

# **B.TECH. DEGREE COURSE**

**SCHEME AND SYLLABI  
(2002-03 ADMISSION ONWARDS)**



**MAHATMA GANDHI UNIVERSITY  
KOTTAYAM  
KERALA**

## **REGULATIONS**

*(Effective from 2002-03 admission onwards)*

### **1. Conditions for admission**

Candidates for admission to the B.Tech. Degree course shall be required to have passed the higher secondary/+2/XII Std. examination conducted by boards/departments recognized/accepted by the University, obtaining not less than 50% marks in Mathematics and not less than 50% marks in Mathematics, Physics and Chemistry put together or the diploma examination in Engineering, Kerala or any examination accepted by the Government of Kerala as equivalent there to with 50% marks in the final qualifying examination, subject to the usual concession allowed for backward and other communities as specified from time to time.

### **2. Duration of the course**

- a) The course for the B.Tech. Degree shall extend over a period of four academic years comprising of 8 semesters. The first and second semester combined and each semester from third semester onwards shall cover the groups of subjects as given in the scheme of studies and examinations.
- b) Each semester shall normally comprise of 16 weeks.
- c) The course calendar will be as follows.

<b><u>Semesters</u></b>	<b><u>Commencement</u></b>	<b><u>Closing</u></b>	<b><u>Examination</u></b>
I & II Semesters	After the admissions are over.	31 <sup>st</sup> of March	15 <sup>th</sup> April
IV, VI and VIII Semesters	December 1 <sup>st</sup>	31 <sup>st</sup> of March	15 <sup>th</sup> April
III, V and VII Semesters	First working day of June	30 <sup>th</sup> of September	15 <sup>th</sup> October

### **3. Eligibility for the Degree**

Candidates for admission to the Degree of B.Tech. shall be required to have undergone the prescribed course of study in an institution maintained or affiliated to Mahatma Gandhi University for a period of not less than four academic years and to have passed all examinations specified in the scheme. The first academic year of study shall be from the date of commencement of admission till the closure of the academic year. The remaining 6 semester will have to be completed within 3 subsequent academic years.

### **4. Subjects of Study**

The subjects of study shall be in accordance with the scheme and syllabi given in the Annexure.

### **5. Electives**

All students shall choose electives in VII and VIII semesters, from a prescribed set of elective subjects offered by the institution, as indicated in the scheme. There should be at least 20% students of the class for an elective subject to be offered. New electives may be introduced according to the needs of emerging fields in technology. The name of the elective and its syllabus should be approved by the university before the course is offered.

## 6. Sessional work

Sessional marks for Theory, Drawing, Workshops, Laboratories and Practical will be awarded by the teaching faculty based on the day to day performance of the students. The allocation of sessional marks for the individual subjects shall be on the following basis.

<u>Theory Subjects</u>		<u>Practical Subjects</u>	
Attendance	20%	Attendance	20%
Assignments	20%	Regular class work/Drawing/Workshop Record/Lab Record and Class Performance	60%
Tests	60%	Tests	20%

The sessional marks allotted for attendance shall be awarded in direct proportion to the percentage of attendance secured by the candidate in the subject. However full sessional marks for attendance shall be awarded to those who are securing 80% attendance and above.

## 7. Examination

There shall be University Examinations at the end of the first academic year and at the end of every semester from third semester onwards in subjects as prescribed in the scheme of examination.

## 8. Eligibility for appearing examination is subject to the following

- a) The student should have successfully completed the course work for the year/semester.
- b) The student should have not less than 75% attendance for the particular year in the case of I & II semesters combined or the particular semester in the case of higher semesters.

However, he is eligible for condonation of attendance (once in case of I & II semesters combined or twice in the case of higher semesters) subject to the conditions given below in the entire course.

- i) His conduct must be satisfactory.
- ii) The shortage shall not be more than 10% of actual working days.
- iii) Condonation is given only on medical grounds.
- iv) The condonation shall be granted subject to rules and procedures prescribed by the University from time to time.
- v) It is open to the Vice Chancellor to grant condonation of shortage of attendance on the recommendation of Principal.

