Cours universitaires.

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ÉTATS-UNIS D'AMÉRIQUE

Cours annoncés pour l'année universitaire 1908-1909.

University of Chicago (summer quarter, June 21 to September 3, 1909). — Prof. E. H. Moore : General analysis, 4 h ; Synthetic geometry, 4 ; Graphical algebra, 4 ; all first term. — Prof. L. E. Dickson : Theory of numbers, 4 ; Solid analytic geometry, 5. — Prof. J. W. A. Young : Critical review of secondary mathematics, 4 ; Limits and series, 4. — Prof. J. B. Shaw : Elliptic integrals and Fourier series, 4 ; College algebra, 5 ; Trigonometry, 5. — Prof. O. D. Kellogg : Theory of fonctions of a complex variable, 4 ; Integral calculus, 5 ; Analytic geometry, 5. — Dr. A. C. Lunn : Vector analysis, 4 ; Differential calculus, 5. — Prof. K. Laves : Analytic mechanics, 4. — Dr. W. D. Mac Millan : Introduction to celestial mechanics, 5,

Columbia University : New-York. — Prof. T. S. Fiske : Advanced calculus. Introduction to the theory of functions of a real variable, 3 ; Theory of functions of a complex variable, 3. — Prof. F. N. Cole : Theory of groups, 3 ; Theory of invariants, 3. — Prof. James Maclay : Application of the calculus to the theory of surfaces, 3. — Prof. D. E. Smith : History of mathematics, 2. — Prof. C. J. Keyser : General theory of assemblages, 3 ; Modern theories on geometry, 2. — Prof. H. B. Mitchell : Geometrical analysis, 3. — Prof. Edward Kasner : Geometry of dynamical systems, 2 ; Contact transformations and applications, 2. — Prof. G. H. Ling : Theory of numbers, 3 ; Modern higher algebra, 3.

Cornell University ; *Ithaca, New-York.* — Prof. J. McMahon : Vector analysis, 2 ; Applications of vector fields, 2 ; Theory of probabilities, 2. — Prof. J. H. Tanner : Teachers' course (assisted by Dr. F. W. Owens), 3. — Prof. J. I. Hutchinson : Differential geometry, 3 (first term). — Prof. V. Snyder : Algebraic curves, 3. — Prof. W. B. Fite : Theory of functions of a real variable, 2. — Dr. F. R. Sharpe : Introduction to mathematical physics, 3. — Dr. A. Ranum : Algebra, 3 (first term). — Dr. D. C. Gillespie : Series, 3 (first term) ; Linear differential equations, 3 (second term). — Dr. C. F. Craig : Analytic geometry, 3. — Dr. F. W. Owens : Differential equations, 2. — Mr. J. V. McKelvey : Projective geometry, 3.

Harvard University, *Cambridge, Mass.* — Each course is three hours per week. — Prof. W. É. Byerly : Introduction to modern geometry and modern algebra ; Advanced calculus ; Trigonometric series (with Professor Peirce). — Prof. W. F. Osgood : Theory of functions, I ; Linear differential equations. — Prof. C. L. Bouton : Theory of numbers (first half year) ; Elementary differential equations (second half year) : Geometric transformations. — Prof. J. K. Whittemore : Differential geometry of curves and surfaces (first half year) ; Properties of polynomials and invariants (second half year) ; Cele stial mechanics (first half year). — Prof. J. L. Coolidge : Probability ; Algebraic

plane curves. — Prof. E. V. HUNTINGTON : Fundamental concepts of mathematics (second half year). — Dr. H. N. DAVIS : Elements of mechanics. — Mr. G. C. EVANS - Vector analysis and quaternions. Courses of reading and research are offered by Professors Byerly, Osgood, Bouton, Whittemore and Coolidge. A seminary in geometry will be conducted by Professors Bouton, Whittemore and Coolidge.

Johns Hopkins University; *Baltimore.* — Prof. F. MORLEY : Higher geometry, 2 ; Theory of functions. 2 (first half year) ; Vector analysis, 2 (second half year). — Dr. A. COHEN : Differential equations. 2 ; Elementary theory of functions, 2. — Dr. A. B COBLE : Theory of groups, 2 ; Theory of probabilities, 2 (first half year).

