Detailed Course Scheme

Bachelor of Technology (B.Tech.)

(Common for all Branches)

Semester II- Examination

(2016-2020)

DOC201612020014

RNB GLOBAL UNIVERSITY

RNB Global City, Ganganagar Road,
Bikaner, Rajasthan 334601

OVERVIEW

RNB Global University follows Semester System along with Choice Based Credit System as per latest guidelines of University Grants Commission (UGC). Accordingly, each academic year is divided into two semesters, Odd (July-December) and Even (January-June). Also, the university follows a system of continuous evaluation along with regular updating in course curricula and teaching pedagogy.

The curriculum for B.Tech Program for Even (January-June) Semester, 2017 along with examination pattern is as follows:

Course Scheme

Semester II

S. No	Course Code	Course Name	Credits
1.	19001800	Applied Mathematics II	4
2.	19001900	Applied Physics II	3
3.	19002100	Engineering Graphics	3
4.	19002200	Introduction to Programming with C/C++	3
5.	19002400	Basic Mechanical Engineering	3
6.	99001900	Environmental Studies	4
7.	19002000	Applied Physics Lab II	1
8.	19002300	Programming with C/C++ Lab	1
9.	19002500	Engineering Graphics Lab	1
10.	19001100	Ability & Skill Enhancement Module II	3
11.	99002000	NCC/NSS*	-
12.	99002100	Club Activities	-
		TOTAL	**26**

EVALUATION SCHEME - THEORY

The evaluation of the theory paper of B. Tech program would be based on Internal and External Assessments. Internal Assessment would consist of 50% of the marks (50 marks) and external assessment (in form of End Term Exam) would consist of remaining 50% marks (50 marks). Detailed scheme of Internal and External Assessments as follows:

Internal Assessment

The distribution of Internal Assessment Marks is as follows**:**

Area of Assessment	Marking	Maximum Marks
Sessional-I	As per marks obtained	10
Sessional-II	As per marks obtained	10
Marks obtained in various, assignments, presentations, quizzes etc.	Average of marks obtained	15
Overall Conduct and Discipline	To be decided by concerned Faculty Member	5
Attendance	Student with 80% attendance will get 5 marks and 0.25 marks for every 1% attendance above 80 %	10
Total	**50**	

External Assessment

Type	Marks
Theory	50

EVALUATION SCHEME - PRACTICAL

The evaluation of the practical paper of B.Tech program would be based on Internal and External Assessments. Internal Assessment would consist of 50% of the marks (50 marks) and external assessment (in form of End Term Exam) would consist of remaining 50% marks (50 marks). Detailed scheme of Internal and External Assessment is as follows:

Internal Assessment

Type	Details	Marks
Marks obtained in various manuals, practical file, participation, any model prepared, output of practical	Average of marks obtained	35
Discipline	To be decided by concerned faculty	5
Attendance	80% - 5 marks and 0.25 percent for every one percent above 80 %	10
TOTAL	**50**	

External Assessment

Type	Marks
Practical	50

EVALUATION SCHEME - NSS/NCC AND CLUB ACTIVITIES

1. NSS/NCC /Similar activities prescribed by University will be completed from Semester I – Semester VI. It will be evaluated internally by the respective institute. The credit for this will be given after VIth Semester.

2. The students have to join club/clubs with the active participation in different activities of club. The students would be continuously assessed from Semester I – Semester VI and credits and marks would be given after VIth Semester.

CURRICULUM

Course Name: Applied Mathematics- II

Course Code: 19001800

Course Outline

Unit I Ordinary Differential Equations and Applications Exact differential equations, equations reducible to exact differential equations. Applications of differential equations of

first order & first degree to simple electric circuits, Newton's law of cooling, heat flow and orthogonal trajectories, linear differential equations of second and higher order. Complete solution, complementary function and particular integral, method of variation of parameters to find particular integral, Cauchy's and Legendre's linear equations, simultaneous linear equations with constant coefficients. Applications of linear differential equations to simple pendulum, oscillatory electric circuits.

