

**GOVERNMENT OF KERALA
DEPARTMENT OF TECHNICAL EDUCATION
CURRICULUM DEVELOPMENT CENTRE
KALAMASSERY**

**DIPLOMA COURSE
Under MPEC SYSTEM**

**REVISED CURRICULUM
2004**

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**PREPARED AT
TITI EXTENSION CENTRE, GOVERNMENT OF INDIA,
KALAMESSERY**

**STATE BOARD OF TECHNICAL EDUCATION, KERALA STATE
RULES AND REGULATIONS OF THE DIPLOMA COURSES
UNDER MPEC SYSTEM**

(G.O.(Rt) No: 513/2004/HEdn: Dated 03/4/04)

RATIONALE

One of the major complexities faced by the Polytechnic system is the variety of target groups viz. 10+, 10+ Technical, 10+ Technical Certificate, 10+2 Arts/ Science/ Commerce Stream, 10+2 Technical/ Vocational Stream, all of which, in different Proportions join a straight jacket three year programme. This rigid structure has been causing frustrations to some groups and difficulties and problems to others thereby causing inefficiency in the system. The expectation from polytechnic pass-outs is acquisition of varying mix of knowledge and skills to match diverse occupations for which they are to be trained. The 10+2 students who enter the system were not given any exemptions from taking some of the courses equivalent of which they had already studied in their respective +2 stage curriculum. This group of students, therefore, more or less had to repeat the acquisition of knowledge and skills they already possesses. In spite of the varying mix of knowledge and skills possessed by 10+, 10+ Technical, 10+ Technical Certificate, 10+2 Arts/ Science/ Commerce Stream, 10+2 Technical or Vocational Stream etc. the rigid System treated all the different groups alike irrespective of difference in their entry level knowledge and skills. This alone was sufficient reason for the introduction of a flexible pattern providing for choice and sequencing of courses to match the varying mix of knowledge and skills possessed by diverse target groups. Important problem faced by Polytechnics is the Comparatively large percentage of students failing in few courses resulting in wastage. They have no opportunity within the system for taking alternative courses appropriate to their capability. In this innovation the student can pursue the program at his own pace i.e. high achievers can go faster, while others can move at normal pace. This innovation has a very high academic value because it removes the stigma of failure.

Rapid technological advancement in the different disciplines would also necessitate the offering of a wide range of programmes of varying durations and different entry requirements for meeting the diverse man-power needs with in and across disciplines. The National Policy on Education, therefore rightly recognizes the need for a flexible structure which would allow students to enter the system at different points depending on their entry levels, and take up combination of courses according to needs there by facilitating the production of man-power for a spectrum of technologies and occupations enhancing the efficiency of the system.

The World Bank Assisted Technical Education Project which supports the National Educational Education Policy considered the above as a subcomponent. In this respect the Department of Technical Education Kerala State recommended to introduce Multipoint Entry & Credit System in the two new Polytechnics to be established under the World Bank Assisted Technician Education Project.

2 OBJECTIVES

- 2.1 Introduce multipoint entry and credit system in new Polytechnics in Diploma Programmes, for overall improvement of the system by:

- (a) Allowing appropriate levels of entry to students entering polytechnic with diverse background.
 - (b) Allowing students to pursue programme of study at their own pace and capacity.
 - (c) Removing stigma of failure of students who want to progress at slower pace.
 - (d) Providing flexibility to students in selection of certain courses as per their interests and need.
- 2.2. Establish an effective guidance and counseling system in each polytechnic to facilitate choice of courses by the students and furnish relevant information to Teachers, Technical Examinations Boards etc.
- 2.3. Provide the marginal additional resources required at the technical examinations board as well as the polytechnics to enable effective operations of programmes based on the new system.
- 2.4. Prepare identified personnel in the technical examinations board and polytechnics for the effective and efficient operations of programmes through appropriate orientations and staff training.

