STATE BOARD OF TECHNICAL EDUCATION, KERALA
Directorate of Technical Education,
Thiruvananthapuram, Kerala

Rules and Regulations for KGCE Programs approved by the State Board of Technical Education, Kerala

REVISION 2022

Prepared by

STATE INSTITUTE OF TECHNICAL TEACHERS TRAINING & RESEARCH, KERALA

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Preface

Curriculum serves as the foundation on which educational edifice is built upon. Curriculum needs constant updation after ongoing scrutiny, to stay relevant and on par with the developments in the concerned field of Technical knowledge.

SBTE, Kerala is the affiliating body of KGCE programs of various Institutes in Kerala, Periodical revision of various KGCE programs is undertaken by State Institute of Technical teachers Training and Research (SITTTR) which is the academic body of the Directorate of Technical Education, Kerala.

This Revision Curriculum 2022 document pertains to KGCE for Engineering Programs in different specializations. The Revision 22, Curriculum shall be followed for the conduct of various KGCE programs in Institutes, whose programs are approved by DTE, Kerala for the 1st year of the academic year 2022 onwards.

The task of the curriculum revision is time consuming and needs to be undertaken with extreme diligence. For facilitating the process, the following committees were constituted under the overall guidance of the Director of Technical education:

1. Curriculum Revision Monitoring Committee
2. Curriculum Revision Implementation Committee
3. Curriculum Revision Academic Committee
4. Curriculum Revision Core Committee

Further, inputs from Industry were gathered from various experts in the respective fields.
The curriculum is designed to have a total hours of 1440 hours per year, including courses in basic mathematics and science, Engineering Drawing, Employability skills, On the Job Training, Trade Theory and Practicals with focus on fundamentals and discipline level courses. The Curriculum revision is envisaged to be, contemporary, socially relevant and Industry ready.

Definitions

1.1 Academic Calendar

Academic calendar means the calendar of academic activities undertaken during an academic year as prescribed by the Directorate of Technical Education, Kerala.

1.2 Academic year

Academic year in relation to the KGCE program means 12 months which includes instructional periods, holidays and examinations

1.3 Contact hours/Instructional hours

60 minutes of theory/practical/project work sessions constitute a contact/ instructional hour.

1.4 Course

Course means the study of an individual subject in a particular year which shall include theory, practical, project work etc.

1.5 KGCE Certificate

KGCE certificate is an academic credential issued by the SBTE to a candidate on successful completion of the program as envisaged in the curriculum.

1.6 National Skills Qualification Framework (NSQF)

NSQF means National Skills Qualification Framework as notified vide Gazette of India No. 8/6/2013 dated 19.12.2013. NSQF is a nationally integrated education and competency-based framework that enables persons to acquire desired competency levels.

1.7 **OJT** (On the Job Training)

Instruction and hands on practice to acquire completeness and skills needed for a job in a real/close to real/simulated environment.

1.8 Outcome

Outcomes are broad statements that represent the level of knowledge, skill and attitude to be achieved by students on the basis of predefined levels of Bloom's taxonomy.

1.9 Programme

Programme means the entire course of study and assessment /examinations prescribed for the same, leading to the award of KGCE certificate.

1.10 Qualification Pack

A Qualification Pack (QP) defines the set of National Occupational Standards (NOS) which are aligned to the particular Job Role.

1.11 Skill Knowledge provider (SKP)

Is the competency based knowledge provider by AICTE or other authorized bodies, who impart the skill based vocational content in the programme.

1.12 State Board of Technical Education (SBTE)

SBTE means the body which functions under the Higher Education Department, Government of Kerala, which regulates the matters of Diploma level and other certificate courses under Department of Technical Education in the state of Kerala.

1.13 Student

Student means a candidate admitted to and registered for a program in accordance with the rules and regulations of the program.