Unit II: Laplace Transform: Definition, existence theorem (statement only), Laplace transform of derivatives, integrals and periodic functions. Unit step (Heaviside) & impulse (Dirac – Delta) functions. Inverse Laplace Transform. Convolution – theorem. Applications to solution of simple linear and simultaneous differential equations with constant coefficients and application to integral equations.

Unit III: Partial Differential Equations & its applications: Formation of partial differential equations, Lagrange's linear partial differential equation, first order non-linear partial differential equation, Charpit's method. Method of separation of variables and its applications to wave equation, one dimensional heat equation and two-dimensional heat flow (steady state solutions only).

Unit IV: Matrices & its Applications: Rank of a matrix, elementary transformations, elementary matrices, inverse using elementary transformations, normal form of a matrix, linear dependence and independence of vectors, consistency of linear system of equations, linear and orthogonal transformations, eigenvalues and eigenvectors, properties of eigenvalues, Cayley - Hamilton theorem and its applications, diagonalization of matrices, similar matrices, quadratic forms.

Suggested Readings

1. E. kresyzig," Advance Engineering Mathematics", Wiley publications
2. Michael Greenberg, "Advance Engineering mathematics", Pearson.
3. R.K. Jain and S.R.K. Iyengar,"Advanced Engineering Mathematics "Narosa Publications
4. B. S. Grewal,"Higher Engineering Mathematics" Khanna Publications.
5. S. Ponnusamy, "Foundation of Complex Analysis" Narosa Publication
6. G.B. Thomas and R. N. Finny " Calculus and Analytic Geometry" Addison Wesley/ Narosa
7. Wylie R, " Advance Engineering mathematics" , McGraw-Hill
8. M. Spiegel, "Schaum's Outline on Laplace Transform, Tata McGraw-Hill

Course Name: Applied Physics-II

Course Code: 19001900

Course Outline

Unit I Fiber Optics and Holography : Spatial and temporal coherence, Coherence length, Coherence time and 'Q' factor for light Fundamental ideas about optical fiber, Propagation mechanism, Acceptance angle and cone, Numerical aperture, Single and Multi-Mode Fibers, Dispersion and Attenuation. Holography: Basic Principle of Holography, Construction and reconstruction of Image on hologram and applications of holography

Unit II Elements of Material Science: Bonding in Solids: Covalent bonding and Metallic bonding. Classification of Solids as Insulators, Semiconductors and Conductors. Semiconductors: Conductivity in Semiconductors, Determination of Energy gap of Semiconductor. X-Ray diffraction and Bragg's Law. Hall Effect: Theory, Hall Coefficient and applications.

Unit III Superconductors: Temperature dependence of resistivity in superconducting materials, Effect of magnetic field (Meissner effect), Temperature dependence of critical field, London equations, Josephson theory, persistent currents, Type I and Type II superconductors, BCS theory (Qualitative), High temperature superconductors and Applications of Super-conductors.

Unit IV Atomic & Nuclear Physics: Bohr's atomic model and energy level diagram, Sommerfeld relativistic atomic model, general properties of nucleus, Mass defect and packing fraction, nuclear binding energy, Semi-empirical mass formula.

Unit V Nuclear Radiation Detectors: Characteristics of gas filled detectors: general considerations, Constructions, Working and properties of: Ionization chamber, proportional counter, G. M. Counter and Scintillation Counter.

Suggested Readings

1. Arthur Beiser 'Concepts of Modern Physics', [McGraw-Hill], 6th Edition 2009.
2. S.Vasudeva, 'Modern Engineering Physics', S. Chand, 6th Edition, 2013.
3. Richard Wolfson 'Essential University Physics' Pearson, Ist edition, 2009.
4. H.K. Malik & A. K. Singh 'Engineering Physics' [McGraw-Hill], Ist Edition, 2009.
5. C. Kittle, 'Mechanics', Berkeley Physics Course, Vol.- I. Latest Edition.
6. Irving Kaplan 'Nuclear Physics' Latest Edition.
7. John R. Taylor, Chris D. Zafirator and Michael A. Dubson, 'Modern Physics For Scientists and Engineers', PHI, 2nd Edition.
8. D.J. Griffith, 'Introduction to Electrodynamics', Prentice Hall, Latest Edition.

