



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)

Accredited by NAAC with "A" Grade & NBA for ASE, CE, CSE, ECE, EEE, ME & IT (Under Tier - I)
An ISO 21001:2018, 14001:2015 and 50001:2018 Certified Institution
Approved by AICTE, New Delhi and Permanently Affiliated to JNTUK, Kakinada
L.B. Reddy Nagar, Mylavaram-521 230, NTR Dist., Andhra Pradesh
Phone: 08659-222933, Fax: 08659-222931

FRESHMAN ENGINEERING DEPARTMENT

Web.: <https://lbrce.ac.in/fed/index.php> Email: hodfed@lbrce.ac.in Ext.: 516

CIRCULAR

27th August, 2026

Sub: Meeting to conduct BoS – Mathematics

Board of studies meeting is convened for discussing about the I B. Tech. Mathematics courses **Linear Algebra and Calculus and Differential Equations and Vector Calculus** of R26 regulation.

Date : 28th August 2026

Time : 12 Noon

Platform : Microsoft Teams

Link to teams: <https://teams.live.com/join/9391556828500?p=p3fX2DNkWhMlx0GFOA>

Agenda Points:

1. Modifications of contents of syllabi
2. Relevance and Modification of Course Outcomes (COs)
3. CO-PO Articulation Matrix
4. Approved Courses and Target Values for Course Outcomes
5. Overall Remarks / Recommendations on the Proposed Syllabi

HEAD
Freshman Engineering Dept.
Lakireddy Bali Reddy College of Engg.
MYLAVARAM-521 230, Krishna Dt. A.P.


Dr. T. Satyanarayana
Head of the Department



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Minutes of Board of Studies - Mathematics

28th August, 2026

With regard to the Syllabus proposed by JNTUK, Kakinada for **R26 Regulation**, the **Board of studies meeting** was conducted online through Teams platform on **28th August, 2026 at 12 Noon** chaired by **Dr. T. Satyanarayana, Professor & HoD, FED**. The proposed syllabus of "**Linear Algebra and Calculus**" (LA&C) "**Differential Equations and Vector Calculus**" (DE&VC) of R26 regulations common for all I B. Tech was reviewed and discussed.

After thorough & detailed discussion the following were the remarks/ recommendations on the proposed Syllabi:

1. Modifications of contents of syllabi in LAC

- **Unit – 1:** Added "Elementary Transformations" before "Rank" to maintain a proper sequence and help students understand Rank concept better.
- **Unit – 1:** The "Jacobi Iteration Method" is removed from the common syllabus because the "Gauss–Seidel Iteration Method" is enough for the required syllabus. The expert suggested that the Jacobi Method can be given as a self-learning or assignment topic.
- **Unit – 1:** The "proofs of the properties of Eigen Values and Eigen Vectors" are removed because numerical problems on this topic are more important for GATE preparation.
- **Unit – 1:** The "Gauss–Jordan Method" is moved after the "Gauss Elimination Method" because students can understand it more easily after learning Gauss Elimination.
- **Unit – 2:** "Diagonalization" topic is moved after the "Cayley–Hamilton Theorem" and before Quadratic Forms to help students understand the reduction of Quadratic Forms more easily.
- **Unit – 2:** "Singular Value Decomposition" (SVD) is removed because Unit II already includes several important topics, and adding SVD would increase the workload for students. As suggested by the expert, SVD can be offered as Content Beyond the Syllabus for the branches where it is required.
- One additional reference book is added based on the BoS member's suggestion to provide students with another useful book - R. K. Jain and S. R. K. Iyengar, "Advanced Engineering Mathematics", 5th Edition, Narosa Publications, New Delhi, 2016.

Modifications of contents of syllabi in DE&VC

- **Unit – 1:** "Orthogonal Trajectories in Cartesian Coordinates" are retained because they are commonly used in engineering applications and are sufficient to understand the concept and suggested that the "Polar Coordinates" form can be omitted.

- **Unit – 2:** The definitions of “linear and non-linear equations” are added to provide the basic understanding required to study linear ODEs with constant coefficients. “Simple Harmonic Motion” (SMH) topic is removed because L-C-R circuits are sufficient to demonstrate the applications of ODEs. As suggested by the expert, SHM can be offered as Content Beyond the Syllabus for the required branches.
- **Unit – 3:** “Charpit’s Method” is removed as it is an advanced topic and is not essential for all B.Tech. branches. As suggested by the expert, it can be offered as Content Beyond the Syllabus for ME and ASE students.