## 9. Repetition of the course work

- a) A student who is not eligible for condonation of shortage of attendance shall repeat the course in full including the sessional work in the next immediate chance. The sessional marks earned during repetition of course alone will be counted in such case.
- b) A student can repeat the course only once in each semester/year.
- c) A student can also repeat the course work for improving sessional marks subject to the following conditions.

- i) He shall repeat the course work in full (including sessionals) in a particular semester/year once and that too at the earliest available opportunity.
  - ii) He shall not combine his course work with regular course work of any other semester.
  - iii) A candidate who has satisfactorily completed the VIII semester course will not be allowed to repeat the course work in any semester.
  - iv) He shall not be allowed to repeat the course work of any semester if he has already passed that semester examination in full.
  - v) A candidate who has been registered for the higher semester examination will not be allowed to repeat the course work, in lower semester.
  - vi) The sessional marks obtained during the repeated course only shall be considered for all purposes.
- d) For repeating the course in any of the above cases the character and conduct of the student must be satisfactory as certified by the Head of the Institution.

### 10. Conduct of Examination

To conduct all the theory examinations, a Chief Superintendent and an Assistant Chief Superintendent should be appointed by the Principal. An external Chief Superintendent should also be appointed by the University as an Observer for conducting all theory examinations in Self-financing Engineering Colleges.

The examination in theory papers will be conducted in accordance with the following schedule as far as possible.

		<b>Fore Noon</b>	<b>After Noon</b>
Tues.	day 1	1 & 2, 6	4, 8
Wed.	day 2	5	3, 7
Thurs.	day 3	1 & 2, 6	4, 8
Fri.	day 4	5	3, 7
Mon.	day 5	1 & 2, 6	4, 8
Tues.	day 6	5	3, 7
Wed.	day 7	1 & 2, 6	4, 8
Thurs.	day 8	5	3, 7
Fri.	day 9	1 & 2, 6	4, 8
Mon.	day 10	1 & 2, 6	4, 8
Tues.	day 11	5	3, 7
Wed.	day 12	1 & 2	
Thurs.	day 13	5	3, 7
Fri.	day 14	1 & 2	
Mon.	day 15	1 & 2	

(Main and supplementary examinations will alternate)

#### *Conduct of Practical Examinations*

The Principals of the concerned Engineering Colleges with the help of the Chairmen of all branches will conduct the practical examination for all semesters with the approval from the University and bonafide laboratory record, workshop record/project record, seminar report are mandatory for appearing practical/viva voce university examinations.

To conduct each practical examination, an External Examiner and an Internal Examiner should be appointed by the University. In Self-financing Engineering Colleges, no practical examination should be conducted without the presence of an External Examiner appointed by the University.

### **11. Minimum for a pass**

A candidate shall be declared to have passed in any individual subject of a semester/year examination if he secures not less than 40% marks for the subject in University examination and not less than 50% of the total marks for the subject, i.e., University examination marks and sessional marks in that subject put together. A candidate who passes in all the subjects of a semester examination shall be declared to have passed the examination in full.

### **12. Improvement of marks**

A candidate shall be allowed to re-appear for any theory examination in order to improve the marks already obtained subject to the following conditions.

- a) The candidate shall be permitted to take the improvement examination only during the chance immediately after the first appearance.
- b) The candidate shall not be allowed to appear for an improvement examination for the subject of the VIII semester.
- c) The improved marks (better of the two) obtained by the candidate for each subject he has appeared for shall be counted for all purposes.
- d) A candidate can apply for improvement in three subjects in combined SI&II provided he/she has passed all the theory subjects.
- e) A candidate can apply improvement in two subjects in combined SI&II if he/she has only one supplementary theory examination.
- f) A candidate can improve one subject in combined SI&II if he/she has only two supplementary theory examinations.
- g) Those candidates who have to write supplementary examination in three or more theory papers in combined SI&II will not be eligible for improvement of any paper.
- h) For higher semesters (SIII to SVII) (i) a candidate can apply for improvement in two subjects if he/she has passed all theory subjects (ii) a candidate can apply for improvement in one subjects if he/she has passed five theory subjects (iii) a candidate shall not be eligible for improvement of any paper if he/she has failed for two or more theory subjects.
- i) No candidate shall be permitted to improve the marks for practical examination.
- j) A candidate shall be allowed to withdraw from the whole examination of a semester in accordance with the rules for cancellation of examinations, of the University.