1. Introduction

The Kerala Government Certificate Examination programs courses are two year programs conducted at Institutions whose KGCE programs are approved by DTE Kerala and affiliated to SBTE Kerala. The Revision 22 curriculum is prepared by maintaining the durations of the programs. But, in order to enhance the employability of the candidates, a shift in emphasis from theoretical aspects to practical work skill training and actual field applications are made. In accordance with the revised scheme, there will be KGCE programs in eight different disciplines:

i. Agro machinery
ii. Automobile Engineering
iii. Civil Engineering
iv. Computer Engineering
v. Electrical Engineering
vi. Electronics & Communication Engineering
vii. Mechanical Engineering
viii. Refrigeration & Air conditioning

Considering the changes in Technology, KGCE in Electronics and Communication Engineering and Radio & Television Engineering are combined, revamped and revised as Electronics Engineering. KGCE in Computer Engineering is introduced, considering the wide applications of the field, from Revision 22 scheme onwards. Each branch of study may include Theory, Engineering Drawing, Practical courses, OJT and skill training courses. This Curriculum Revision 22 framework which includes Rules & Regulations, Program scheme, Syllabus, NSQF Qualification pack scheme shall be implemented for the eight KGCE programs listed above conducted in Full time /Part time mode from the academic year 2022 onwards. The Institutions shall fulfill all facilities such as Infrastructure, Faculty and other requirements to offer the programs as per norms specified in Revision 22 for the Total Approved Intake including Part time.

2. Admission and Intake

Candidates who have passed the qualifying examination – SSLC or equivalent examination recognized by the Board of Public examinations, Kerala with eligibility for higher studies can apply.

Intake, list of approved institutions to which admission will take place in a particular year etc. shall be as per the approved Admission Prospectus of the particular year.

Admissions to first year shall commence as per notification of DTE based on approved prospectus of the particular year, after the SSLC/THSLC results for the year are published by the Board of Public examinations, Kerala.

Each institution, shall get approved, the list of admitted candidates with details of names, DOB etc shall be got approved by DD (Gen) for Southern region, and respective Regional Joint Directors for the Northern and Central region within 15 days after close of admission. Only candidates approved by the respective DTE/RJD's and have obtained Permanent Register Numbers shall be permitted to appear in the KGCE examination.

The SBTE shall revoke the admission of the candidate, if at any time after admission, it is found that a candidate has not fulfilled any of the requirements stipulated by the State Board.

No student shall be permitted, to change the Programme to which he/she is admitted after the admission process is completed by the competent authority.

3. Medium of Instruction and Examination

The medium of Instruction and examination shall be English. However, the candidates can answer the examinations in English or Malayalam.

4. Duration of the program

The duration of the program shall be 2 academic years. All the Institutions who have received sanction of Directorate of Technical Education for conducting the KGCE program

shall work 6 hours per day for 6 days a week, from Monday to Saturday, except on Public holidays. The teaching hours per year shall be a minimum of 1440 hours per year and 4 weeks of Internship each after first year and after second year. Normally, the Academic year shall span from 1st July to 30th April.

5. Structure of the program

The program shall consist of Theory, Practical, Project work and OJT. Every KGCE program shall have a curriculum, Program scheme, syllabus and NSQF qualification scheme approved by the State Board of Technical Education.

All the courses shall have assessment. Assessment shall include Continuous Internal Assessment (CIA), End of the year Examination (ESE) and assessment of the OJT. The OJT shall be assessed as and when it is completed by approved assessors, arranged by the SKPs. It is mandatory for students to earn a 'pass' in each and every course specified in the Curriculum for the award of KGCE Certificate.

6. Program registration

Every student admitted to a KGCE program shall seek registration from the SBTE as per notification of the CTE. A unique Permanent Register Number shall be issued by the Controller of Technical Examinations to each student. This unique number shall be used for all references such as further year wise registration, examination registration and other academic activities.

The program registration shall be valid for 4 (four) academic years for Full time and Part time students

7. Year wise registration

Every student promoted to the second year has to complete the second year registration at the beginning of the second year itself. For first year students the default year wise registration shall be made along with program registration.