Course Name: Engineering Graphics

Course Code: 19002100

Course Outline

Unit I Fundamentals Drawing standard - BIS, dimensioning, lettering, type of lines, scaling-conventions. Geometrical constructions Dividing a given straight line into any number of equal parts, bisecting a given angle, drawing a regular polygon given one side, special methods of constructing a pentagon and hexagon – conic sections – ellipse – parabola – hyperbola - cycloid – trochoid.

Unit II Orthographic projection Introduction to orthographic projection, drawing orthographic views of objects from their isometric views - Orthographic projections of points lying in four quadrants, Orthographic projection of lines parallel and inclined to one or both planes Orthographic projection of planes inclined to one or both planes.

Unit III Projections of simple solids - axis perpendicular to HP, axis perpendicular to VP and axis inclined to one or both planes. Sectioning of solids Section planes perpendicular to one plane and parallel or inclined to other plane.

Unit IV Intersection of surfaces Intersection of cylinder & cylinder, intersection of cylinder & cone, and intersection of prisms. Development of surfaces Development of prisms, pyramids and cylindrical & conical surfaces. Isometric and perspective projection Isometric projection and isometric views of different planes and simple solids, introduction to perspective projection. Computer aided drafting Introduction to computer aided drafting package to make 2-D drawings.

Suggested Readings:

1. Dhawan. R.K. **A text book of** Engineering Drawing, S.Chand & Compay
2. Venugopal K., Engineering Drawing ,NewAge Publishers
3. John KC, Engineering Graphics for Degree; PHI. Learning Pvt Limited
4. Gill P.S, Engineering Drawing; S.K. Kataryia & Sons
5. Agrawal and Agrawal; Engineering Drawing;TMH

Course Name: Introduction to Programming with C/C++

Course Code: 19002200

Course Outline

Unit I Introduction to Programming: Concept of algorithms, Flow Charts, Data Flow diagrams etc., Introduction to the Editing tools such as vi or MS-VC editors, Concepts of the finite storage, bits bytes, kilo, mega and gigabytes. Concepts of character representation, Number Systems & Binary Arithmetic. Introduction to C and C++: History of C and C++, Overview of Procedural Programming and Object-Orientation Programming.

Unit II: **C Programming Basic: Data Types, Variables, Constants, Operators and Basic I/O:** Declaring, Defining and Initializing Variables, Scope of Variables, Using Named Constants, Keywords, C Data Types: int, char, float, etc, Casting of Data Types, C expressions, arithmetic operation, relational and logic operations, Using Comments in programs, Character I/O (getc, getchar, putc, putcharetc),Formatted and Console I/O (printf(), scanf()), Using Basic Header Files (stdio.h, iostream.h, conio.hetc), Using main() function, Example of some simple C program. C – Operators- Arithmetic Operators, Relational Operators, Logical Operators, Bitwise Operators, Assignment Operators

Unit III: **C++ Syntax:** Introduction to structured programming: Expressions, input using the extraction operator >> and cin, output using the insertion operator << and cout, preprocessor directives, increment (++) and decrement operations (--), creating a C++ program, input/output, relational operators, logical operators and logical expressions.

Unit IV: Expressions, Conditional Statements and Iterative Statements: C - Decision Making Statements, conditional executing using if, else. Understanding syntax and utility of Iterative Statements (while, do-while, and for loops), Use of break and continue in Loops, Using Nested Statements (Conditional as well as Iterative)

Unit V: Functions and Arrays: Utility of functions, call by Value, call by Reference, Functions returning value, Functions with variable number of Arguments. Creating and Using One Dimensional Arrays (Declaring and Defining an Array, initializing an Array, accessing individual elements in an Array, manipulating array elements using loops), Two dimensional Arrays (Declaring, Defining and Initializing Two Dimensional Array, Working with Rows and Columns), Introduction to Multi-dimensional arrays.

