SUBJECT – WISE CURRICULUM

STD I – X

ENGLISH CURRICULUM FOR MATRICULATION SCHOOLS

Introduction

English has been and continues to be the medium of instruction in Matriculation schools. Preserving its old identity as a university entrance qualification, matriculation system of school education has an exponential growth from the initial school strength of 15 to the present phenomenal size of 3500. The public support to such a development lies mainly in the medium and in the consequent quality standard of preparing the children for university education. Now that the university education has horizontally spread from the established general academics to several professions, there is a vital need for strengthening the learning and teaching of English in this system. From Std I to Std X, ten years are needed to develop academically and even vocationally competent students to successfully pursue higher education in general and professional courses, offered through universities, deemed universities and autonomous colleges. A definite line of strengthening English has to be adopted to achieve these objectives.

OBJECTIVES

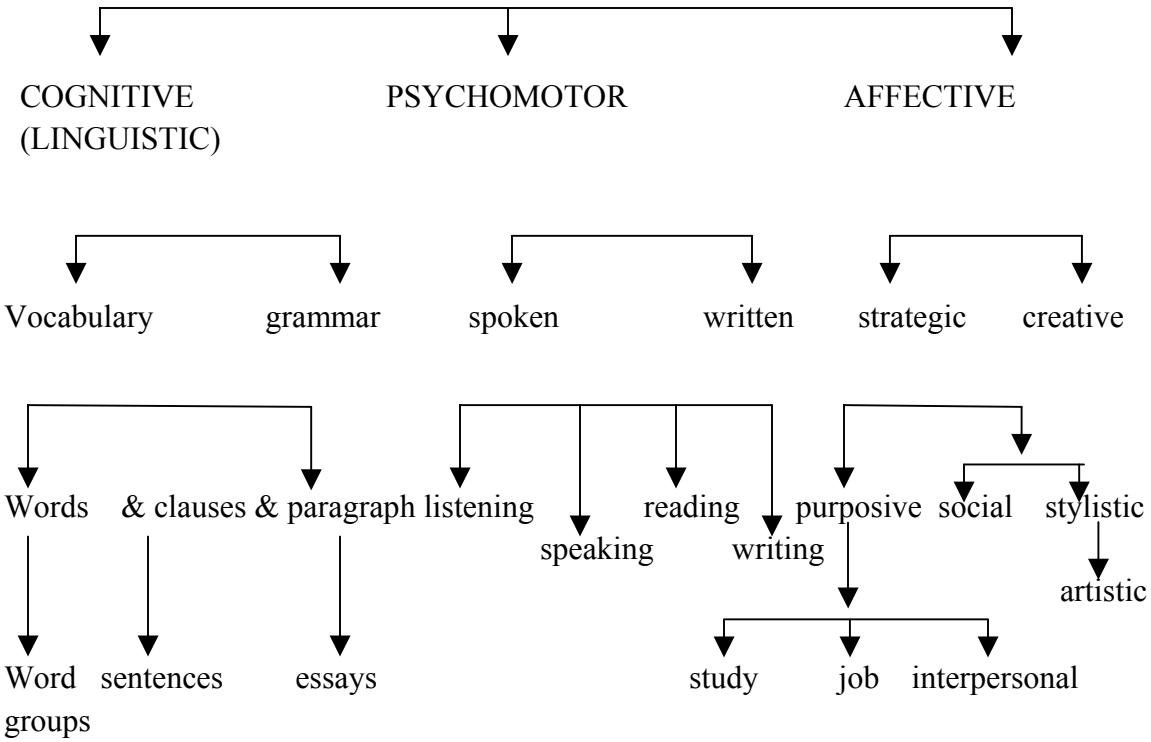
Matriculation education should enable its students

1. to have sufficient command over the elements of English language comprising adequate vocabulary and relevant grammatical and usage aspects;
2. to develop the four basic skills of listening, speaking, reading and writing for appropriate application in the contexts arising;
3. to integrate such linguistic knowledge and skills into communication strategies dealing with study skills, occupational skills and interpersonal skills;

4. to display an appreciable communicative competence through their effective performance in real – life situations; and

5. to be creative enough to manage several situations requiring the fulfillment of diverse needs by individual talents.

