurai – 625 016, Page No. 35 – 40, 40 – 44, 45 - 50) year of publication- 1996

Department of English (Part II) - **SEMESTER III**
(For those who join in June 2017 and after)

PART II – Paper I		
Subject Title **:**	**English through Drama and Poetry**	
Subject Code:**P2LE31**	Hours per week: **4**	Credit: **3**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objectives: **Total number of hours per semester: 60 hours**

- *To make students read and appreciate English Plays*
- *To make students appreciate English poetry*
- *To motivate students to face Competitive Examinations*
- *To develop continuous writing in English*
- *To make students read extensively*

Unit I – One Act Plays 15 Hrs

1. The First and the Last - John Galsworthy
2. Remember Caesar - G.Devoit
3. The Sheriff's Kitchen - Ronald Gow
4. The Boatswain's Mate - W.W.Jacobs and H.C. Sargent

Unit II – Poems 15 Hrs

1. Githanjali (Poem 50) - Rabindranath Tagore
2. The Earthen Goblet - Harindranath Chattopadhyaya
3. La Belle Dame sans Mercy - John Keats
4. Fidelity - William Wordsworth
5. The Tiger and the Deer - Sri Aurobindo

Unit - III **Objective English** 10 Hrs

- Comprehension
- Spotting the Errors
- Sentence rearrangement
- Sentence Fillers
- Cloze test or Numbered Gaps

Text Book: *Objective English for Competitive Examinations* – Hari Mohan Prasad, Uma Rani Sinha, Tata McGraw Hill Education Private Limited, New Delhi. 2014, 5th Edition

Unit – **IV Composition** 10 Hrs

- Dialogue Writing
- Paragraph Writing

Unit – V Intensive Reading (Great Speeches) 10 Hrs

Swami Vivekananda – Addresses at the Parliament of Religions

1. Response to Welcome,
2. Why We Disagree,
3. Religion Not the Crying Need of India,
4. Paper on Hinduism,
5. Address at the Final Session

Text: Swami Vivekananda's Chicago Address, Ramakrishna Tapovanam Printing School.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – III**

(For those who joined in June 2013 and after)

Part – III : Core Subject Theory		
Subject Title : **Differential Equations**		
Sub. Code: **05CT31**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

5 Hours / Week)

Objective:

- *To develop the skill in solving differential equations.*

UNIT I

Differential equations of first order – formation of differential equations – homogeneous equations – non homogeneous equations – linear equations – Bernoullis equations – exact equations.

UNIT II

Linear differential equations with constant coefficients – particular integrals of functions of the form e^{ax}, cos ax, sin ax, x^m, $e^{ax}V$ – equations with variable coefficients – equations reducible to the linear homogenous equations.

UNIT III

Variation of parameters – simultaneous differential equations – simultaneous equations with constant coefficients – total differential equations.

UNIT IV

Laplace transformations – the inverse Laplace transformations – solving differential equations using Laplace transformations.

UNIT V

Partial differential equations – derivation of partial differential equations – different integrals of partial differential equations – solutions of partial differential equations in some simple cases – standard types of partial differential equations – standard I, II, III, IV – Lagrange's equations.

Text Book:

- ✓ Calculus –vol III, by S. Narayanan, T.K.Manicavachagam Pillay, S.Viswanathan (printers & publishers) Pvt Ltd.

Reference Book:

- ✓ Differential equations, by Dr.S.Arumugam, New Gamma Publishing House, Palayamkottai.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – III**
(For those who joined in June 2013 and After)

Part – III : **Core Subject Theory**		
Subject Title : **Numerical Methods**		
Sub. Code: **05CT32**	Hours per week: **6**	Credit: **5**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of solving problems.*

UNIT I

Algebraic and transcendental equations: errors in numerical computation-iteration method – Aitken's Δ^2 method – bisection method –Regula falsi method – Newton-Raphson method – simultaneous equations – back substitutions – Gauss' elimination method – Gauss-Jordan elimination method – calculation of inverse of a matrix – Gauss-Jacobi iteration method – Gauss-Seidal iteration method.

UNIT II

Finite differences and interpolation – difference operators – other difference operators – difference equations – formation of difference equations – linear difference equations – Newton's interpolation formula – central difference interpolation formula – Lagrange's interpolation formula – divided differences – divided difference interpolation formula – inverse interpolation.

UNIT-III

Numerical differentiation – derivatives using Newton's forward, backward and central difference interpolation formulae – Stirling's formula – maxima and minima of the interpolating polynomial.

UNIT-IV

Numerical integration – Newton-Cote's quadrature formula – trapezoidal rule – Simpson's one-third rule – Simpson's three-eighth rule – Weddley's rule.

UNIT-V

Numerical solution of differential equations – Taylor's series method – Picard's method – Euler's method – Runge-Kutta methods – predictor-corrector formulae.

Text Books

- ✓ Numerical Analysis, by Dr.S.Arumugam, Prof. A.Thangapandi Issac and Dr. A. Somasundaram. New Gamma Publishing House, Palayamkottai.

Reference Book

- ✓ Numerical Methods, by A.Singaravelu, Meenakshi Agency – Chennai.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – III**

(For those who joined in June 2013 and after)

Part – III : **Allied Subject Theory**		
Subject Title : **Programming in C**		
Sub. Code: **05AT31**	Hours per week: **4**	Credit:**3**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objectives:

- *To understand the theory of Computers.*
- *To develop the skill in writing Programmes.*

UNIT I:

Character set – C tokens – keywords and identifiers – constants – variables – data types – declaration of variables – assigning values to variables – defining symbolic constants – operators – arithmetic, relational and logical operators – assignment – increment, decrement and conditional operators – arithmetic expressions – type conversions – managing input/output operations.

UNIT II:

Decision making and branching – '*If*' statement (all forms) – '*switch*' statement– '*goto*' statement – loops – '*while*', '*do*', '*for*' statements – jumps in loops.

UNIT III:

Arrays – one, two and multi-dimensional arrays – string handling – reading, writing, comparison and concatenation of strings – table of strings.

UNIT IV:

User defined functions – categories of functions – handling non-integer functions – functions with arrays – structures and unions – structure initialization – comparison of structure variables – arrays of structures – arrays within structures – structures within structures – structures and functions – unions.

