UNIVERSITY OF SARGODHA
Office of the Registrar (Acad Branch)

Ref: SU/Acad/25/183
Dated: 11.02.2025

Prof. Dr. Muhammad Anwar-Ul-Haq,
Chairman, Department of Physics,
University of Sargodha,
Sargodha.

Subject: RECOMMENDATIONS / MINUTES OF THE MEETING OF BOARD OF FACULTY OF SCIENCES HELD ON 27.08.2024

Please refer to the subject captioned above.

2.   The Syndicate in its 69th (1/2025) meeting held on 17.01.2025, approved the recommendations of the Academic Council made in its 22nd (3/2024) meeting held on 30.09.2024 regarding revision of Scheme of Studies / Curricula of following programs for implementation w.e.f. **Fall 2025:**

      I.   M.Phil in Physics
     II.   Ph.D in Physics

3.   However, the Department of Physics shall provide the vetted copies of the scheme of studies / curriculum through the office of Director Academics as per University / HEC prescribed format for notification.

4.   Further, the Syndicate in its same meeting approved the content and offering of course titled "Basic Mathematics (MATH-5115)" for the students who join BS in Physics, Associate Degree in Physics, having F.Sc Pre-Medical background, in 1st semester in addition to already notified syllabus, w.e.f. Fall 2024 for Main Campus and Affiliated Colleges (Annex-'A').

Further necessary action may kindly be taken accordingly.

Asif Mehmood
Deputy Registrar (Acad)
Encl: As Above.

C.c:
1. Pro-Vice Chancellor
2. Dean, Faculty of Sciences
3. Director Implementation
4. Controller of Examinations (with the request of circulation of decision mentioned under para-4 among related colleges)
5. Director Academics
6. Director QEC
7. Additional Registrar (Affiliation & Registration)
8. Secretary to the Vice-Chancellor
9. P.A to Registrar

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MATH-5115   Basic Mathematics   Cr.H-3(3-0)

The course is designed to fulfill the basic mathematics course requirement for the students with pre-medical background in their higher secondary school certificate / intermediate board exam and seeking admission in BS Physics and ADS. The course outline is designed in equivalence with the two courses Mathematics (Part-I and Part-II which are offered by the Boards of Intermediate and Secondary Education in Pakistan. Students will apply and adapt a variety of appropriate strategies to solve mathematical problems. Students will recognize and apply mathematics in contexts outside of mathematics. Students will organize and consolidate mathematical thinking through written and oral communication.

Contents

1. Real and complex numbers, introduction to permutation and combinations
2. Binomial Theorem
3. Fundamentals of trigonometry, Trigonometric identities.
4. Functions and their graphs: Polynomial Functions, Rational Functions, Trigonometric Functions, and Transcendental Functions, Domain and Range of the algebraic and Trigonometric Functions
5. Some Concepts of Analytical Geometry and applications
6. Solution of equations involving absolute values, Inequalities.
7. Limits and Continuity: Limit of a Function, Left Hand and Right Hand Limits, Continuity
8. Continuous Functions. Derivatives and its Applications: Techniques of Differentiation, The Chain Rule, Implicit Differentiation, Partial Derivatives, Differentiation of Polynomial, Rational and Transcendental Functions, Extreme Values of Functions, Derivatives of Inverse Functions
9. Integration of Definite and Indefinite Integrals: Integration by Substitution, Integration by Parts, Integration of Partial Fractions, Change of Variables in Indefinite Integrals
10. Least-Squares Line

Recommended Books:

1. Thomas. G.B., & Finney, A.R. (2005). Calculus, Reading: Addison-Wesley.
2. Anton. H., Bevens. I, & Davis. S. (2005). Calculus: A new horixon (8th ed.). New Yark: John Wliey.

Suggested Books:

1. Stewart, J. (1995). Calculus (3rd ed.). Pacific Grove, Californla: Brooks/Cols.
2. Swokowski. E. W. (1993). Calculus and analytic geometry. Bostor: PWS-Kent Company.