COMMUNICATIVE COMPETENCE



WORDS	Spelling syllables, stress, part of speech, meanings & usage
WORD GROUPS	Noun groups (nominative, possessive, accusative cases), Verb groups(verb phrase & phrasal verbs) adjuncts (prepositional phrases, adverbial phrases), Idioms(unique, sleight), word order(Decl, interr, excl)
CLAUSES	Dependent vs independent Noun, Adjectival & Adverbial clauses.

SENTENCES	Types(simple, compound, complex), kinds (Decl, Imper, interr, excl), word order in each type and kind. Types of questions(yes /no, wh-, alternative, involved, imperative, echo, tag)
CHANGES	Reduction, Transformation, Comparison, Reported speech
PARAGRAPHS	Coherence & Cohesion, Inter-sentential links, topic sentence, indentation, structure of paras(inductive, deductive, inducto-deductive), Stylistic devices
ESSAYS	Forms, purposes, Letters, Reports, Expository writing, précis-writing
LISTENING	Face-to-face, audio-tapes, radio, TV, video-clipping telephonic, Note-taking
SPEAKING	Conversation (face-to-face, telephonic), interview, discussion, participation in meetings and seminars, debates.
READING	Loud & silent; scan & skim; rapid reading, reading for main points,supplementary details/ information, and organisation: Note-making
WRITING	Defining, describing, explaining, designating, illustrating, cataloguing, comparing, contrasting, interpreting, conditioning, inferring, stating, evaluating, opining, classifying, directing, narrating, reporting, substituting, deferring, coordinating

STUDY SKILLS	Register, rhetoric, discourses, mnemonic devices, referencing schemata
JOB SKILLS	Advertising, responding, preparing C.V., journalistic, officialese, corresponding through letters, e-mail, etc.
SOCIAL SKILLS	Convincing, negotiating, arguing, debating, judging, persuading, appealing, cooperating, cautioning, criticizing, mild warning, veiled threats, praising, eulogizing, encouraging, supporting, greeting, felicitating, honouring, agreeing, disagreeing, preferring, postponing, advancing, consensus seeking.
CREATIVE SKILLS	Jumbled events, hints development, expansion, summarizing, letter to the editor, skills, jokes, story telling, one-page story writing one act plays, poetry and prose, verification, advertisements, media writing, channel conversion.
MATERIALS	From Stds I to VIII a variety of learning materials in the form of texts, workbooks, practices and projects can be adopted. From special teacher made materials to creative publishers production can be considered. However, the secondary education of the last two years is an entity by itself and hence needs a neatly designed, well-organised, cumulatively completed course materials, preferably prepared in common for the entire state.
METHODS	Task learning provides for individual development. Teachers should be able to formulate appropriate tasks for individual , pair, small group and large group involvement of students in developing their communicative competence. The distinction between the traditional exercises as repetitive attempts to skill development and the current tasks as real-life

situations requiring effective use of language should promote novel techniques of teaching catering to the dynamic needs and aspirations of younger generations.

MEDIA

Throughout the system a good number of educational media, from the conventional cards and charts to the technologically advanced power point L.C.D., a large option is available to the learners and teachers. Advertisements in media and news stories and episodic events which attract the common man should be intelligently converted into educational media in the matriculation system.

TESTING

There is a need to follow different types of testing at different stages of this system. From the fitting pattern of pass – fail to the functional exhibit of performance profiles needs to be adopted. However as the last years have to be dovetailed into the higher education the final examinations can follow a blue print approach as illustrated below.

MATHEMATICS CURRICULUM FOR MATRICULATION SCHOOLS

Mathematics is a major discipline of study that has its roots in the systematic development of methods to solve practical problems. In recent decades there has been an immense growth in the use of mathematics in other areas of study. It is mathematics which, for example, lies behind the computer technology, medical technology such as body scanners, cryptographic techniques that are needed for electronic financial transactions, control of space probes, etc. In view of the growing importance of mathematics in all areas of study, the mathematics teaching at school should prepare the students adequately in knowledge, skills and values of mathematics.