UNIT V:

Pointers – accessing address of a variable – pointer expressions – pointers and scale factors – pointers in arrays, strings, functions and structures – files – opening and closing a file – input/output operations on files – random access to files.

Text book:

- ✓ Programming in ANSI C by E.Balagurusamy, Tata Mc Graw Hill Publishing Company Ltd, New Delhi.

Reference Book:

- ✓ Schaum's Outline Series: Programming with C by Byron Gottfried (Second Edition), Tata Mc Graw Hill Publishing Company Ltd, New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – III**

(For those who joined in June 2013 and after)

PART – III : Allied Subject Practical		
Subject Title : **Practical: Programming in C**		
Subject Code: **05AP32**	Hours per week: **2**	Credit: **2**
Sessional Marks: **40**	Summative Marks: **60**	Total Marks: **100**

List of Problems for Lab

Programming in C: Practical

1. Program to calculate the area of a triangle.
2. Program to find whether the given number is odd or even using '*if…else…'* statement.
3. Program to find the biggest among three given numbers using '*nested if*' statement.
4. Program to sum the digits of a given number.
5. Program to reverse a number using '*while'* loop.
6. Program to check whether the given number is prime or not using '*for*' loop.
7. Program to prepare students mark statement.
8. Program to sum the series (1+2+3+…….+ n)
9. Program to sum the series (1/1+1/2+1/3+….+1/n)
10. Program to generate Fibonacci series.
11. Program to sort an array in ascending order using one dimensional array.
12. Program to sort an array in descending order using one dimensional array.
13. Program to add two matrices using two dimensional arrays.
14. Program to multiply two matrices using two dimensional arrays.
15. Program to calculate the factorial value of a number using recursive function.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – III**

(For those who joined in June 2013 and after)

Part – IV : Skill Based Subject		
Subject Title : **Mathematical Logic**		
Sub. Code: **05SB31**	Hours per week: **2**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the knowledge in logic.*

UNIT I

Introduction – statements and notations – connectives

UNIT II

Statement formulae – well formed formulae

UNIT III

Tautology

UNIT IV

Equivalence of formula – truth table method – replacement process

UNIT V

Law of duality – tautological implications

Text Book

- ✓ Discrete Structures and Graph Theory by Gajavelli. S.S. Bhisma Rao, Scitech Publications (India) Ltd. Chennai-600 017

Reference Book

- ✓ Discrete Mathematics by Dr.M.K.Venkataraman, Dr.N.Chandra Sekaran, Dr.N.Sridharan, the National Publishing Company Chennai.2003-Edition

நான்காம் பருவம் - பாடத்திட்டம் (2017-2018 ஆம் ஆண்டு முதல்)

PART-I: **Language Tamil Subject**		
Subject Title: சங்க இலக்கியமும் நீதி இலக்கியமும் - தாள்: 4		
Subject Code: **P1LT41**	Hours per week: **6**	Credit: **3**
Seasonal Marks: **25**	Summative marks: **75**	Total Marks: **100**

பாடப்பகுதி

அலகு: 1 தமிழ்ச் சங்க இலக்கியம் (பத்துப்பாட்டு)
அலகு: 2 தமிழ்ச் சங்க இலக்கியம் (எட்டுத்தொகை)
அலகு: 3 தமிழ் நீதி இலக்கியம்
அலகு: 4 தமிழ் இலக்கணம்
அலகு: 5 தமிழ் இலக்கிய வரலாறும் பயன்பாட்டுத்தமிழும்.

பாடப்பகுதியின் உட்பிரிவுகள்

அலகு : 1 தமிழ்ச் சங்க இலக்கியம் (பத்துப்பாட்டு)
பத்துப்பாட்டு **(முல்லைப்பாட்டு முழுவதும்)**

அலகு : 2 தமிழ்ச் சங்க இலக்கியம் (எட்டுத்தொகை)

1. நற்றிணை
2. குறுந்தொகை
3. கலித்தொகை
4. அகநானூறு
5. புறநானூறு

அலகு : 3 தமிழ் நீதி இலக்கியம்

1. திருக்குறள் : செய்நன்றியறிதல் **(அதிகாரம் – 11)**
காலமறிதல் **(அதிகாரம் – 49)**
குறிப்பறிதல் **(அதிகாரம் – 71)**

2. பழமொழி நானூறு **(கல்வி அதிகாரம் முழுவதும்)**

1 கொன்றை வேந்தன் **(முதல் 10 பாடல்கள்)**

2 மூதுரை **(முதல் 10 பாடல்கள்)**

அலகு : 4 தமிழ் இலக்கணம் (பொருள்)

1. அகப்பொருள் – அகத்திணைகள் (முதற் கரு உரிப்பொருள்)
2. புறப்பொருள் – புறத்திணைகள் (வெட்சி முதல் பெருந்திணை வரை உள்ள 12 திணைகள்)
3. மரபியல் – பெயர் மரபுகள் – ஆண்பால் – பெண்பால் – இளமைப் பெயர்

அலகு: 5 தமிழ் இலக்கிய வரலாறும் பயன்பாட்டுத்தமிழும்.

அ) 1. சங்க இலக்கிய வரலாறு
2. நீதி இலக்கிய வரலாறு

ஆ) 1. திரைப்பட விமர்சனம்
2. புத்தக விமர்சனம்

பாட நூல்

1. தமிழ்ச் செய்யுள் தொகுப்பு (தமிழ்த்துறை வெளியீடு)

பார்வை நூல்கள்

1. தமிழ் இலக்கிய வரலாறு (டாக்டர் மு.வரதராசனார்)
2. தமிழ் இலக்கிய வரலாறு (முனைவர் பாக்யமேரி)

DEPARTMENT OF SANSKRIT

B.A. / B.Sc. PART-I –LANGUAGE SANSKRIT SYLLABUS: SEMESTER – IV:

PAPER – IV

(For those who join in June 2017and After)

PART - I Sanskrit Paper IV		
Subject Title : **Drama And History of Sanskrit Literature – IV**		
Subject Code: **P1LS41**	Hours per week: **4**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

60 hours to Drama, 30 hours to Spoken Sanskrit.