3. SALIENT FEATURES

The salient features of the proposed system are described below.

3.1. Course categories:-

The term 'course' in this system would always mean a 'subject of study'. The courses included in the Diploma programme shall include theory, practical, field work, project work etc. and are categorized under the following headings.

i) **Foundation courses**

Foundation Courses are those, which are to be taken mostly by the students who have passed the 10+. The list of foundation courses is given separately.

ii) **Basic Technology Courses/Basic Courses.**

These are courses of foundation for different disciplines. In a way Basic Technology Courses/ basic Courses are bridge courses between pure Science/ Social Sciences and Commercial subjects and Applied Technology/ Management Courses.

iii) **Applied Technology Courses/ Applied Courses.**

These are the Professional level terminal courses through which the desired knowledge and skills are developed in the students to perform his/her job functions in the chosen field of Engineering/Technology/ Management.

iv) **Elective Courses**

It is envisaged that the training provided through all the Foundations, Basic Technology/ Basic and Applied Technology/ Applied Courses would provide a board base for performing the job functions in the selected disciplines. The purpose of including the elective courses is to provide an opportunity for some more detailed knowledge in specific areas in the same or related discipline or to develop awareness in other inter-disciplinary areas.

3.2. Credits:

The credit for a course will be the sum of the lecture periods in hours and half the hours of practical, drawings etc. allotted for teaching a course. For example the course with a teaching scheme of lecture 4 hours per week and practical 2 hrs per

week will have 4+1=5 credits. While this is the general rule in certain exceptional cases like Projects, higher credits could be assigned depending on the quantum of work to be undertaken by the student.

Note:- Each year would be divided in to two 'half years' (terms) the first half term the second half term corresponding to odd and even semesters respectively.

3.3. Minimum credits to be earned for award of diploma.

The allocation of minimum credit acquired under each category of Courses in Computer Engineering, Electronics and Computer Applications & Business Management as well as total credit to entitle a student for the award of diploma is as under.

Category of Courses	Computer Engineering	Electronics and Communication	Electronics and Instrumentation	Electronics & Avionics	Computer Application & Business Management
Foundation Courses	34	34	34	34	34
Basic Technology Courses/Basic Courses	43	43	43	43	43
Applied Technology Courses/Applied Courses	52	52	52	52	60
Elective Courses	16	16	16	16	08
Total	145	145	145	145	145

4. ADVANTAGES

The major advantages of the MPEC system over the present system are as follows:-

- 4.1. The students will be able to schedule their individual paths of study according to their needs, interests, aptitude and their qualifications.
- 4.2. Since the students will be involved in the decision making process in the course selection at each stage they will have greater motivation and psychological satisfactions.
- 4.3. Students can complete the programmes at their own pace. Brighter students need not wait for the under achievers to catch up. This would decrease the average time period required for the completion of the diploma and hence the overall efficiency of the system.

- 4.4. The in-built flexibility permits of easy catering to the changing and diversified manpower needs. The programmes therefore provides for the multiple options catering to a spectrum of occupation within and across the discipline.
- 4.5. The concept of pass/ fail will give place to be accumulation of credits by individual depending on their capability, thereby promoting competition and reducing frustration.
- 4.6. some of the critical courses in which student do not normally acquire credits can be offered in both semesters. Students, not making the grades in such subjects will not have to waste a semester.
- 4.7. Majority of entrants to Polytechnics mainly comprise of High School 10+2 students. Within these broad categories also there are variations. Eg. 10+ Certificate holders (K.G.C.), 10+2 Technical (T.H.S) 10+2 (Arts/ Science/Commerce/ Vocational) etc. This system will enable the 10+2 students to complete the diploma programmes in to two and half years enhancing the overall efficiency of the system. High School achievers will complete the programme faster. Hence the system will have potential to absorb larger student populations in required areas.
- 4.8. In such subjects, in which the students fail to earn credits, they will have options either to reroute their programmes of re-register in the same course without wasting lot of time as is prevalent in the existing system of fail or pass in a semester. Hence such students also will be allowed to complete the diploma in a shorter period of time.
- 4.9. The system allows for introduction of new courses at different levels to enable the students to take specialized and advanced courses and also to keep alert with the development in the industry and emerging technologies.
- 4.10. At present lot of time is taken for the conduct of examinations and also the declarations of the results. The time could be saved to a considerable extent through course wise announcement at the polytechnic at the same time continuing with the current procedures. The time saved could be utilized for instructions.
- 4.11. Programme could easily to tune to cater to the diversified needs of the industry.
- 4.12. The system would facilitate the provisions of horizontal mobility between programmes and introduction of the courses in high technology areas in addition to the diploma programme. At a later stage opportunities could easily be provided to personnel in the industry to update their knowledge and skills.