Overall Objectives of Teaching of Mathematics

The twelve years of mathematics training in school should aim at the following:

1. To enable the learner to solve mathematical problems of daily life
2. To develop in the learners an acquaintance with their culture
3. To provide a suitable type of discipline to the mind of the learner
4. To prepare the learner for technical professions such as those of accountant, auditors, bankers, surveyors, cashiers, engineers, scientists, statisticians and mathematics teachers.
5. To prepare the learner for economics, purposeful, productive, creative and constructive living
6. To develop in the learner a sense of appreciation of cultural arts
7. To prepare the learner for elementary as well as higher education in sciences, economics, engineering, psychology, etc.
8. To develop the habits of concentration, self-reliance and discovery
9. To develop in the learner the powers of thinking, reasoning and expression
10. To enable the learner to understand and enjoy popular literature
11. To develop in the learner a scientific and realistic attitude towards life
12. To bring about all-round, harmonious development of the personality of the learner

Aims of Teaching Mathematics by Levels

Although the overall aims of teaching mathematics are the same at all levels and although each level of study forms the basis for the next higher level, there is a change in priorities for each level. For example, the aim of teaching mathematics at elementary level is to give a good beginning in mathematics training. The syllabus is constructed in such a way to facilitate the understanding of main facts and methods of mathematics. The priority is on understanding. It also aims to arouse and sustain the learner's interest in solving practical problems. The application of facts and methods are related to simple practical problems.

At the same time, as the students go to the secondary level, abstract concepts are

introduced. The priority shifts towards analysis and it prepares the students for specialisation in mathematics at the higher secondary level. Some amount of independent thinking and clarity in expression is expected at this stage. Accordingly the methods of teaching incorporate student activities in teams.

At the higher secondary level, there is a distinct shift towards further specialisation and it prepares the students for higher studies that may require a reasonable foundation in mathematics. It also aims to provide the necessary skills for gainful employment for those who will have higher secondary education as the terminal studies. Consequently, the learners are trained to apply the facts and methods independently to solve problems.

In line with the above mentioned objectives, an attempt has been made to present the objectives of teaching mathematics according to different levels and they need to be discussed and firmed up.

Primary Level

In particular, at the primary level, the objectives would be as follows:

1. To give a good start to the students in learning mathematics
2. To provide to them clarity on fundamental concepts and processes of the subject
3. To create in them an enduring interest and faith in the subject and to develop a love for it
4. To introduce them to mathematical games, puzzles, recreations, hobbies and activities and to unravel before them the mysteries of the subject.
5. To develop in them a taste and confidence in mathematics
6. To ensure in them accuracy and efficiency in fundamental processes and develop appreciation for accuracy
7. To acquaint them with the relation of mathematics with their present as well as future life

8. To develop in them the habits like regularity, practice, patience, self-reliance and hard work

9. To acquaint them with mathematical language and symbolism

10. To prepare them for the learning of mathematics of higher classes

As one could see, the focus is on providing a strong base in terms of knowledge and interest to the learners of mathematics.

Secondary Level

At the secondary level, the shift in focus should be towards application, analysis and attitude.

A school- leaver who has studied mathematics up to the Secondary Level should be able to

- Demonstrate a good level of understanding of the basic concepts of mathematics
- Demonstrate a good level of skill in calculation
- Demonstrate a good level of skill in manipulation of simple data
- Apply the mathematics principles to solve practical problems independently
- Present clear arguments and conclusions to problem situations
- Demonstrate the ability to carry out simple projects that deal with data independently
- Demonstrate the ability to find solution to unfamiliar practical problems with little guidance

PHYSICS

Introduction

The revision of the existing 1995 Science syllabus for the Matriculation Schools has been done with the main Objectives:

1) Concepts to be introduced strictly logically so that the horse is in front of the cart:- existing anomalies in this regard have been removed.

2) Modular in structure: The subjects are developed gradually and the units though retained with the same names emphasise the next concept based on the earlier concepts or change in emphasis in the use of the concept to a different (logically

the next) advanced concept.

3) New Units: The rearrangement and removal of the repetitive parts enabled us to introduce some new units for study in the X Std. These are: Properties of matter, Modern Physics and the Universe.

The new concepts and the units introduced take into account either the firmly established concepts introduced in the last century or concepts which have revolutionized the technological developments in the later half of the last century.

A word the authors of the Text Books to be written on the basis of this new syllabus:

1. Bank on your rich experience in discharging the responsibility of writing the Text Book.

2. Emphasis is to be placed on giving as many examples as is possible to enable the understanding of the concepts from real life.

3. The older as well as the newer units introduced should emphasize the physics behind the concepts and the technological advances made due to the new concept, rather than simply giving the theoretical derivations of formulas connected with the concept (since the required mathematical background would be inadequate).

CHEMISTRY

Chemistry occupies the central part of science wherein the physical world as represented by Physics merges on to the world of organisms and life sciences. In itself chemistry divides into a spectrum of physical chemistry, inorganic chemistry and organic chemistry, the first akin to physics and the last has a lot to do with biology.