DRAMA

Following portions from the prescribed text: 'SĀHITYA RASAKANĀḤ'
- Published by J.M. Publications, Madurai.

Unit I, II, III

1. Karṇabhāra of Bhāsa

Unit IV

History of Drama Literature

A short history of Sanskrit Literature

(Published by A.M.G. Publications, Madurai – 625 016
Page No. 59 – 75) year of publication- 1996

Unit V

30 HOURS OF ORAL TRAINING DEVELOPING THE COMMUNICATION SKILLS THROUGH THE SANSKRIT LANGUAGE.

Department of English (Part –II) - **SEMESTER – IV**

(For those who join in June 2015 onwards)

PART II – Paper I		
Subject Title **: English through Classics**		
Subject Code:**P2LE41**	Hours per week: **4**	Credit: **3**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objectives: **Total number of hours per semester: 60 hours**

- To motivate students to read and understand English prose
- To make students appreciate English poetry
- To enable students to face Competitive Examinations in English
- To develop continuous writing of the students
- To make students read extensively.

Unit I - Prose

1. Building Self Confidence - by Norman Vincent Peale (Personality Development)
   From, English for Enrichment,
   Edited by Prof. K. Chellappan.
2. Sport- A Modern Hunting Ritual - by Desmond Morris (Essay),
   From, English for Enrichment,
   Edited by Prof. K. Chellappan.
3. The Soft Thunder of Lumbini - by Hugh and Colleen,
   (A travelogue Feature in a Newspaper)
   From, English for Enrichment,
   Edited by Prof. K. Chellappan.
4. She is Dancing Back in Life - by Deborach Cowley (A True Life Story)
   From, English for Enrichment,
   Edited by Prof. K. Chellappan.
5. Within Without - Rabindranath Tagore.

Unit II – Poems

1. Kali the Mother — Swami Vivekananda
2. Lochinvar — Walter Scott
3. Yossouf — James Russell Lowell
4. The Daffodils — William Wordsworth
5. Much Madness — Emily Dickinson
6. The Woman Who is ……(XCII) — Kabir Das
7. Stopping by Woods on a Snowy Evening — Robert Frost

Unit III - Objective English

- Sentence Completion
- Synonyms
- Antonyms
- Idioms and Phrases
- Substitution

Unit IV - Composition

- Descriptive writing - Topics on Personal Experience

- Resume Preparation
- SMS and E-Mail Preparation and sending.

Unit V Extensive Reading: Four Scenes from Shakespeare's plays.

1. **The Merchant of Venice.** Act IV – Scene I – Portia's Speech.
2. **Julius Caesar.** Act III – Scene II – Mark Antony and Brutus Speech.
3. **Twelfth Night.** Act V – Scene I – Before Olivia's House.
8. **Othello.** Act V – Scene II – A Bedchamber in the Castle.

Text Book: *Objective English for Competitive Examinations* – Hari Mohan Prasad, Uma Rani SInha, Tata McGraw Hill Education Private Limited, New Delhi. 2010, Fourth Edition

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – IV**

(For those who joined in June 2013 and After)

Part – III : Core Subject Theory		
Subject Title : **Sequences and Series**		
Sub. Code: **05CT41**	Hours per week:**6**	Credit: **5**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of solving problems.*

UNIT I:

Intervals in R – bounded sets – least upper bound and greatest lower bound of sets – bounded functions – triangle inequalities – arithmetic, geometric and harmonic means – Cauchy-Schwarz inequality – Weierstrass' inequality – theorems only (no problems).

UNIT II:

Sequences – bounded, monotonic, convergent, oscillatory, divergent sequences – algebra of limits – behaviour of monotonic sequences.

UNIT III:

Cauchy's first limit theorem – Cesaro's theorem – Cauchy's second limit theorem – subsequences – limit points – Cauchy sequences (upper and lower limit of a sequence not included).

UNIT IV:

Series of positive terms – convergence – Cauchy's general principle of convergence – comparison test, Kummer's test, D-Alembert's ratio test, Gauss' test, Cauchy's root test, Raabe's test, Cauchy's condensation test (proofs of tests not included) – simple problems.

UNIT V:

Alternating series – absolute convergence and conditional convergence – Dirichlet test – rearrangement of series – multiplication of series – power series.

Text Book:

- ✓ Sequences and Series by Dr. S. Arumugam. New Gamma Publishing House, Palayamkottai.

Reference Book:

- ✓ Algebra by T.K.Manicavachagom pillay, T. Natarajan, K.S. Ganapathy, S.Viswanathan (Printers & Publishers) Pvt Ltd, Chennai.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – IV**

(For those who joined in June 2013 and After)

Part – III : **Core Subject Theory**		
Subject Title : **Dynamics**		
Sub. Code: **05CT42**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill in solving problems.*

Unit – I

Projectiles – path of the projectile, range, etc. – velocity of the projectile in magnitude and direction at the end of time t – range on an inclined plane – enveloping parabola.

Unit – II

Collision of elastic bodies – fundamental laws of impact – impact of a smooth sphere on a fixed smooth plane – direct impact of two smooth spheres – oblique impact of two smooth spheres – loss of kinetic energy due to direct and oblique impact of two smooth spheres.

Unit – III

Simple Harmonic Motion – solution of S.H.M equation – geometrical representation of S.H.M – composition of two simple harmonic motions. simple pendulum – equivalent simple pendulum – seconds pendulum.

Unit – IV

Central orbits – velocity and acceleration in polar coordinates – differential equation of a central orbit – pedal equation of a central orbit – pedal equations of some well known curves – velocities in central orbits.

Unit – V

Moment of inertia – theorems on parallel and perpendicular axes – moments of inertia in some particular cases – Dr.Routh's rule.

Text Books:

- ✓ Dynamics by M.K. Venkataraman – Chapters: 6, 8 (sections 8.1 to 8.8), 10, 11 &12 (Agasthiar Publications Trichy)

Reference Book:

- ✓ Mechanics by P. Duraipandian, Laxmi Duraipandian, S. Chand and company Pvt. Ltd., New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – IV**

(For those who joined in June 2013 and after)

Part – III : Allied Part – III- **Allied Subject Theory**		
Subject Title : **PROGRAMMING IN C++**		
Sub. Code: **05AT41**	Hours per week: **3**	Credit: **3**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

To develop the skill of knowledge in computers and writing programmes.