5. REGISTRATION

- 5.1. To register for regular studies as well as to register for appearing at end of the term examinations in certain courses, at the beginning of each term is an important activity for the student, who has to decide about the course and pace at which he will be studying at different stages. In making such decisions, the student has to take in to consideration his/ her own ability for learning, the time available, the course offered by Polytechnic during the term, pre-requisite of courses, his/ her own progress in the programme etc. The guidance and counseling unit will advice the student in decision-making.

- 5.2. Re- registration- When a student has already attended/ completed the prescribed course regarding attendance, term work etc. but has not appeared/ passed in the end of the term examination he will have to get re-registered which will mean only appearing at the term end examination.
- 5.3. The following rules pertaining to registration and re- registration are as follows:-
- 5.3.1. At the time of admission to the polytechnic and /or the beginning of each successive term, till the students become eligible for the award of a diploma, all the students shall have to contact the concerned authorities and the appropriate guidance and counseling officers for the selection of the course and for registering themselves.
- 5.3.2. The Courses of study and the scheme of examinations leading to a Diploma, the initial credits to which the entrants of different categories are entitle, the course in which the student has acquired credits during previous terms and the courses offered for study in the Polytechnic depending upon the available resources, would be the basis for the selection/ offer of courses for the new term.
- 5.3.3. The institution authorities will provide a list of courses offered in the odd and even terms of the academic year and the possible choices open to each individual student depending upon the courses in which the student and already acquired credits, through study/ exemptions, backlog, prerequisites, maximum limits of registration/ re- registration etc.
- 5.3.4. Selection of courses must be made out of those listed for the study programme and offered for the student in the odd/ even term of the year, subject to the limitations on the maximum number of courses contact hours, courses being repeated, if any, and also the courses in which the student has previously not earned credits and is required to appear in the examinations.
- 5.3.5. While filling up registration form, the entry of the courses should be made in the order of the respective categories of courses.
- 5.4.0 Maximum number of courses for which a student can register in a term
- 5.4.1 At a time a student can register for a maximum of 7 courses. However in the case of 10+ students maximum number of courses for the first term (Entry term) is restricted to six. A student, if he/she has no courses of re-registration has to register for a minimum of three courses leading to theory examination at the end of the term, except for his/her last term of the programme.
- 5.4.2. However, those high achieving students who register for the maximum courses as stipulated above, during the first term and are successful in examination in all of the registered courses in the first term at the first attempt, will be permitted to register for one more course in the subsequent terms in addition to the maximum permitted above.
- 5.4.3 In case of such students who are successful in acquiring credits only in respect of some of the courses for which they have registered during a term, the following rule shall apply in respect of maximum courses for which they can register in the subsequent terms.

- 5.4.4. A student who has failed in the theory or practical examinations need not repeat the course; he/ she need only appear (re-register) for the theory or practical examinations in which he/ she has failed. The total number of theory papers (including re-registered courses) in which the student can appear at a time in any end-of-term exam in any term shall not be more than 10.