The curriculum for chemistry has been designed to maintain this centrality position and keeps close to not only with other branches of science laterally but also to be contiguous from one stage to the other vertically. The design takes into account the latest developments into account and introduces them at the appropriate levels. Though it is improved and updated over the previous chemistry syllabus, the basic fibre of chemical

principles, methods and procedures are kept intact. Care has been taken to keep the curricular load of chemistry appropriate to the age level.

Besides practicals, projects are suggested wherever possible for all the levels in all the stages, to improve the skills of observation, data collection and analysis among students.

The technology aspect is stressed in the treatment of industrial process of manufacture of chemicals and in detailing of their industrial uses.

The contents are chosen keeping in view the learning outcomes expected. A strategy to help curricular transaction is suggested. This is only indicative and not prescriptive. The teachers can innovate in the use of multifarious techniques and devices and effectively put this curriculum through.

The chemistry curriculum aims at inculcating observational skills among children leading to developing an understanding of the composition, properties, uses of various elements and compounds in the Universe in their entirety.

CURRICULUM FOR BIOSCIENCES

Introduction

Biology is treated as Botany and Zoology in the Matriculation Syllabus. Certain integrated aspects of Biology such as Cell Biology, Genetics and Eco-Biology are included in Botany and Zoology syllabus as appropriate.

Objectives

Objectives of Bio-Sciences Curriculum are to make children aware of the bio-diversity, the equilibrium in the bio-system and make them realise the significance of nurturing the environment without pollution. As understanding of these internal

physiological systems of living things is essential for the above overall goal, these have been introduced at the appropriate levels and in appropriate depth.

Concepts in Botany and Zoology

The syllabus is presented in the form of concepts. Biological concepts have to be understood by the learners. The cellular, molecular and environmental approaches for developing the concepts have been utilised as appropriate in Standards VI to X. Molecular approach has been focussed in Std. X. Biochemical and Biotechnological studies have also been included in Std X.

The biological concepts have been revolutionised today through the study of Biotechnology. Therefore, teachers and learners are encouraged to use the Internet as much as possible and access recent information on the concepts prescribed for study in the syllabus in Botany & Zoology (Biology).

Teaching-Learning Strategies

The following are the major strategies that may be pursued by the teachers and students of biology.

1. Browsing through the Internet to access recent data in the prescribed topics for study
2. Using books published recently for physiology, cytogenetics and genetic engineering related topics.
3. Going on eco-walks to study morphology and ecology.
4. Doing practical work in the lab and observe, record and analyse data.
5. Undertake investigating projects in biology and undertake scientific study of plants.

HISOTRY, CIVICS, GEOGRAPHY AND ECONOMICS

Besides the languages, History, Civics, Geography and Economics constitute the major study under humanities.

The History curriculum aims at developing an understanding of human heritage, our national, provincial and local heritages among students. Making them realise the importance of values of human and national civilisations, culture, various performing and fine arts, religions and ethics is another objective. Fortifying the knowledge of the

students about milestones in history, both national and continental, with a view to inculcate values like patriotism, harmonious peaceful living, democratic outlook is the third objective.

Very recently some lacunae in the previous syllabus document have been brought to the notice of the Committee by Islamic scholars and experts regarding origin of Islam as a religious faith and the life and teachings of Prophet Mohamed Nabi. Care has been taken this time to avoid such pitfalls, especially in an area dealing with religious sentiments.

At the public hearings organised on the draft curriculum, it has been widely felt that history and civics textbooks are voluminous, even for primary and upper primary stages. This perhaps was due to the anxiety among the textbook writers and publishers to include all details – causes, chronological narration, the effects – of historical events. The other reason may be the in-depth treatment of the current developments, national and international institutions, organisations and procedures. Therefore, the curriculum framers would request the textbook writers and publishers to be brief and to the point – of course, without omitting any significant facts and principles – leaving the narratives, descriptives and in-depth analysis part to the teachers who would indulge in such luxuries depending on the time and facilities available to them during classroom sessions.

As for Geography, the syllabi had been kept crisp and concise. This is especially so in Stds IX & X to make room for introduction of elements of Economics.

Elements of Economics is introduced in Stds IX & X as a subject on popular demand as well as to be on par with syllabi of other Boards of Education. Twenty five to thirty marks in the annual examination question paper for Geography are to be allotted for Economics in these Standards.