Unit I: Basic concepts of Object Oriented Programming (OOP) – benefits of OOP – applications of OOP – operators in C++

Unit II: Functions in C++ – the main function – function prototyping – call by reference – return by reference – inline functions – default arguments – constant arguments – function overloading – friend and virtual functions – math library functions.

Unit III: Classes and Objects – specifying a class – defining member functions – static data members – static member functions – array of objects – friendly functions – returning objects.

Unit IV: Constructors and Destructors – constructors – parameterized constructors – multiple constructors in a class – constructors with default arguments – dynamic initialisation of objects – copy constructor – dynamic constructors – constructing two-dimensional arrays – constant objects – destructors – operator overloading.

Unit V: Inheritance – defining derived classes – single inheritance – multilevel inheritance – multiple inheritance – hierarchical inheritance – hybrid inheritance – virtual base classes – abstract classes – constructors in derived classes.

Text Book:

- ✓ Object Oriented Programming with C++ by E. Balagurusamy Fourth Edition Tata McGraw Hill Publishing Company Limited, New Delhi.

Reference Book:

- ✓ The Complete Reference in C++ Tata McGraw Hill Publishing Company Limited, New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – IV**

(For those who joined in June 2013 and after)

PART – III : Allied Subject Practical		
Subject Title : **Practical: Programming in C++**		
Subject Code: **05AP42**	Hours per week: **3**	Credit: **2**
Sessional Marks: **40**	Summative Marks: **60**	Total Marks: **100**

List of Problems for Lab

Object Oriented Programming with C++: practical

1. Program to convert Fahrenheit into Celsius.
2. Program to swap two numbers without third variable.
3. Program to find whether the given year is leap or not using '*if…else…*' statement.
4. Program to find the commission of sales using '*simple if*' statement.
5. Program to print odd numbers up to a range using '*while*' loop.
6. Program to find the factorial of a given number using '*for*' loop.
7. Program to generate Fibonacci series using '*do…while*' loop.
8. Program to generate the pyramid of digits.
9. Program to check whether the given number is a perfect number or not.
10. Program to calculate nCr value using '*function*'.
11. Program to explain '*function overloading*'.
12. Program to find the sum of three numbers using '*class*'.
13. Program to perform various arithmetic operations using '*member functions*' inside the '*class*'.
14. Program to display the basic details of a person using '*class*'.
15. Program to explain '*static data members*' of '*a class*'.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – IV**

(For those who joined in June 2013 and after)

Skill Based Subject		
Subject Title : **Competitive Mathematics**		
Sub. Code: **05SB41**	Hours per week: **2**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of solving problems in competitive exams.*

UNIT I:

HCF and LCM of numbers – decimal fractions.

UNIT II:

Square roots and cube roots – averages.

UNIT III:

Problems on ages – percentage.

UNIT IV:

Profit and loss – ratio and proportion.

UNIT V:

Partnership.

Text Book:

- ✓ Quantitative Aptitude for Competitive Examinations by Dr. R.S. Aggarwal, S. Chand & Company Pvt. Ltd., New Delhi.

Reference Book:

- ✓ Quantitative Aptitude, by Dr.R.S.Aggarwal, S Chand & Company Pvt. Ltd., 2010 Edition.

Department of English (Part-II) - **SEMESTER - V**

(For those who join in June 2015 and after)

PART II – Paper I		
Subject Title **:** **English for Career Development**		
Subject Code:**P2LE51 / P2CE51**	Hours per week: 1	Credit: 1
Sessional Marks: **100**		Total Marks: **100**

Total number of hours: 15 hours

Objectives:

- *To make students face Competitive Examinations with confidence*
- *To train students in writing book reviews*
- *To make them write reports, resolutions, minutes*
- *To make them prepare agenda for meeting.*

Unit I

- Comprehension

Unit II

- Spotting the Errors
- Sentence Improvement
- Voice
- Preposition
- Cloze Test or Numbered Gaps

Unit III

- Book Reviews

Unit IV

- Report-Writing
- Preparation of Agenda, Resolutions, Minutes

Unit V

- Extensive Reading – Self study – How to win Friends and Influence People –Dale Carnagie, Vermilian, London

Text Book:

- *Objective English for Competitive Examinations*, Hari Mohan Prasad Uma Rani Sinha, Tata McGraw Hill Education Private Limited, New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – V: PAPER – I**

(For those who joined in June 2013 and after)

PART – III : **Core Subject Theory**		
Subject Title : **STATISTICS**		
Subject Code: **05CT51**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill in solving problems.*

UNIT I: Correlation and regression – Karl Pearson's coefficient of correlation – rank correlation – regression lines – properties of regression coefficients.

UNIT II: Probability and random variables **–** probability set function – addition theorem on probability – conditional probability – independent events – Boole's inequality – random variables – discrete and continuous random variables – mathematical expectation – moment generating functions – characteristic functions.

UNIT III: Some special distributions **–** Binomial, Poisson and Normal distributions – moment generating function – mean, mode, standard deviation – recurrence relation for central moment – addition property – fitting of the distribution – area property of normal distribution – limiting cases.

UNIT IV: Tests of significance (small samples) **–** tests of significance based on t-test, F-test.

UNIT V: Tests of significance based on χ^2 - distribution – sampling distribution – testing of hypothesis – Chi-square test for population variance – goodness of fit – independence of attributes.

Text Book:

- ✓ Statistics by Dr. S. Arumugam and Prof. A. Thangapandi Isaac, New Gamma Publishing House, Palayamkottai.

Reference Book:

- ✓ Mathematical Statistics by J.N. Kapur and H.S. Saxena, S.Chand & Company Pvt. Ltd, New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – V: Paper - II**

(For those who joined in June 2013 and after)

PART – III : **Core Subject Theory**		
Subject Title : **Modern Algebra**		
Subject Code: **05CT52**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of understanding of definitions and theorems.*

Unit I:

Relations and mappings.