Unit VI: Pointers and References in C++: Understanding a Pointer Variable, Simple use of Pointers (Declaring and Dereferencing Pointers to simple variables), Pointers to Pointers, Passing pointers as function arguments, Returning a pointer from a function, using arrays as pointers, Passing arrays to functions, Structures and Unions, Memory Allocation in C++: Differentiating between static and dynamic memory allocation, use of malloc, calloc and free functions, use of new and delete operators, File I/O, Preprocessor Directives**.**

Unit VII: Using Classes and object in C++: Principles of Object-Oriented Programming, Defining & Using Classes, creating classes and object, Class Constructors, Constructor Overloading, Function overloading in classes, Class Variables &Functions, Objects as parameters, Specifying the Protected and Private Access, Copy Constructors.

Unit VIII: Overview of Function Overloading and Operator Overloading: Need of Overloading functions and operators, Overloading functions by number and type of

arguments, Looking at an operator as a function call, Overloading Operators (including assignment operators, unary operators).

Unit IX: Inheritance, Polymorphism and Exception Handling: Introduction to Inheritance (Multi-Level Inheritance, Multiple Inheritance), Polymorphism (Virtual Functions, Pure Virtual Functions), Basics Exceptional Handling (using catch and throw, multiple catch statements), Catching all exceptions, Restricting exceptions, Rethrowing exceptions.

<u>**Suggested Readings**</u>

1. HerbtzSchildt, "C++: The Complete Reference", Fourth Edition, McGraw Hill.2003
2. BjarneStroustrup, "The C++ Programming Language", 4th Edition, Addison-Wesley, 2013.
3. BjarneStroustroup, "Programming -- Principles and Practice using C++", 2nd Edition, Addison-Wesley 2014.
4. E Balaguruswamy, "Object Oriented Programming with C++", Tata McGraw-Hill Education, 2008.
5. Paul Deitel, Harvey Deitel, "C++ How to Program", 8th Edition, Prentice Hall, 2011.
6. John R. Hubbard, "Programming with C++", Schaum's Series, 2nd Edition, 2000.
7. Andrew Koeni, Barbara, E. Moo, "Accelerated C++", Published by Addison-Wesley, 2000.
8. Scott Meyers, "Effective C++", 3rd Edition, Published by Addison-Wesley, 2005.
9. Harry, H. Chaudhary, "Head First C++ Programming: The Definitive Beginner's Guide", FirstCreate space Inc, O-D Publishing, LLC USA.2014
10. Walter Savitch, "Problem Solving with C++", Pearson Education, 2007.
11. Stanley B. Lippman, JoseeLajoie, Barbara E. Moo, "C++ Primer", Published by Addison-Wesley, 5th Edition, 2012

Course Name: Basic Mechanical Engineering

Course Code: 19002400

<u>**Course Outline:**</u>

Unit I : Engineering Materials : Materials and Civilization, their socio economic impact. Classification of engineering material, composition of cast iron and carbon steels , wrought iron and their mechanical properties, stress-strain diagram, Alloy steels: stainless steel, tool steel. Alloys of Non Ferrous Metals: Common uses of various non-ferrous metals

(Copper, Zinc, Tin, Magnesium, Lead, Aluminum etc.) & alloys and its composition such as Cu-alloys: Brass, Bronze, Al-alloys.

Unit II: Fluids : Fluid and continuum, Physical properties of fluids, Rheology of fluids, Types of fluid flows: Continuum & free molecular flows. Steady and unsteady, uniform and non-uniform, laminar and turbulent flows, rotational and irrotational flows, compressible and incompressible flows, subsonic, sonic and supersonic flows, sub-critical, critical and supercritical flows, one, two and three dimensional flows, streamlines, continuity equation, Bernauli's equation for incompressible fluids. working principle of fluid coupling, pumps, compressors, turbines.

Unit III for Simple Stress, Bending & Torsion: Normal and shear stresses. One Dimensional Loading, members of varying cross section, bars in series, Elastic constants, Modulas of Elasticity, Strain energy.