University of Illinois; *Urbana, Ill.* (All courses are 3 h. a. week.) — Prof. S. W. SHATTUCK : Differential equations (first semester) ; calculus of variations (second semester). — Prof. E. J. TOWNSEND : Theory of functions of a complete variable. — Prof. G. A. MILLER : Theory of groups (second course). — Prof. E. J. WILCZYNSKI : Projective differential geometry. — Prof. H. L. RIETZ : Theory of statistics. — Prof. C. N. HAKKINS : Fourier series ; advanced calculus. — Prof. J. W. YOUNG : Theory of automorphic functions. — Dr. C H. SISAM : Theorie of invariants and higher plane curves. — Dr. A. R. CRATHORNE : Partial differential equations of physics. — Prof. YOUNG or Dr. R. L. BÖRGER : Projective geometry and linear transformations.

Indiana University; *Blomington.* — S. C. DAVISSON : Theory of surfaces, 3 ; Differential equations, 3 (a, w). — D. A. ROTHROCK : Theory of functions, 3 (a, w) ; Advanced calculus, 3 ; History of mathematics, 3 (s). — U. S. HANNA : Invariants, 2. — C. HASEMAN : Applications of partial differential equations, 3 (a = autumn, w = winter, s = spring.)

University of Pennsylvania; *Philadelphia.* — E. S. CRAWLEY : Solid analytic geometry, 2 ; Higher plane curves, 3 ; Mathematics of insurance, 2. — G. E. FISHER : Advanced calculus, 2 ; Calculus of variations, 2. — I. J. SCHWATT : Infinite series and products, 2 ; Definite integrals, 3. — G. H. HALLETT : Modern higher algebra, 3 (first half year) ; Galois theory of equations, 3 (second half year) ; Theory of groups of a finite order, 3 ; Lie's theory of continuous groups, 3 (first half year). — F. H. SAFFORD : Mathematical theory of precision of measurements, 3 (first half year) ; Curvilinear coördinates, 3 (second half year). — O. E. GLENN : Invariants and covariants, 3.

Princeton University; *N. J.* (Each course is 3 h. per week.) — Prof. H. B. FINE : Advanced algebra (first term), — Prof. H. D. THOMPSON : Coordinate geometry. — Prof. J. H. JEANS : Mechanics and kinematics, — Prof. L. G. EISENHART · Differential geometry. — Prof. O. VEBLEN : Projective geometry, I ; Projective geometry, II ; Theory of functions of real variables. — Prof. G. D. BIRKHOFF : Differential equations ; Advanced calculus. — Dr. E. SWIFT . Theory of functions of a complex variable.

Yale University; *New Haven, Conn.* — Prof. J. PIERPONT : Theory of functions of a complex variable, 2 ; Advanced theory of functions, 2 ; Elliptic functions, 2. — Prof. P. F. SMITH : Transformations of space, 2 ; Differential geometry, 2. — Prof. E. W. BROWN : Mechanics, 2 ; Advanced calculus, 3 ; Hydromechanics, 2. — Prof. H. E. HAWKES : Projective geometry, 2 ; Advanced algebra, 2. — Dr. W. A. GRANVILLE : Elementary differential geo-

metry, 2. — Dr. W. R. Longley : Differential equations, 2. — Dr. G. M. Conwell : Elementary differential equations, 1 ; Foundations of geometry, 2 ; Invariants, 2. — Dr. E. G. Bill : Integral equations, 1 ; Analytic geometry, 2.

ITALIE [1]

Année universitaire 1909-1910.

Bologna ; *Università.* — Arzela : Calcolo delle variazioni ; equazioni integrali ; serie di Laplace, 3. — Donati : Termodinamica ; teoria cinetica dei gas ; magneto-ottica ed elettro-ottica, 3. — Pincherle : Funzioni ellitiche ; integrali di differenziali algebrici ; funzioni abeliane, 3.

Catania ; *Università.* — De Franchis . Geometria sopra le superficie algebriche, 3. — Lauricella : Equazioni integrali ; sviluppi in serie di funzioni fondamentali ; vibrazioni delle corde e delle membrane elastiche, 4 1/2. — Pennacchietti : Applicazione della teoria delle funzioni ellittiche alla meccanica, 4 1/2. — Severini : Geometria differenziale.

Firenze ; *Istituto di Studi superiori.* — Boggio : Applicazioni alla Fisica matematica delle equazioni integrali, 3.

Genova ; *Università.* — Levi : Equazioni differenziali ed integrali, 4. — Loria : Teoria delle trasformazioni geometriche, 3. — Tedone : Problemi di equilibrio elastico, 3.

Napoli ; *Università.* — Amodeo : Storia delle matematiche da Newton a Lagrange, 3. — Capelli : Teoria aritmetica delle grandezze algebriche e teoria dei numeri, 3. — Marcolongo : Idrodinamica, 3. — Montesano : Teoria delle corrispondenze geometriche nello spazio, 4 1/2. — Pascal : Capitoli scelti fra quelli delle più importanti teorie analitiche, 3. — Pinto : Elettrottica, onde hertziane, 4 1/2.