Unit II:

Definition of groups – examples – elementary properties – permutation groups – subgroups and cyclic groups.

Unit III:

Order of an element – cosets and Lagrange's theorem – normal sub groups – quotient groups.

Unit IV:

Isomorphism and homomorphism of groups.

Unit V:

Rings – definition – elementary properties – isomorphism – types of rings – characteristics of a ring – sub rings and ideals – quotient rings – maximal and prime ideals.

Text Book:

- ✓ Modern Algebra by Dr.S.Arumugam and Prof.A. Thangapandi Isaac, Scitech Publications Pvt. Ltd., Chennai.

Reference Book:

- ✓ Modern Algebra by M.L. Santiago, Tata McGraw Hill publishing Company Pvt. Ltd., New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – V: PAPER – III**

(For those who joined in June 2013 and after)

PART – III : Core Subject Theory		
Subject Title **: REAL ANALYSIS**		
Subject Code: **05CT53**	Hours per week: **5**	Credit: **5**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of understanding definitions and theorems.*

UNIT I:

Countable sets – uncountable sets – inequalities of Holder and Minkowski. metric spaces – definition and examples – bounded sets in a metric space – open ball in a metric space – open sets.

UNIT II:

Sub spaces – interior of a set – closed sets – closure – limit point – dense sets.

UNIT III:

Complete metric space – Baire's category theorem – continuity – homeomorphism – uniform continuity.

UNIT IV:

Connectedness – definition and examples – connected subsets of R – connectedness and continuity.

UNIT V:

Compactness – compact space – compact subsets of R – equivalent characterization for compactness – compactness and continuity.

Text Book:

- ✓ Modern Analysis by Dr.S.Arumugam, and A.Thangapandi Issac, New Gamma Publishing House.

Reference Book:

- ✓ Principles of Real Analysis By Chandra Sekara Rao

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – V**

(For those who joined in June 2013 and After)

Part – III : **Core Subject Theory**		
Subject Title : **STATICS**		
Subject Code: **05CT54**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill in solving problems.*

UNIT I:

Introduction – force – types of forces – equilibrium – principle of transmissibility – forces acting at a point – parallelogram law of forces – triangle law of forces – polygon law of forces – Lami's theorem – $(\lambda-\mu)$– theorem – resolution of forces – components of forces – resolved parts – resultant of any number of forces acting at a point – condition of equilibrium of any number of forces acting at a point.

UNIT II:

Parallel forces and moments – resultant of two like and unlike parallel forces – conditions of equilibrium of three coplanar parallel forces – moment of a force – geometrical representation of moment – Varignon's theorem – generalized theorem – moment of a force about an axis – couple – equilibrium of two couples – equivalence of two couples – couples in parallel planes – resultant of coplanar couples – resultant of a couple and a force.

UNIT III:

Equilibrium of three forces acting on a rigid body – conditions of equilibrium – two trigonometrical theorems – solving statical problems (simple problems) – coplanar forces – reduction of coplanar forces – conditions for a system of coplanar forces to reduce to a single force or to a couple – equation to the line of action of the resultant – conditions of equilibrium of a system of coplanar forces (simple problems only).

UNIT IV:

Friction – statical, dynamical and limiting friction – laws of friction – co-efficient of friction – angle of friction – cone of friction – equilibrium of a particle on a rough inclined plane – equilibrium of a body on a rough inclined plane under a force parallel to the plane – equilibrium of a body on a rough inclined plane under any force.

UNIT V:

Equilibrium of strings – equation of the common catenary – tension at any point – important formulae – geometrical properties of the catenary – approximations – parabolic catenary – suspension bridge.

Text Book:

- ✓ Statics by M.K. Venkataraman – (Chapters: 1, 2, 3, 4, 5, 6, 7 & 11), Agasthiar publications Trichy.

Reference Book:

- ✓ Mechanics by P.Duraipandian, Laxmi Duraipandian, S. Chand and company Pvt. Ltd., New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – V: PAPER-I**

(For those who joined in June 2013 and after)

PART – III : Elective Subject		
Subject Title **: LINEAR PROGRAMMING**		
Subject Code: **05EP51**	Hours per week: **5**	Credit: **5**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objectives:

- *To develop the skill in forming models,*
- *To develop the skill in Solving Problems.*

UNIT I:

Linear Programming Problem – mathematical formulation of the problem –LPP-graphical solution method – some exceptional cases – general LPP – canonical, standard forms of LPP.

UNIT II:

LPP-simplex method – fundamental properties of solutions – the computational procedure – use of artificial variables – two phase method – penalty (Big-M) method.

UNIT III:

Duality in linear programming – general primal-dual pair – formulating dual problem – primal-dual pair in matrix form – duality and simplex method.

UNIT IV:

Transportation problem (TP) – general transportation problem – the transportation table – duality in transportation table – loops in transportation tables – formulation of the TP – solution of a TP – north west corner method – least cost method – Vogel's approximation method – degeneracy in TP – transportation algorithm (modi method) - unbalanced TP.

UNIT V:

Assignment problem – mathematical formulation of the problem – the assignment method – special cases in assignment problems – games and strategies – two person zero-sum games – some basic terms – the maxmin, minmax principle – saddle points – graphic solution – dominance property – linear programming method.

Text Book:

- ✓ Operations Research by Kanti Swarup, P.K.Gupta, Man Mohan. Publisher: Sultan Chand & sons company Pvt. Ltd., New Delhi.

Reference book:

- ✓ Operations Research by J.K.Sharma, Macmillan Publication India Pvt. Ltd., New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – V: PAPER-III**

(For those who joined in June 2013 and after)

PART – III : **Skill Based Subject**		
Subject Title : **Quantitative Aptitude**		
Subject Code:**05SB51**	Hours per week: **2**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of solving problems in Competitive Exams.*

Unit-I:

Time and work – time and distance

Unit –II:

Problems on trains

Unit – III:

Simple interest – compound interest

Unit – IV:

Logarithms – calendar

Unit – V:

Clocks – stocks and shares.

Text Book:

- ✓ Quantitative Aptitude for competitive examinations by Dr. R.S.Aggarwal, Tata MCGraw Hill publication, New Delhi, 2004 Edition.