Bending (Flexural) Stresses: theory of pure bending, neutral surface and neutral axis, Bending Equation, stresses in beams of different cross sections.

Torsion: Torsion Equation, combined bending & torsion of solid & hollow shafts,

Unit IV: Friction & IC Engine

Static and Kinetic friction, laws of dry friction, co-efficient of friction, angle of friction, angle of repose, cone of friction, Belt drive- derivation of equation

 Internal Combustion Engines: Classification of I.C. Engines and their parts, working principle and comparison between 2 Stroke and 4 stroke engine , difference between SI and CI engines. Pv and T-s diagrams of Otto and Diesel cycles.

Practical Learning-

1. To Study the working of 2 Stroke diesel/ petrol Engine.
2. To Study the Working of 4 Stroke diesel/ Petrol Engine.
3. To Study the working of Fluid Couplings.
4. To Study the working of Pumps.
5. To Study the working of Turbines

Suggested Readings:

1. Engg Mechanics by A.K.Tayal (Umesh Publications).
2. Engg Mechanics by Basudeb Bhattacharya (Oxford university Press)
3. Engg Mechanics by Irving H. Shames (Pearson publications).
4. Engg Mechanics by U.C.Jindal (Galgotia Publications).

5. Engg Mechanics by Beer & Johnston(TMH).
6. Engg Mechanics by K.L.Kumar (TMH).
7. Engg Mechanics by Sadhu Singh (Khanna Publishers).

Course Name: Environmental Studies

Course Code: 99001900

Course Outline

Unit I: The Multidisciplinary Nature of Environmental Studies Definition, scope and importance need for public awareness. Natural Resources Renewable and Non-renewable Resources: Natural resources and associated problems. (a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people. (b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. (c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. (d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, Case studies. (e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies. (f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Unit II: Ecosystems. Concept of an ecosystem. Structure and function of an ecosystem. Producers, consumers and decomposers. Energy flow in the ecosystem. Ecological succession. Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystem: (a) Forest ecosystem (b) Grassland ecosystem (c) Desert ecosystem (d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

Unit III: Biodiversity and Its Conservation. Introduction, definition: genetic, species and ecosystem diversity. Biogeographical classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. Biodiversity at global, National and local levels. India as a mega-diversity nation. Hot-spots of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: in-situ and ex-situ conservation of biodiversity.

Unit IV: Environmental Pollution. Definition. Causes, effects and control measures of (a) Air pollution (b) Water pollution (c) Soil pollution (d) Marine pollution (e) Noise pollution (f) Thermal pollution (g) Nuclear hazards. Solid waste management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies. Disaster management: Foods, earthquake, cyclone and landslides.

Unit V: Social Issues and the Environment. From unsustainable to sustainable development. Urban problems related to energy. Water conservation, rain water harvesting, watershed management. Resettlement and rehabilitation of people; its problems and concerns. Case studies. Environmental ethics: Issues and possible solutions. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies. Waste land reclamation. Consumerism and waste products. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and Control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation. Public awareness.

Unit VI: Human Population and the Environment. Population growth, variation among nations. Population explosion—Family Welfare Programme. Environment and human health. Human rights. Value education. HIV/AIDS. Women and Child Welfare. Role of Information Technology in environment and human health. Case Studies.

Field Work. Visit to a local area to document environmental assets - river/forest/grassland/hill/mountain. Visit to a local polluted sites - Urban/Rural/Industrial/Agricultural. Study of common plants, insects, birds. Study of simple ecosystems—pond, river, hill slopes, etc .