8. Eligibility for appearing for End of the year examination

The End of the Year Examinations shall be conducted as per the notification of the Controller of Technical Examinations based on the Curriculum.

To be eligible to register for the examination, the candidates shall satisfy the following requirements:

i. The candidate should have completed the 1st year/2nd year Registration as the case maybe.

ii. The candidate should have met the attendance requirements as contained in Clause 12.

iii. The candidate should have completed the academic requirements as contained in Clause 12.

iv. Eligible candidates shall register for the examination remitting the required fee as notified by the Controller of Technical Examinations.

v. Students who do not satisfy the eligibility requirements as in clause 8i. ii &iii shall have to register for the same first year or second year as the case maybe and when it is offered in the institution afresh and shall have to fulfill such conditions prescribed by the State Board of Technical Education.

vi. A student shall not be allowed to re-register for a course or reappear for an examination for which he/she has earned a 'Pass'.

9. Minimum requirements for earning 'Pass' in courses

A candidate must secure a minimum of 40% marks in the end of the year examinations in each Theory paper, Drawing and Practical for a pass in these courses. There shall be no separate minimum in the continuous internal assessment for a 'pass' in that particular course. But the total mark of the End of the year examination and the continuous internal assessment mark put together shall not be less than 40% of the total of the maximum for continuous internal assessment & End of the year examination together for each course.

10. Promotion to second year

A student is promoted to the Second year only if he/she had the eligibility for appearing for the first year examination satisfying clause 8.

11. Roll out and Readmission

A student with 15 working days of continuous absence shall be removed from roll. He/she shall be readmitted only if he/she has claimed for readmission within 15days from the date of roll out. Readmission can be sought only to the year in which he/she was studying at the time of being rolled out. Attendance for eligibility for appearing for the End of the Year examination in such cases shall be counted from the commencement of the particular academic year. The Rolled out days shall be treated as Absent for calculating the attendance requirements.

12. Repeating a year

A student with less than 75% of attendance and has not condoned the shortage of attendance or has attendance less than 65% or he/she has not completed all the prescribed laboratory, practical, workshop practical or any other kind of practical course including drawing, project work etc. as prescribed in the curriculum and got certified by the Principal/faculty in charge of the concerned programme shall have to repeat the year. He/she can repeat the year only with the succeeding batch as and when it is offered in the institution. This shall be at the discretion of the Principal, who should be satisfied on the genuineness of absence and approval of DTE. In case there is a scheme change at the time of readmission, the candidate shall seek the permission of DTE, for scheme change through the principal of the institute. If approved, the validity of registration for the scheme changed candidates, shall be as in the scheme to which the candidate was first admitted and shall be counted from the date of admission to the program.

A candidate who has 65% or above attendance but failed to attain 75% attendance, is permitted to condon the shortage of attendance under genuine medical reasons, supported with Medical certificate of a registered medical practitioner and remitting the required fee to the Government. The Principal of the institution shall condon the shortage in such cases, if satisfied of the genuity of the case.

13. Assessment

- **General**

a. Candidates shall be assessed each year, by continuous Internal assessment, End of the Year examination for all courses and the OJT shall be assessed by skill assessors arranged by SKP.

b. The end of the year examinations shall be conducted by the CTE as per curriculum for all the Courses.

c. The continuous Internal assessment shall be conducted by the respective Institute as per the curriculum.

d. The maximum marks awarded for Continuous Internal assessment and End of year examination shall be as per the curriculum.

- **Continuous Internal Assessment**

i) The faculty concerned will maintain a record of all details of continuous Internal assessment including attendance, Internal assessment marks and related documents. The marks awarded shall be entered in the appropriate log book.

ii) The continuous internal assessment marks of each year shall be published at least two weeks before the end of the academic year. The student can represent their grievances, if any, in respect of marks awarded, to the Principal. After corrections/redressing grievances if any, the final continuous internal assessment marks shall be entered in the Internal Mark Register at least one week before the end of the academic year. The final continuous internal assessment marks shall be submitted to CTE each year, as stipulated by CTE.

