

NOTES

The following university courses in mathematics are announced for the academic year 1923-1924:

UNIVERSITY OF CHICAGO.—Courses which continue for more than one quarter are indicated with Roman numerals, as I, II, III, IV. By Professor E. H. Moore: Hermitian matrices in General Analysis, I, II, III, IV; Vectors, matrices, and quaternions.—By Professor L. E. Dickson: Hyper-complex numbers, I, II; Theory of equations.—By Professor H. E. Slaught: Differential equations; Definite integrals; Elliptic integrals; Advanced calculus.—By Professor G. A. Bliss: Theory of functions of a real variable; Calculus of variations; Integral equations; Advanced calculus.—By Professor E. J. Wilczynski: Seminar on Geometry; Metric differential geometry; Solid analytic geometry.—By Professor F. R. Moulton: Modern theories of analytic differential equations, I, II; Advanced ballistics, I, II.—By Professor W. D. MacMillan: Analytic mechanics, I, II; Celestial mechanics; Dynamics of rigid bodies; Theory of the potential.—By Professor A. C. Lunn: Vector analysis; Applications of vector analysis in the theory of electromagnetism; Thermodynamics; Vector analysis in Riemann-Einstein space.—By Professor J. W. A. Young: Selected topics in mathematics.—By Dr. Mayme I. Logsdon: Theory of functions of a complex variable; Introduction to higher algebra. Courses in research are also offered by Professor Moore in Foundations of mathematics and in General Analysis, by Professor Bliss in Analysis, by Professor Dickson in Algebra and Theory of numbers, by Professor Wilczynski in Geometry, and by Professor Lunn in Applied mathematics.

COLUMBIA UNIVERSITY.—By Professor T. S. Fiske: Differential equations.—By Professor F. N. Cole: Theory of groups (first term).—By Professor D. E. Smith: History of mathematics; Practicum in the history of mathematics.—By Professor C. J. Keyser: Modern theories in geometry (first term); Introduction to mathematical philosophy (first term).—By Professor Edward Kasner: Einstein's theory of gravitation.—By Professor W. B. Fite: Infinite series (second term).—By Professor J. F. Ritt: Elliptic functions (first term); Analytic theory of numbers (second term).—By Dr. G. A. Pfeiffer: Topics in projective geometry (second term).—By Dr. Jesse Douglas: Topics in higher geometry (second term).

CORNELL UNIVERSITY.—By Professor J. H. Tanner: Mathematics of finance.—By Professor Virgil Snyder: Algebraic geometry.—By Professor F. R. Sharpe: Hydrodynamics and Elasticity.—By Professor Arthur Ranum: Line geometry.—By Professor W. B. Carver: Advanced calculus.—By Professor D. C. Gillespie: Theory of functions of a complex variable.—By Professor W. A. Hurwitz: Differential equations of mathematical physics.—By Professor C. F. Craig: Projective geometry.—By Professor F. W. Owens: Advanced analytic geometry.—By Professor H. M. Morse: Analysis situs (first term); The restricted problem of three bodies (second term); Elementary differential equations.—By Dr. G. M. Robison: Calculus of variations (first term); Infinite series (second term).—By Mr. D. S. Morse: Modern higher algebra.