Suggested Readings

- Environmental Geography, H.M. Saxena, Rawat Pub.
- A Textbook Of Environment, K.M. Agrawal; P.K. Sikdar; S.C. Deb, McMillanPub.
- A Textbook of Environmental Studies, D K Asthana & Meera Asthana, S. Chand Pub.
- Environmental Studies, V. K. Ahluwalia, The Energy and Resources Institute, Pub, (2012).
- Environmental Chemistry, A.K. Dey, New Age Pub.
- Environmental Biology, K.C. Agarwal, Nidi Pub. Ltd. Bikaner

Course Name: Introduction to Programming with C/C++ Lab

Course Code: 19002300

List of Experiments

1. Write a program to produce ASCII equivalent of given number
2. Write a program to find divisor or factorial of a given number.
3. Write a program to evaluate the following algebraic expressions after reading necessary values from the user
    - $(ax+b)/(ax-b)$
    - $2.5 \log x - \cos 30 + |x^2 - y^2| + \sqrt{2xy}$
    - $(x^5 + 10x^4 + 8x^3 + 4x + 2$

4. Write a program to find sum of a geometric series
5. Write a program to cipher a string
6. Write a program to check whether a given string follows English capitalization rules
7. Write a program to find sum of the following series

   1+ ½ + 1/3 +_____+1/20
8. Write a program to search whether a given substring exist in an input string or not and then delete this string from input string.
9. Write a recursive program for tower of Hanoi problem
10. The fibonacci sequence of numbers is 1,1,2,3,5,8……. Based on the recurrence relation

   $$F(n)=F(n-1)+F(n-2) \text{ for } n>2$$

   Write a recursive program to print the first m Fibonacci number
11. Write a menu driven program for matrices to do the following operation depending on whether the operation requires one or two matrices
    a) Addition of two matrices
    b) Subtraction of two matrices
    c) Finding upper and lower triangular matrices
    d) Trace of a matrix
    e) Transpose of a matrix
    f) Check of matrix symmetry
    g) Product of two matrices.

12. Write a program that takes two operands and one operator from the user perform the operation and then print the answer
13. Write a program to print the following outputs:

    ```
    1                                1
     2   2                            2   2
      3   3   3                        3   3   3
       4   4   4   4                    4   4   4   4
        5   5   5   5   5                5   5   5   5   5
    ```
14. Write functions to add, subtract, multiply and divide two complex numbers (x+iy) and (a+ib) Also write the main program.
15. Write a menu driven program for searching an sorting with following options:-
    a) Searching   (1)   Linear searching
                      (2)   Binary searching
    b) Sorting   (1)   Intersection sort
                      (2)   Selection sorting
16. Write a program to copy one file to other, use command line arguments.
17. Write a program to mask some bit of a number (using bit operations)
18. An array of record contains information of managers and workers of a company. Print all the data of managers and workers in separate files.

Course Name: Engineering Graphics Lab

Course Code: 19002500

List of Practical's

1. One Sheet on Lettering, Types of Lines, Symbols used
2. One Sheet on Conic Sections like- Ellipse, Parabola , Hyperbola and Cycloid**.**
3. Two Sheet on Simple Scale, Diagonal Scale and Scale of Chord.
4. One Sheet on Orthographic Projections of Points.
5. One Sheets on Orthographic Projections of Lines.
6. One Sheet on Orthographic Projections of Planes.
7. Two Sheets on Projections of Simple Solids.
8. One Sheet on Sectioning of Solids.
9. One Sheet on Intersection of Surfaces.
10. One Sheet on development of Surfaces.

Course Name: Applied Physics-II Lab

Course Code: 19002000

List of Experiments

1. To determine the wavelength of monochromatic light by Newton's ring.
2. To find the wavelength of various colours of white light with the help of a plane transmission diffraction grating.
3. To determine the specific resistance of a given wire using Carey Foster's bridge.
4. To find the wavelength of sodium light by Michelson interferometer.
5. To find the resolving power of a telescope.
6. To convert a Galvanometer in to an ammeter of given range and calibrate it.
7. To convert a Galvanometer in to a voltmeter of given range and calibrate it.

8. To determine the dispersive power of material of a Prism for Violet Red and yellow colours of Mercury light with the help of a spectrometer.

9. To study the Charge & Discharge of a condenser and hence determine time constant (Both current and voltage graphs are to be plotted.

10. To find the value of Planck's constant by using a solar cell / photo electric cell.

Note : The review of syllabus happens of periodic basis for the benefit of students and in case there are changed in curriculum due to review, students would be intimated in writing

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