Continuous Internal assessment for Theory courses

- Criteria for continuous internal assessment for Theory courses shall consist of Tests, Assignments and Attendance
- Award of internal marks will be based on the marks scored in tests, assignments and the attendance of the student in the proportion 40% for tests, 40% for assignment/ project and 20 % for attendance

- There shall be a minimum of 3 testsand3 assignments per year. The average scored of 3 best test papers and the average scored of 3 best assignments, shall be taken into account for the calculation of the internal marks.

The weightage and criteria for internal assessment of Theory courses shall be as follows:

Sl.No.	Criteria Component	Weightage (%)
1	Test Papers	50
2	Assignments	30
3	Attendance(Table 1)	20

Continuous Internal assessment for Practical courses

- Criteria for Continuous Internal assessment of Practical courses shall consist of Observation note/Rough record, Fair record, test and attendance.

- The students shall keep a record of all the laboratory exercises performed by them in the form of a laboratory record. This record shall be authenticated by the faculty in charge and certified by the Principal. No student will be permitted to take any practical examination without a bonafide record.

The weightage and criteria for internal assessment for Practical courses shall be as follows:

Sl.No	Criteria Component	Weightage(%)
1	Observation Note/Rough Record	20
2	Fair Record (Timely Submission, Accuracy and Neatness)	20
3	Test	40
4	Attendance (Table 1)	20

Continuous Internal assessment for Drawing courses:

The weightage and criteria for internal assessment of Drawing courses shall be as follows:

Sl.No	Criteria Component	Weightage(%)
1	Submission of Completed Drawing Sheets (Timely Submission, Accuracy and Neatness)	40
2	Test	40
3	Attendance(Table 1)	20

I Continuous Internal assessment for project work

Sl.No	Criteria Component	Weightage (%)
1	Relevance of Topic	10
2	Knowledge of Tools	20
3	Selection of Tools	20
4	Fabrication of final product	20
5	Role of the individual in the team	20
6	Project Report	10

Attendance split up for all courses including Theory, Practical, Drawing, Project work etc. shall be as follows:

Table 1.

Sl No.	Criteria Component	Weightage(%)
1	Below 65%	0
2	65% to 85%	40
3	86% to 95%	80
4	Above 95%	100

- **End of Year examination**

Theory & Drawing courses

The theory and drawing courses shall be assessed through end of year examinations, conducted by the CTE, Kerala. The duration of the examination shall be 3hours. Question papers shall:

I. Be prepared based on all modules of the syllabus to assess whether the student has achieved the desired outcomes.
II. Have sufficient data and related information on problems given.
III. Cover all sections of the syllabus as contained in the model question papers.

Question Paper Pattern for Trade Theory

The general pattern of question papers for Basic Mathematics & Science, Engineering Drawing, Trade theory Employability skills and Entrepreneurship shall be as follows:

PARTA: Multiple choice Questions

20x1Marks= 20Marks

All Questions are Compulsory. There should be at least 3questions from each module.

PARTB: Descriptive/Problem Solving Questions 8x5Marks=40Marks

Candidates will have to answer Eight questions out of Twelve. There should be at least two questions from each module.

Model question paper shall be prepared for each course at the time of framing the syllabus. The model question paper along with the syllabus must be sent to the question paper setter for framing questions.

Assessment of Practical courses:

i. The duration of the examination shall be 3 hours.

ii. An Internal examiner and external examiner shall conduct the end of year examination of the Practical courses. The examiners shall be appointed by the CTE at Centers as notified. Possession of bonafide record of the work done, duly certified by the faculty and Principal concerned is a prerequisite to appear for the end of year examination of Practical courses.

iii. Award of marks for the Practical courses (except Project work), shall be based on the criteria below:

Sl No	Criteria Component	Weightage (%)
1	Fair Record	10
2	Viva Voce	20

3	Procedure & Tabulation	30
4	Conduct of Experiment	20
5	Result & Inference	20

Award of marks for Project work shall be based on criteria as below:

Sl No.	Criteria evaluated	Weightage (%)
1	Development of prototype/Model	20
2	Usage of Modern Tool/Technology	10
3	Presentation (Presentation slides, delivery)	15
4	Innovativeness	5
5	Viva	15
6	Individual contribution	15
7	Group activity	10
8	Project report	10

14. OJT

The following shall be ensured for OJT:

1. The duration of OJT shall be four weeks each at the end of first year and at the end of second year.

2. Each student shall complete the OJT at an industry appropriate to his/her program

3. Each student shall start his/her OJT only after prior approval of respective principal

4. The principal shall maintain following documents for the successful completion of OJT for scrutiny by DTE and shall be submitted as stipulated by CTE.

i) Comprehensive report on internship

ii) OJT certificate from the industry concerned.

iii)OJT assessment details of approved Assessor arranged by SKP/Institute

iii) Level Certificate issued by Awarding Body or OJT completion issued by industry concerned.

15. Minimum requirements for award of KGCE Certificate by SBTE

a. A student shall acquire a minimum of 40% marks and earn a 'Pass' **in all Courses** prescribed in the Curriculum.

b. A student shall have completed the OJT prescribed in the Curriculum.

16. NSQF certification

1. Interested Institutes can arrange for students to register for the appropriate NSQF qualification pack/packs as per NSQF Qualification pack/packs, requirements by remitting the required related fees.
2. Institutes, after registration for NSQF certification and successful completion of OJT of and associated KGCE examinations, shall arrange for appearance for the NSQF assessment as per schedule of the Assessing / Awarding body. All candidates are bound by the norms of the NSQF Assessing / Awarding body.
3. Candidates who have passed the educational component of the corresponding semester and have successfully completed the required level assessments shall be eligible for the level certificates 3 or 4 as applicable.
4. The respective Institutes shall arrange to register their candidates for NSQF assessment in the appropriate web portal
5. The Principal shall maintain OJT assessment details of approved Assessor arranged by SKP and Level Certificate details for further Scrutiny by DTE and submission as stipulated by SBTE.
6. Such interested Institutes shall inform the DTE of changes in validity of any NSQF qualification pack and the DTE shall identify appropriate NSQF QP based on prevailing availability and norms

17. Grading system

i. A candidate who passes all the courses within two years of programme registration and completes the OJT after first and second year as prescribed in the curriculum and gets an aggregate of 75% marks or above will be declared to have passed the

examination in First Class with Distinction.

ii. A candidate who passes all the courses within two years of programme registration and completes the OJT after first and second year as prescribed in the curriculum and gets an aggregate of 60% marks or above will be declared to have passed the examination in First class.

iii. A candidate who passes all the courses within two years of programme registration and completes the OJT after first and second year as prescribed in the curriculum and gets an aggregate of 50% marks or above but below 60% marks will be declared to have passed the examination in second class.

i.iv. All other successful candidates will be declared to have passed the examination in Third class.

v. Candidate who fail in course / courses will have to reappear for the failed subjects in the subsequent sittings within their registration period.

vi. Only one examination will be conducted during each year.

18. Academic Monitoring and Maintaining Academic quality

The Regional Joint Directors/ Joint Director SITTTR/ Officers from the Controller's Office/Officers from DTE/deputed by DTE, shall conduct academic inspection as per requirement. The Institutes shall follow Academic calendar, published by SITTTR. The Institutes whose KGCE programs are approved by SBTE shall take steps to maintain academic quality and the following shall be ensured by the Principal of the Institute and verified during Academic Inspection.

a. There shall be a 'Faculty in charge' for each batch. The Principal shall assign a faculty as the 'Faculty in charge' of a particular batch.

b. The 'Faculty in charge' shall maintain 'Course files' for all Courses with following:

i. Lesson plans, graded exercises, question papers and Assignment questions used for Internal assessment and other teacher support materials which should be prepared well in advance.

ii. Year end feedback collected from students, at the end of each academic year, for each course.

iii. Program feedback collected from students at the end of the program.