Example:- If a student has registered for six courses having theory exam and has kept the terms in all six courses, but has earned credits in only one of the courses and decides to appear in the end-of-the-term theory Exam in the subsequent term, for the remaining five courses then in this term he/ she can register only for 5 new courses having end-of-the-term theory examination (ie $10-5=5$).

- 5.4.5. The minimum number of courses for registration in for a student is 3 in a term except for his/her last term of the programme, but from the time a student registers for his/her first course of a particular programme till he/she complete his/her last course of that programme shall be restricted to a maximum of seven (7) years.
- 5.5.0. Each student would choose courses in such a way that the maximum contact hours are about 30 for the 10+ students and about 36 for 10+2 students. The student is expected to work for an additional six hours in library, home assignments, projects, visits, etc. Marginal relaxation in this maximum limit would be made in the case of high achieving students who are able to earn credits as a faster rate during the first two terms. These students would be permitted to register for extra courses in addition to the norma prescribed minimum.

5.6. Courses of study and scheme of examination

The details of courses of studies for Diploma programmes under the MPEC system, the pre-requisites for each course, examination scheme offered are shown in the Appendix-I. The scheme also indicates the number of credits to be acquired by a student in each course. Sample paths (choice for the course) which could be followed by 10+ and 12+, who can complete the programme in a total of six and five terms respectively are indicated in Appendix-II. The sample paths also indicate the minimum total credits to be earned by each category of students for the award of Diploma in the respective programme.

5.7. Eligibility for admission.

Rules regarding admission to the Polytechnics in Kerala will be applicable for admission under MPEC system. Norms for admission the case of Diploma Programme in Computer application & Business Management will be same as that of Diploma in Commercial Practice. However selection to these Polytechnics will be made separately.

Students admitted to various diploma Programmes may be granted credits as may be decided and notified by the Board of Examination from time to time on the basis of additional qualifications acquired by them, on recommendation by the principal concerned.

1. T.H.S.L.C. Pass.
2. Pass in the relevant subjects in Pre-Degree.
3. Pass in the relevant subjects in V.H.S.E.

4. Pass in the relevant subjects of K.G.C.E
5. Pass in the relevant subjects of Certificate Course in I.T.I.
6. Pass in the relevant subjects/ courses of any other programme considered as equivalent.

6. EXAMINATION.

The declaration of result is critical to the choice of courses by students for registration in the subsequent term. Hence although the current procedures in regard to the declaration of results by the Board will continue, the Controller of Examination or his nominee would announce subject-wise results on the basis of the statement marks of the students for each course. This will reduce the time gap between the completion and starting of new semester. The compiled results in respect of each student would, however, continue to be provided by the Technical Examination Board.

6.1 No candidate shall be admitted to any course examination unless the Head of institution certify that the candidate has:-

1. Attended 80 percent of the prescribed lecture hours, tutorial hours, practical hours or any other kind of work and/ or assignment for the course as the case may be, in conformity with the provisions laid down in the course structure and/or syllabus corresponding to the examination in question.

2. Carried out satisfactorily all of the prescribed laboratory practicals/ workshop practicals or any other kind of practical including the drawing, field work and prepared term work as the case may be, in conformity with the provisions laid down in the course structure and/ or syllabus corresponding to the examination in question.

3. Shown satisfactory progress in progressive studies and

4. Shown good conduct and character.

Notwithstanding the above, if the attendance of a candidate in (1) above falls to 65 percent instead of 80 percent on account of protracted illness, the Head of institution may condone such a deficiency and permit the candidate to appear for the examination, if otherwise eligible, provided that the candidate has submitted a medical certificate. The Head of the institution may also condone the deficiency as stated above on account of any abnormal and exceptional reason reported immediately, provided he is fully satisfied about the genuineness of the reason.

6.2. A candidate who is disallowed from appearing for an exam of a course for not fulfilling the conditions of rule 6.1 shall have to register for the same course and have to fulfill the conditions of rules 6.1 afresh before being permitted to appear for the exam.