The objective of introducing Economics is to provide the Matriculates an idea of Economics terminology like, wealth, welfare, goods and services, consumption, supply and demand and understanding of basic economic theories and concepts like price and cost theory, national income, GDP & GNP, trade, globalisation and liberalisation.

ENVIRONMENT STUDIES FOR STDS I - V

In the Primary Education stage, children should be initiated into teaching-learning activities in a joyful manner adopting play-based approaches. It is not uncommon to see children enjoying by clicking the mouse in the computer loaded with a "games software". They learn very fast.

Primary Education stage may be divided into an Early Stage comprising of Classes I & II and a Later Stage of Classes III to V. An integrated curriculum is followed in Classes I & II. It is designed as Environmental Studies. For Classes III to V, the curriculum has two segments under EVS, namely, EVS-Science and EVS-Social Studies.

The following areas were considered while preparing the curriculum materials. The same should be followed while planning for Teaching-Learning Activities at the schools.

a. Eco-based values
- Nurturing the Environment (Biotic & Abiotic)
- Minimising Pollution (air, water, land, noice)
- Protecting the monuments

b. Health-related values
- Safe water
- Safe food
- Safe blood (for blood transfusion)
- Safe medicines (no spurious drugs)

- Regular aerobics
- Observing health rules in the family and at the school hostels
- Observing rules of the road
- Health hazards due to smoking, drinking, drug abuse, tobacco chewing, etc.

c. Humane Values

- Caring for the sick and suffering, disabled and the elderly
- Sharing what you have with the needy
- Loving fellow humans irrespective of caste, creed and social status

INFORMATION COMMUNICATION TECHNOLOGY

Objectives

Today's literacy is incomplete without knowledge of computers. Knowledge in computers has a multiplier effect and has immense potential in various fields.

This syllabus recommendation sets out the following 3 dimensional objectives for students who complete X STD in Tamil Nadu Matriculation scheme. They

1. should be able to operate computer and its related tools for day-to-day needs such as creating information data, documents, and use computer for communicating and to use Internet effectively.

2. should develop capability to pursue higher courses of study leading to careers in software development, testing etc.,

3. should master skills in multimedia and creative tools leading to immediate self-employment/employment

This syllabus outline follows guidelines issued by the NCERT. No formal curriculum is prescribed for Std I & II, in order to keep the curricular load of

these classes less.

It is assumed that Computer science will be an additional mandatory subject. Assuming that the academic calendar has 30 weeks, the ICT syllabus is designed in such a way that it could be completed with 2 periods a week.

There will be an evaluation (examination) at the end of Std X
The examination will be for a maximum of 100 marks - 50 marks for theory and 50 marks for practicals

PHYSICAL EDUCATION

The programmes and activities given in this Physical Education and Health Education Syllabus covers a very wide range in that each and every pupil can participate according to his/her interest and needs. It is also borne in mind while framing the syllabus that activities which do not involve much cost are included as far as possible because most of the schools can not afford high cost apparatus. However the schools can have multi gym and gymnastics equipments for the benefit of their students.

1. Compulsory Mass drill activity to be given for classes from VI to X weekly once.
2. Since new games have been introduced at Competitive level, it would be ideal to introduce Boxing, Fencing, Squash & Base ball from std VI
3. The syllabus is framed in such a manner that the teacher has the option of choosing activity as per play areas.
4. This syllabus can be effectively introduced in all the schools, if two periods are allotted for Physical Education in a week.
5. This syllabus lays emphasis on indoor games like Chess & Carrom for the benefit of schools with no play areas.

6. The present syllabus has some practical difficulties in implementing in all schools. So some changes have been brought in this syllabus, so that implementation of the syllabus will take place in all the schools.
7. An internal assessment committee may be formed with the help of subjects teachers to evaluate the students performance.
8. Like other core subjects a paper in physical and health education may be introduced in the examinations at the level of each std. On the basis of 70 Marks for Practical and 30 Marks for Theory.

Practical Exam	-	70 Marks
1. Individual skills – any 3 events		30 Marks
2. Major games – any 2 games		20 Marks
3. Marching		10 Marks
4. Asanas / Gym		10 Marks

SYLLABUS FOR TAMIL AND OTHER LANGUAGES

The Tamil Nadu State Board of Secondary Education syllabus for languages Tamil, Telugu, Kannada, Malayalam and Urudhu will be adopted. And for languages Hindi, Sanskrit , Arabic and French the present Matriculation syllabus and textbooks will be continued.