c. Practical work shall be done by the pupils only under the immediate supervision of the concerned teacher. Students shall maintain neat record books for all practicals. They shall be regularly valued by the concerned staff and related assessment registers and Log kept systematically.

d. The institutes shall conduct periodical test and maintain progress cards and mark registers. At the end of the first year, the institute shall conduct Model examination in the lines of the end of the year KGCE Examinations.

a. Every student should attend his classes punctually. He/She should not leave the Institution during the working hours, without permission from the concerned teacher.

b. Every student should be dressed neatly. Appropriate clothes to ensure safety are compulsory in all practical classes.

c. Any student who is willfully insubordinate, mischievous or guilty of malpractice in examinations or guilty of any grave offence may be, according to the degree of the offence, be censured, suspended, or dismissed from the Institute by the Principal. Any such punishment inflicted shall be duly recorded in the Punishment Register and the fact intimated to the Joint Director.

d. Any student who is found to have secured admission by presenting false certificate shall be summarily dismissed from the institute, his fees fully forfeited, and the matter reported to the police authorities.

19. Administrative Control of Institutes

All the Institutes in the State whose KGCE programs are approved for the year shall be under the overall control of the SJD(PS). But the Institutes in the Northern and Central regions will be controlled by respective Joint Directors. The Institutes in Southern regions will be controlled by Deputy Director (General).

20. Staff requirements

For handling the first and second year classes of one batch of students each in a program, the minimum requirements of staff is fixed as follows:

i. Principal - 1 No, with Qualification as three year Diploma or higher in any branch of engineering.

			The Principal shall have experience of teaching (at the level of ITI/KGCE or higher) / administrative experience of at least 5 years.
ii.	Instructor	–	2 nos, with Qualification as three year Diploma or higher in the concerned branch of engineering.
iii.	Supporting staff	-	1 no with Qualification ITI/KGCE or higher in the related program.

Age limit : The maximum age limit of teaching staff, including Principal shall be 65.

Number of Instructors and Supporting staff shall be proportional to the total approved intake for Full Time and Part Time modes of the program. There shall be adequate office staff and cleaning staff for ensuring the smooth implementation of the program. If qualified, the Principal can also be counted as Instructor of the particular program, provided he is handling the required workload.

21. Infrastructural requirements

a. One classroom of minimum 30 meter square for 30 students. There shall be proportionate area as per Intake for Full Time and Part Time modes of the program.

b. The Laboratories and workshop for each discipline shall have adequate space for safe arrangement of all the machinery and equipment as per Curriculum, for the effective and smooth conduct of practical classes for all the students on rolls, without any congestion. There shall be sufficient proper ventilation and lighting.

c. There shall be adequate number of toilets for Girls and Boys. There shall be separate toilets for girls and boys. They shall be maintained in a clean and hygienic manner with hygienic and safe methods of waste disposal.

d. First aid, fire and safety requirements shall be ensured in all Laboratories and Workshops.

e. There shall be Tools, Machinery and Equipment as specified in the Curriculum. The number of Tools, machinery and equipments shall be proportionate to the intake.

f. adequate Administrative staff and cleaning staff shall be ensured to ensure a smooth and effective academic environment.

22. Registers and Records

The Institutes will maintain the under mentioned Registers up-to-date and they should be readily available for reference by any Inspecting Officers of the DTE.

i. Admission Register
ii. Attendance Register(Students)
iii. Attendance Register(Staff)
iv.Fee Receipt
v. Fee Collection Register
vi. Internal Mark Register.
vii. Acquittance Register.
viii. Stock Register for furniture
ix. Stock Register for Tools &equipment
x. Examination register (Candidates present etc.)
xi. Cash Book
xii. Visitor's Book
xiii. Condonation register
ixx. Certificate Issue register

Registers shall be maintained as per formats of DTE. Any dispute arising out of the Rules and Regulations stipulated here in will be decided by the Director of Technical Education. So also any matter not specifically covered by this scheme will be decided appropriately by the Director of Technical Education.