Padova ; *Università.* — D'Arcais : Teoria delle funzioni, equazioni integrali, 4 1/2. — Cisotti : Teoria matematica dell'elasticità con applicazioni tecniche, 3. — Favaro : La vita e le opere di Archimede, 3. — Gazzaniga : Teoria dei numeri, 3. — Levi-Civita : Equazioni della dinamica, elementi di meccanica celeste, 4 1/2. — Ricci : Calcolo differenziale assoluto, teoria dell'equilibro e del movimento dei corpi elastici, 4. — Severi : Gruppi continui di trasformazioni, 3. — Veronese : Geometria iperspaziale, 3.

Palermo ; *Università.* — Bagnera : Funzioni automorfe, 3. — Gebbia : Teoria della propagazione del calore, termodinamica, 4 1/2. — Guccia : Teoria generale delle curve e delle superficie algebriche, 4 1/2. — Venturi : Forma dei pianeti e in particolare della terra con riguardo agli studi di elasticità della crosta terrestre, 3.

Pavia ; *Università.* — Almansi : Teoria del potenziale, elettrostatica, magnetismo, 3. — Berzolari : Geometria iperspaziale, 3. — Bonola : L'imaginario in geometria, generazione proiettiva di alcune linee e superficie, sistemi lineari di coniche e quadriche, 3. — Gerbaldi : Funzioni di variabile

[1] Les cours généraux (tels que ceux d'Analyse algébrique et infinitésimale, de Géométrie analytique, projective, descriptive, Mécanique rationnelle, Géodésie) ne sont pas indiqués dans la liste.

complessa ed integrali abeliani, 3. — Vivanti : Funzioni analitiche, teoria dei numeri algebrici, 3.

Pisa; *Università*. — Bertini : Integrali abeliani e loro applicazione alla geometria sopra una curva, 3. — Bianchi : Calcolo delle variazioni, equazioni integrali, 4 1/2. — Dini : Equazioni differenziali lineari con applicazione agli sviluppi in serie di assegnate funzioni, 4 1/2. — Maggi : Complementi di Meccanica razionale, teoria del campo elettromagnetico secondo il concetto di Maxwell, fondamenti e applicazioni della teoria degli elettroni. — Pizzetti : Figura e movimento di rotazione dei corpi celesti, astronomia sferica, 3.

Roma; *Universitá*. — Castelnuovo : Funzioni abeliane e loro applicazioni geometriche, 3. — Cerruti : Equazioni alle derivate parziali del primo ordine, 3. — Orlando : Dinamica dei dirigibili e degli aeroplani. — Silberstein : Complementi di dinamica, elettromagnetismo ed ottica, 3. — Volterra : Equazioni integrali ed integro-differenziali e applicazioni, 4 1/2. — Idrodinamica, teoria delle maree, 3.

Torino; *Università*. — Peano : Logica matematica, 3. — Sannia : Applicazioni geometriche del calcolo, geometria intrinseca, 3. — Segre : Superficie cubiche, e quartiche piane, 3. — Somigliana : Ottica ed oscillazioni elettriche, 3.

BIBLIOGRAPHIE

K. Boehm. — **Elliptische Funktionen**; erster Teil : *Theorie der ellipt. Funktionen aus analytischen Ausdrücken entwickelt.* (Sammlung Schubert XXX.) 1 vol. rel. ; 354 p. ; Mk 8,60 ; Göschen, Leipzig.

Les traités sur les fonctions elliptiques sont déjà nombreux ; les uns, destinés spécialement aux mathématiciens, sont trop complets pour être recommandés aux débutants ; d'autres ont plutôt en vue les applications si intéressantes à la Géométrie, à la Mécanique, à la Physique ou même (comme le traité de Weber) à l'Algèbre et à la théorie des nombres. Le livre de M. Boehm est une introduction à ce vaste domaine. L'auteur est resté avant tout mathématicien ; il ne dit rien des applications, mais il amène le lecteur au cœur de la théorie, sans lui faire subir les ennuis d'une trop longue route.

L'ouvrage comprendra deux volumes pouvant se lire séparément ; le deuxième, qui paraîtra sous peu, traitera spécialement de l'inversion de l'intégrale elliptique. Dans la 1re partie, divisée en 12 chapitres, l'auteur présente la théorie des fonctions elliptiques comme une trigonométrie d'un ordre plus élevé. La théorie des fonctions simplement périodiques est d'abord exposée par les méthodes mêmes qui seront employées plus tard pour les fonctions à 2 périodes ; l'étudiant n'y retrouvera pas précisément la trigo-