6.3. A candidate shall not be allowed to re-register for a course and re-appear at the examination, which he has passed.

6.4. No candidate who has been debarred for any examination/s by the technical examination board or any other statutory examination agency for a specified period

shall be admitted to any of the examination(s) and course of study before the end of that period of punishment.

6.5. A candidate has to pay the exam fee prescribed by the technical examination board from time to time of registration/ re-registration by filling the prescribed form. A candidate has to register/ re-register himself for the courses on or before the last date prescribed.

6.5.1. Fees for MPEC System Students:-*

Fee for particular term will be calculated on the basis of the credits taken by the student. The tuition fee will be Rs.6/- per credit for all the compulsory courses registered by the student. The examination fee will be Rs. 2/- per credit. The Special fees and other fees will be as per existing rates as

* Since been changed

applicable to other Diploma courses. For additional courses taken in the same programme, which are not compulsory, the tuition fee will be Rs.12/- per credit. For other courses taken in other programs, the tuition fee will be Rs.18/- per credit.

6.6. If a candidate having kept in the term satisfactory does not appear for the examination of the Board at the end of the term, he shall be eligible to appear at the subsequent examination as an Ex-candidate subject to the requirement under rule 6.5. In such case, the practical jobs and term works put in shall be got assessed and the marks carried forward at the subsequent examinations.

6.7. To pass an exam of a course candidate must obtain 40 percent of the full marks in theory/ practical/ oral examinations separately and 40 percent aggregate including the internal assessment. If a candidate fails either in theory or practical he will not earn any credit of that course. However, the marks obtained in the passed paper will be carried forward and when he passes the paper in which he has failed, he will earn full credit on that course.

6.8. To be eligible for the award of diploma in any particular program a candidate should acquire the requisite number of credits through successful completion of the courses of study, including credits earned by exemption.

6.9. A candidate shall be declared to be eligible for the award of Diploma in First class with distinction, first class or second class- depending upon the percentage of the combined aggregate marks obtained by the candidate in Applied Technology courses/ Applied and Elective category of courses of study excluding exempted courses (except MPEC System Courses) if any. The percentage determining the class will be as under:-

1. 75% or more of the combined aggregate marks - First class with distinction
2. 60% or more but less than 75% of the combined aggregate marks - First Class
3. 40% or more but less than 60% - Second Class

For the purpose of Rule 6.9 fraction of mark if any shall be ignored.

7. RESULTS

- 7.1. After the conclusion of examinations the results of the examinations may be placed before the examination committee of the board. The committee at its discretion can moderate the results of any course by assigning grace marks.
- 7.2. The candidate whose result is cancelled and who is further excluded from registration and re-registration and appearing for the examination for a specific period, will be eligible to register, re-register and re-appear as an ex-student after the expiry of the specific period till which he is debarred. However, his marks for term work and oral/ practical shall be carried forward. Also the exemption and credits already earned by him shall stand protected.
- 7.3. The controller of Examinations after declaration of the results may entertain applications from candidates for the verification of marks and revaluations on payment of prescribed fee provided the application is made within 15 days, from the date of declaration of the result.
- 7.4. A candidate appearing for an examination of the Board shall after the declaration of the results, obtain a certified statement of marks secured by him in each paper (theory and Practical). However, if original mark sheet is lost a duplicate copy of the mark sheet can be obtained by the candidate on payment of prescribed fee, along with an application for issue of a duplicate mark sheet.
- 7.5. A candidate who has successfully completed a minimum number of courses and acquired a minimum of credits under each category of courses (i.e. Foundation courses, Basic Technology / Basic courses, Applied Technology / Applied courses and Elective courses) after passing the examination of each course as per examinations scheme as specified in each Diploma program will be awarded a Diploma by the board.
- 7.6. If after the award of the diploma by the board it is found that the candidate has not fulfilled the condition and violated the rules stipulated above, the Board will withdraw the Diploma awarded to him.