Reference Book:

- ✓ Quantitative Aptitude by Dr. R.S.Aggarwal, S. Chand & Company Pvt. Ltd., 2010 Edition.

(For those who joined in June 2013 and after)

Part – IV : Common Subject Theory		
Subject Title : **Environmental studies**		
Subject Code: **ESUG51**	Hours per week: **2**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

2hrs/week 24hrs

Objectives:

- *Disseminate information of Environment of national and international issues*
- *Environmental consciousness creation among the students*
- *Facilitation of environmental leadership among students*

Unit-I: 5 hrs

Introduction – Nature, scope and importance of Environmental studies – Natural Resources and conservation – forest, water and energy.

Unit-II: 5 hrs

Ecosystem – concept – structure and function, energy flow, food chain, food web and ecological pyramids

Unit-III: 5hrs

Biodiversity – definition, types – values – India, a mega diversity zone – Hotspots – Endangered and endemic species – threat to biodiversity and conservation

Unit-IV: 5 hrs

Environmental pollution – Air pollution- causes and effect – Ozone depletion – Global warming – acid rain – Water pollution – Noise pollution – Solid waste management – Nuclear hazard

Unit-V: 4hrs

Human population and the environment – Population growth – variation among nations – effects of population explosion – family welfare programme – environment and human health.

Text books

- ✓ Environment studies by R.Murugesan, 2009 edition, Milleneum Publication., Madurai-16.

Department of English (Part-II) - **SEMESTER VI**
(For those who join in June 2015 and after)

PART II – Paper I		
Subject Title **: English for Professional Excellence**		
Subject Code:**P2LE61 / P2CE61**	Hours per week: **1**	Credit: **1**
Sessional Marks: **100**		Total Marks: **100**

Total number of hours: 15 hours

Objectives:

- *To make students face Competitive Examinations with confidence*
- *To prepare students to face interviews*
- *To make students familiar with books and authors in English literature*
- *To make students prepare resume*
- *To motivate students to participate in Group Discussion*

Unit – I:

- Sentence Completion
- Sentence Fillers
- Synonym
- Antonym
- Idioms and Phrases
- Substitution

Unit – II:

- Sentence Arrangement
- Jumbled sentences
- Paragraph Reconstruction
- Analogy

Unit III:

- Interview Skills – mock – interview.
- Debate, Group Disscussion, Resume Writing

Unit IV:

- Books and authors in English literature

Text Book: *Objective English for Competitive Examinations*, Hari Mohan Prasad Uma Rani Sinha, Tata McGraw Hill Education Private Limited, New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – VI: PAPER - I**

(For those who joined in June 2013 and after)

PART – III : **Core Subject Theory**		
Subject Title : **Linear Algebra**		
Subject Code: **05CT61**	Hours per week: **5**	Credit: **4**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of solving problems.*

Unit-I: Vector spaces – definition and examples – subspaces – linear transformation – span of a set – linear independence – basis and dimension – rank and nullity.

Unit-II: Inner product spaces – definition and examples – orthogonality – orthogonal complement.

Unit – III: Theory of matrices – algebra of matrices – types of matrices – the inverse of a matrix – elementary transformations – rank of a matrix.

Unit –IV: Simultaneous linear equations – characteristic equation – Cayley Hamilton theorem – eigen values and eigen vectors.

Unit –V: Matrix of a linear transformation – relation between multiplication of matrices and the composition of their linear transformations – bilinear forms – quadratic forms.

Text Book:

- ✓ Modern Algebra by Dr.S. Arumugam and A. Thangapandi Issac, Scitech Publications, Chennai.

Reference Book:

- ✓ Linear Algebra by S.kumaresan, Prentice publications.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – VI: Paper - III**

(For those who joined in June 2013 and after)

PART – III : **Core Subject**		
Subject Title : **Complex Analysis**		
Subject Code: **05CT62**	Hours per week: **5**	Credit: **5**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objectives:

- ❖ *To develop the skill of understanding definitions and theorems.*
- ❖ *To develop the skill in solving problems.*

Unit I:

Elementary transformations – bilinear transformations – cross ratio – fixed points of a bilinear transformation – bilinear transformations which map the real axis onto itself, unit circle onto itself, real axis onto the unit circle.

Unit II:

Cauchy Riemann equations – complex form of C.R. equations – C.R. equations in polar co-ordinates – analytic functions – harmonic functions – Laplace equation – finding conjugate harmonic of an analytic function – Milne-Thompson method.

Unit III:

Complex integration – definite integral – length of a curve – Cauchy's theorem – simply connected and multiply connected regions – Cauchy's integral formula – maximum modulus theorem – higher derivatives – derivative of an analytic function is analytic – Cauchy's inequality – Liouville's theorem – fundamental theorem of algebra – Morera's theorem.

Unit IV:

Series expansions – Taylor's theorem – Taylor's series – Maclaurin's series – Laurent's theorem – Laurent's series – zeros of an analytic function – order of a zero – singular points – isolated singularity – removable singularity – poles – order of a pole-simple pole – double pole – essential singularities.

Unit V:

Calculus of residues – residues – Cauchy's residue theorem – argument theorem – Rouche's theorem – fundamental theorem of algebra – evaluation of definite integrals – contour integration (problems only).

Text Book:

- ✓ Complex Analysis by Dr.S.Arumugam, A. Thangapandi Issac and A.Somasundaram. Scitech Publication, Chennai.

Reference Books:

- ✓ Complex Analysis by Dr.T.K.Manickavachagampillay, S.Viswanathan pritners and publishers Pvt Ltd.
- ✓ Complex Analysis by Dr. Durai pandian and others. Emerald Publishers, Chennai.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – VI: Paper - II**

(For those who joined in June 2013 and after)

PART – III : **Elective Subject**		
Subject Title : **Graph Theory**		
Subject Code: **05EP61**	Hours per week: **5**	Credit: **5**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of understanding the definitions, the theorems and skill of Solving Problems.*

Unit I: Graphs and subgraphs – definition and examples – degrees – sub graphs – isomorphism between graphs – Ramsey numbers – independent sets and coverings – intersection graphs and line graphs – matrix of a graph – operations on graphs.