2. Relevance and Modification of Course Outcomes (COs) in LAC

- **CO1:** The CO is revised to highlight the analysis of solutions of homogeneous and non-homogeneous systems of linear equations. The Knowledge Level is changed from K2, K3, K5 to K4 to reflect the higher level of analysis involved.
“Modified CO1: Analyse the solutions of homogeneous and non-homogeneous systems of linear equations. (K4)”
- **CO2:** The CO is changed to include the evaluation of Eigen Values and Eigen Vectors for reducing quadratic forms to canonical form. The Knowledge Level is raised from K2, K3, K5 to K4 to represent the evaluation involved.
“Modified CO2: Examine the eigenvalues and eigenvectors of a matrix to reduce a quadratic form to canonical form. (K4)”
- **CO3:** The CO is reframed to state the estimation of function bounds using mean value theorems. The Knowledge Level is changed from K2, K3, K5 to K3 according to the revised learning outcome.
“Modified CO3: Estimate the bounds of a given function by mean value theorems. (K3)”
- **CO4:** The CO now emphasizes the use of derivatives for optimizing functions of several variables. The Knowledge Level is changed from K2, K3, K5 to K3 to match the application of derivatives.
“Modified CO4: Apply the knowledge of derivatives in optimizing functions of several variables. (K3)”
- **CO5:** The CO is updated to include the evaluation of double and triple integrals in Cartesian and polar coordinates. The Knowledge Level is changed from K2, K3, K5 to K4 to reflect the evaluation required.
“Modified CO5: Compare different methods of evaluating double and triple integrals for finding areas and volumes. (K4)”

Relevance and Modification of Course Outcomes (COs) in DE&VC

- **CO1:** The CO is modified to focus on analysing mathematical models of simple physical problems using differential equations, corresponding to K4.
“Modified CO1: Analyse mathematical models of simple physical problems using differential equations. (K4)”
- **CO2:** The CO is revised to emphasize differentiating solution methods for linear differential equations and their applications to L-C-R circuits, aligned with K4.
“Modified CO2: Differentiate solution methods for linear differential equations and their applications to L-C-R circuits. (K4)”
- **CO3:** The CO is reframed to focus on solving partial differential equations using suitable methods, mapped to K3.
“Modified CO3: Solve the partial differential equations using suitable methods. (K3)”
- **CO4:** The existing CO statement is retained, with the expected learning level mapped to K3.

- “**Modified CO4:** Apply knowledge of Gradient, divergence, Curl and interpret the physical meaning of different operators. (K3)”
- **CO5:** The existing CO statement is retained, with the corresponding cognitive level identified as K3.
“**Modified CO5:** Compute the work done against a field, circulation and flux using vector calculus methods. (K3)”

3. CO-PO Articulation Matrix

- CO-PO Articulation Matrix for the LAC course was well appreciated.
- Suggested to assign a low articulation level for PO11 in DEVC, as the course has limited scope for addressing this program outcome.

4. Approved Courses and target values for Course Outcomes

The approved courses for B.Tech I/II semesters under R26 regulation are given and their corresponding target values for the courses are fixed as 70% for the knowledge levels less than or equal to K3, 65% for the knowledge levels greater than or equal to K4. The CO target values for both the courses are given as follows:

I. “Linear Algebra and Calculus”

Target Values for CO1 is fixed at 65%; CO2 is 65%; CO3 is 70% CO4 is 70% & CO5 is 65% based on the K-level.

II. “Differential Equations and Vector Calculus”

Target Values for CO1 is fixed at 65%; CO2 is 65%; CO3 is 70%; CO4 is 70% & CO5 is 70% based on the K-level.

5. Overall Remarks / Recommendations on the Proposed Syllabi:

- Suggested to include **more application-based problems** related to engineering and real-life situations.
- Advised to use **MATLAB and other mathematical tools** for better understanding of concepts.
- Suggested to conduct **short quizzes and problem-solving activities** to improve students’ analytical skills.
- Emphasized the use of **Moodle/Google Classroom** for sharing materials, assignments and quizzes.

Members of Mathematics Board of Studies – R26

Sl.No.	Name of the Member & Designation	Position in BoS	Signature
1.	Dr. T. Satyanarayana Professor & HoD, FED LBRCE	Chairman	
2.	Dr. J. V. Ramana Murthy Professor of Mathematics, NIT Warangal, Warangal.	University Nominee, JNTUK, Kakinada	
3.	Dr. K. R. Kavitha Professor of Mathematics, LBRCE	Module Coordinator, Mathematics and Course Coordinator for LAC	

4.	Dr. A. Rami Reddy Professor of Mathematics, LBRCE	Course Coordinator for P&S	R-4.
5.	Dr. K. Jhansi Rani Assoc. Prof. of Mathematics, LBRCE	Course Coordinator for DE&VC	
6.	Dr. D. Vijay Kumar Assoc. Prof. of Mathematics, LBRCE	Internal Member	
7.	Dr. K. Bhanu Lakshmi Assoc. Prof. of Mathematics, LBRCE	Internal Member	
8.	Dr. T. Radha Rani Assoc. Prof. of Mathematics, LBRCE	Internal Member	
9.	Mrs. G. Vijay Lakshmi Asst. Prof. of Mathematics, LBRCE	Internal Member	
10.	Mrs. K. N. V. Lakshmi Asst. Prof. of Mathematics, LBRCE	Internal Member	
11.	Mrs. Shaik Haseena Begum Asst. Prof. of Mathematics, LBRCE	Internal Member	
12.	Mr. T. Tandava Krishna Asst. Prof. of Mathematics, LBRCE	Internal Member	
13.	Mrs. K. Naga Lakshmi Asst. Prof. of Mathematics, LBRCE	Internal Member	
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