### **13. Promotion to Higher semesters**

A student is eligible to be promoted to the higher semesters subject to the following conditions.

- i) He should have successfully completed the lower semester.
- ii) He should have obtained 75% attendance in the lower semester or obtained condonation as per University rules.

- iii) A student shall be permitted to register for any semester examination only if he had registered for the previous semester examination.
- iv) A student can be permitted to register for the V semester University examination only if he has passed fully the combined I & II semester examination.
- v) A student can be permitted to register for the VII semester examination only if he has passed fully the III and IV semester examination.

#### **14. Completion of the course**

The degree will be awarded to the candidate only if he successfully completes the course work and has passed all the examinations within a period of 8 years from the time of admission.

#### **15. Classification of Successful candidates**

- a) A candidate who qualifies for the Degree passing all the semester examinations within five academic years (10 consecutive semesters) after commencement of his course of study and has secured not less than 75% of the aggregate of the total marks in all the 8 semesters shall be declared to have passed B.Tech. Examination in First Class with Distinction.
- b) A candidate who qualifies for the Degree passing all the semester examinations within five academic years (10 consecutive semesters) after the commencement of the course of study and has secured not less than 60% of the aggregate of the total marks in all the 8 semesters shall be declared to have passed B.Tech. Examination in First Class.
- c) All other successful candidates shall be declared to have passed B.Tech. Degree Examination in Second Class.
- d) Successful candidates who complete the examination in four academic years (8 consecutive semesters and chances) after the commencement of the course of study shall be ranked branch-wise on the basis of the aggregate of the total marks for all the eight semesters.

#### **16. Industrial visit**

It is desirable to conduct Industry/Establishment/Site visits of one day duration as suggested by the department in 3<sup>rd</sup> to 8<sup>th</sup> semesters. Such visits should be limited to 15 numbers during the course and these days will be counted for attendance.

#### **17. Co-curricular Activities and Extra Murals**

##### *a) 'Students' Counselling*

Students counselling must be undertaken either during Saturdays or after regular working hours or on other holidays depending upon the convenience of students and faculty members. A team of 3 faculty members including group tutor of the class is expected to conduct regular counselling for duration of 5 hours/week in order to help the students in their curricular and personal problems.

##### *b) Industrial/Field Training & Literature Overview*

In order to promote Industry-Institute Interaction and to impart hands-on experience in the field work/literature overview, 3 hours/week must be set apart for each class in addition to regular working hours under the supervision of the faculty members.

c) *Seminar, Symposium, Group Discussions etc.*

Orientation lectures, Seminars etc. will be presented by the faculty and experts from Industries or other Educational institutions. Also there will be Seminars, Debates and Group Discussions presented by the students to develop their communication skill. 3 hours/week from 4 P.M. to 5 P.M. is to be apart for this, which is to be, supervised by the faculty members.

d) *Project work*

For the students in final semester, in addition to 4 hours allotted to regular project work, 5 hours/week must also be added on during Saturdays or other holidays in order to improve the quality of the projects undertaken. A candidate will not be permitted to appear for the project work/viva voce examinations unless, he/she submits the project report within the prescribed date (March 15<sup>th</sup>).

### **18. Question Papers**

Question papers for Mathematics of all semesters and Engineering Graphics of I & II semesters combined shall contain two questions from each module of the relevant syllabus, one of which will have to be answered. All other theory papers will normally have the question papers in the following pattern.

Part A Short answer questions covering the whole syllabus with maximum 40% marks for this part. All questions are compulsory.

Part B Two questions from each module of the syllabus out of which one is to be answered. Maximum marks for this part is 60%.

### **19. Revision of Regulations**

The University may from time to time revise, amend or change the Regulations, scheme of studies, and examination and syllabi. The changes, unless specified otherwise, will have effect from the beginning of the academic year/semester following the Notification from the UNIVERSITY.