Unit II: Degree sequences – graphic sequences – connectedness – walks, trails and paths – connectedness and components – blocks – connectivity.

Unit III: Eulerian graphs – Hamiltonian graphs – trees – characterization of trees – centre of a tree.

Unit IV: Matchings – matchings in bipartite graphs – planarity – definition and properties – characterization of planar graphs – thickness, crossings and outer planarity.

Unit V: Colourability – chromatic number and chromatic index – five colour theorem – four colour problem – chromatic polynomials.

Text Book:

- An invitation to Graph Theory by Dr. S. Arumugam & S. Ramachandran, Scitech Publishing Company, Chennai.

Reference Book:

- Graph Theory by Frank Harary, Publisher, Addison – Wesley Publishing Company, New Delhi.

(For those who joined in June 2013 and After)

PART – III : Elective Subject		
Subject Title **: Operations Research**		
Subject ode:**05EP62**	Hours per week: **6**	Credit: **5**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of forming OR models and the skill of solving problems.*

Unit – I:

Inventory control – cost associated with inventories – factors affecting inventory control – Economic Order Quantity (EOQ) – deterministic inventory problems with no shortages – probabilistic inventory problems.

Unit – II:

Queuing theory – elements of queuing system and characteristics of queuing system – probability distribution in queuing systems – classification of queuing models – Poisson queuing systems (M / M / 1) : (∞ / FIFO), (M / M / 1) : (N / FIFO)

Unit – III:

Network scheduling by PERT/CPM – network and basic components – logical sequence – rules of network construction – numbering the events – critical path analysis – probability consideration in PERT – distinction between PERT and CPM.

Unit – IV:

Sequencing problems – problem of sequencing – basic terms used in sequencing – processing n jobs through two machines – processing n jobs through k machines – processing two jobs through k machines

Unit – V:

Replacement problem and system reliability – replacement of equipment/asset that deteriorates gradually – replacement policy when the value of money does not change with time – replacement policy when value of money changes with time.

Text Book:

- ✓ Operations Research by Kanti Swarup, P.Kapur, Gupta and Man Mohan, Sultan Chand & Sons Publishers, New Delhi.

Reference Book:

- ✓ Operations Research by J.K. Sharma, Mac Millan publishers, New Delhi.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – VI: PAPER-IV**

(For those who joined in June 2013 and after)

PART – IV : **Skill Based Subject**		
Subject Title : **Applied Statistics**		
Subject Code: **05SB61**	Hours per week: **2**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks:**100**

Objective:

- *To develop the skill of solving problems*

Unit – I: Attributes – definition – positive and negative classes – class frequencies – dichotomization

Unit – II: Consistency of data – association of attributes.

Unit – III: Analysis of variance (ANOVA) – introduction – one way classification.

Unit – IV: Two way classification.

Unit – V: Randomized block design and latin square design.

Text Book:

- ✓ Statistics by Dr.S. Arumugam, New Gamma Publishing House.

Reference Book:

- ✓ Mathematical Statistics by Kapur and Gupta.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – VI: PAPER II**
(For those who joined in June 2013 and after)

PART – IV: Skill Based Subject		
Subject Title **: Boolean Algebra**		
Subject Code: **05SB62**	Hours per week: **2**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill in solving problem.*

Unit – I:

Relations - reflexive, symmetric, transitive and equivalence relations – antisymmetric relations – partial order relations – posets – linearly ordered sets – chain.

Unit – II:

Representation of finite posets by diagrams – diagrams for M_5 and N_5 – zero and unit elements in a poset – greatest lower bound and least upper bound.

Unit – III:

Lattice – definition and examples – Idempotent, commutative, associative and absorption laws – sublattices – distributive lattices – modular lattices.

Unit – IV:

Complemented lattices – Boolean algebra – De Morgan's laws – homomorphisms – kernel of a homomorphism – isomorphisms – ideal of a Boolean algebra.

Unit – V:

Definition of a Boolean algebra B (+, *, ', 0, 1) – Boolean algebra of bits – subalgebra – principles of duality – bounded and involution laws – diagrams for D_{70} and D_{210} – atoms – representation theorem.

Text Books:

- ✓ Modern Algebra by Dr. S.Arumugam and others.
- ✓ Discrete Mathematics by Seymour Lipschutz, Mark Lipson, Schaum series

Reference Book:

- ✓ Discrete Mathematics by N.CH. S.N. Iyengar, V.M. Chandrasekar, K.A.Venkatesh, P.S.Arunachalam, Vikas publishing Home P.Ltd.

B.Sc. Mathematics CBCS Syllabus - **SEMESTER – VI: PAPER-VI**

(For those who joined in June 2014 and after)

PART – IV : **Skill Based Subject**		
Subject Title : **MS OFFICE PRACTICAL**		
Subject Code: **05SB63**	Hours per week: **2**	Credit: **2**
Sessional Marks: **40**	Summative Marks: **60**	Total Marks: **100**

Objective:

- *To develop the skill of MS Office practical.*

UNIT – I MS-Word – Text manipulation (Bio-Data) – Page formating (Borders, Background etc.)

UNIT –II MS-Word – Working with tables – Working with graphics – Mail merge

UNIT –III MS-Excel – Formatting worksheet – Preparing students mark statement

UNIT –IV MS-Excel – Preparing employees salary – Creating chart

UNIT – V MS –Powerpoint – Creating simple presentation – Custom animation. (Text animation, Picture animation)

Text Book

- ✓ P.C. Software by R.K. Taxali.

(For those who joined in June 2013 and after)

PART – IV : Common Subject Theory		
Subject Title **: Value Education**		
Subject Code: **VEUG61**	Hours per week: **2**	Credit: **2**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

UNIT I: The heart of Education:

Introduction – Eternal Value – Integrated approach to value education - one for all and all for one – Responsibilities of a citizen – Habit Vs wisdom – purifying mind pollution – Respect for all Religions – Parents, teachers and fellow students – The need and benefit of exercise and meditation for students.

UNIT II: The Value of Body and Life Energy

Introduction – what are the causes for paid, Disease and death? Three Basic needs for all living Beings – Personal Hygeine Five Factors of Balance in Life – The need and benefits of physical Exercise – The value and Base of Life energy – The value and Base of Bio-magnetism - You are your own best caretaker. The Marvelous nature of mind Introduction- Bio-magnetism – The base of the mind – characterisation of the Genetic Centre – metal frequency – practice for a creative mind - benefits of meditation.

UNIT III: Analysis of Thought

Introduction – An Explosition on the nature of thought– six roots for thoughts – Introspection for analysis of thoughts-practical techniques for analysis of thoughts. Benefits of Blessings Effects of good vibrations – Make Blessing a Daily Habit.

UNIT IV: Moralisation of Derive

Introduction – moralization of desire - Analyse your desires – Summary of practice Neutralision of Anger:Introduction – meaning – characteristics of Anger – Anger is a Destructive emotion – Anger spoils our relationship with others – Some common misconception about anger – will power and method success through awareness – method of neutralisation of anger.

UNIT V: Eradication of Worries

Worry is a mental disease – Nature's Law of cause and effect – factors beyond our control – How to deal with problems – analyse your problem and eradicate worry –Harmonious Relationships Introduction – Three angles of life – The value of harmony in personal relations – Love and Compassion – pleasant face and loving words – appreciation and gratitude to parents and teachers – Bringing needed reforms in educational institutions – Why should we serve others? Brotherhood – A scientific Basis for Universal Brotherhood protection of the environment – non-violence and the fivefold moral culture.

Text Book: Value Education for Health, Happiness and Harmony

(Based on the Philosophy and Teachings of Swami Vethanthiri Maharisi)
Published By: Brain Trust, Aliyar A Wing of World Community Service Centre.

(For those who joined in June 2013 and after)

PART – V : Common Subject Theory		
Subject Title **: Extension Activities**		
Subject Code: **EAUG61**	Hours per week:	Credit: **1**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

UNIT-I: Community Development–I:

Definition – structure and composition – community based issues – need for awareness – Developmental Programmes.

UNIT – II: Community Development–II:

Rural Scenario – need of the Community – need for the community service – role of youth in community building – communal harmony – literacy – Educational Recreation.

UNIT – III: Volunteer Empowerment:

Women's Emancipation – formation of Youth Clubs – Self-Help Groups – Youth and Development.

UNIT – IV: Social Analysis:

Social issues – cultural invasion – media infiltration – human rights Education/Consumer Awareness – Adolescents Reproductive – HIV/AIDS/STD – Social harmony/National integration – Blood Donation.

UNIT – V: Introduction to NSS:

Basic Concepts – profile – aims – objectives – symbol – Motto – structure – Regular activities – Special Camping Programme – Adventure Programme – National Days and Celebrations.(Applicable to NSS Students)

(OR)

NCC - Origin – Organisation – Ministry of Defence – Armed forces – commands – Defence establishments in Tamil Nadu Civil Defence – Aid to civil authorities – Disaster management – Leadership – Man management – Adventure activities – Social service

Reference:

✓ National Service Scheme Manual (Revised), Ministry of Human Resources Development, government of India.

Department of Mathematics - **SEMESTER – III**

Allied Subject Theory for Physics & Chemistry Major

(For those who joined in June 2013 and After)

PART – III : **Allied Subject Theory**		
Subject Title : **MATHEMATICS – I**		
Subject Code: **05AT01**	Hours per week: **6**	Credit: **5**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective

- *To develop the skill of solving problems.*

Unit – I:

Trigonometry – expression for sin nθ, cos nθ and tan nθ – expression for $\sin^n \theta$ and $\cos^n \theta$ – expansion of sinθ, cosθ and tanθ as a series in ascending powers of θ – hyperbolic functions and inverse hyperbolic functions.

Unit – II:

Differential calculus – differentiation methods – successive differentiation (up to second order derivative only, omit Leibnitz theorem).

Unit –III:

Integral calculus – properties of definite integrals – reduction formula for $\int \sin^n x\, dx$, $\int \cos^n x\, dx$ and $\int \sin^m x \cos^n x\, dx$ only – double and triple integrals (simple problems).

Unit IV:

Vector differentiation – differentiation of vectors – gradient of a vector – directional derivative and its maximum value – divergence and curl of a vector – solenoidal and irrotational vectors (simple problems only).

Unit V:

Line and surface integrals – Green's theorem, Stoke's theorem and Gauss' divergence theorem (statements only) – verifications (simple problems).

Text book:

- ✓ Ancillary Mathematics by Dr.S.Arumugam & Issac. Vol I – IV (Relevant Chapters), New Gamma Publishing House, Palayamkottai

Reference:

- ✓ Ancillary Mathematics by T.K Manikavasagampillai & Others Viswanathan printers and publishers Pvt. Ltd., Chennai.

Department of Mathematics - **SEMESTER - IV**

Allied Subject Theory for Physics & Chemistry Major

(For those who joined in June 2013 and After)

PART – III : **Allied Subject Theory**		
Subject Title : **MATHEMATICS - II**		
Subject Code: **05AT02**	Hours per week: **6**	Credit: **5**
Sessional Marks: **25**	Summative Marks: **75**	Total Marks: **100**

Objective:

- *To develop the skill of Knowledge in Mathematics and Solving problems*

UNIT I:

Formation of differential equation – differential equation of first order and first degree – variables seperable, homogeneous and nonhomogeneous differential equations – linear equations.

UNIT II:

Second order linear differential equations with constant coefficients – methods of finding particular integrals for the funtions of the type e^{ax}, cos ax, sin ax, x^m, $e^{ax}V$ – second order linear differential equations with variable coefficients.

UNIT III:

Laplace transforms – inverse Laplace transforms – solution of differential equations using Laplace transforms.

UNIT IV:

Formation of partial differential equations – definition of complete, particular, singular and general integrals – solving first order partial differential equations.

UNIT V:

Fourier series – Fourier series for even and odd funtions – half range Fourier cosine and sine series.

Text Book:

- ✓ Ancillary Mathematics by Dr.S.Arumugam & Issac. Vol I – IV (Relevant Chapters), New Gamma Publishing House, Palayamkottai

Reference Book:

- ✓ Ancillary Mathematics by T.K Manikavasagampillai & Others Viswanathan, printers and publishers Pvt Ltd. Chennai.