Abstract: The Allan P. Colburn notebooks document the education of Allan P. Colburn (1904-1955), a prominent researcher in the field of chemistry and former University of Delaware provost and coordinator of scientific research. The bulk of the material, covering the period of 1924 to 1929, consists of lecture notes and related materials for various chemistry and engineering classes Colburn took at the University of Wisconsin-Madison.
Descriptive Summary

Identification: MSS 621
Creator: Colburn, Allan P., 1904-1955.
Title: Allan P. Colburn notebooks
Inclusive Dates: 1924-1947
Bulk Dates: 1924-1929
Extent: 1 linear foot (17 volumes)
Language: Materials entirely in English.

Administrative Information

Citation: MSS 621, Allan P. Colburn notebooks, Special Collections, University of Delaware Library, Newark, Delaware.

Shelving Summary: Box 1: Shelved in SPEC MSS record center cartons

Location: Special Collections Department, University of Delaware Library Newark, Delaware 19717-5267 Phone: 302-831-2229 Fax: 302-831-6003 URL: http://www.lib.udel.edu/ud/spec/

Source: Transfer from the University of Delaware Department of Chemistry and Biochemistry, 2010.


Access Restrictions: The collection is open for research.

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Biographical Note

Dr. Allan P. Colburn (1904-1955), was a prominent educator and researcher in the field of chemical engineering. The first University of Delaware provost, Dr. Colburn also served as an Assistant to the University President coordinating scientific research across the campus and chaired the Department of Chemical Engineering. Dr. Colburn played a large role in establishing the undergraduate curriculum in Chemical Engineering and also helped develop one used by the US Army during World War II. Born in Madison, Wisconsin, Dr. Colburn attended Marquette University for two years before transferring to the University of Wisconsin, where he earned his bachelor's degree in 1926, his master's degree in 1927, and his doctorate in 1929.

In 1929, Dr. Colburn began work with the DuPont Company as a research chemical engineer, performing basic research on heat transfer, the flow of fluids, distillation, and absorption. During the course of his work with DuPont, Colburn, together with his colleague Thomas H. Chilton, developed the Chilton-Colburn analogy, which became a fundamental principle of chemical engineering. After nine years at DuPont, Colburn joined the University of Delaware in 1938 as a professor of chemical engineering. He became a full professor in 1941 and was chair of the department for nine years, leaving the post in 1947 to become assistant to the University President and adviser on research. He served as interim President of the University from April 1 to November 1, 1950 before becoming the first Provost of the University that same year. Dr. Colburn held that post until his death after a protracted illness in 1955.

Dr. Colburn's contributions to the University were significant. Responsible not only for the development of the undergraduate curriculum in chemical engineering, Dr. Colburn also worked to establish the department as one of the most prominent in the field. During World War II, Dr. Colburn was instrumental in directing the use of the chemical engineering laboratories at the university for war research problems for both the government and war industries. In his role as assistant to the University President and adviser on research, Dr. Colburn continued to strengthen the ties of the university to industry and to raise the profile of research both inside and outside the University. Although he was President for only a few months, Dr. Colburn began a major initiative to expand University housing and was also responsible for the creation of the marine biology program.

In recognition of his many contributions to the field of chemical engineering, Dr. Colburn was named one of “50 Chemical Engineers of the Foundation Age” by the American Institute of Chemical Engineering, which also bestows a yearly award in his name. He is also recognized by a named professorship in chemical engineering at the University of Delaware as well as the naming of the Colburn Laboratory in his honor.

Sources:


Program from a "Memorial Service in Honor of Allan Philip Colburn," University of Delaware Archives.

"U. of D. Trustees Name Dr. Colburn Provost," 1950 October 10, University of Delaware Archives.
"University's Provost Dies in Baltimore," University of Delaware Archives.
Scope and Content Note

The Allan P. Colburn notebooks consists of seventeen bound volumes dated between 1924-1947 (bulk dates 1924-1929) containing notes and materials from science and engineering courses Colburn took as a student at the University of Wisconsin. Included among the notebooks are two copies of Colburn's Master of Science thesis as well as drafts of two articles and a copy of a book published by the University of Delaware in 1947. Most of the course materials appear to have been custom bound by Colburn. Among the items included in the course materials are lecture notes, lab notes, graded assignments, copies of class handouts and exams, inspection reports, and itineraries.
Selected Search Terms

Personal Names

Colburn, Allan P., 1908-1955.

Corporate Names

University of Delaware.

Topical Terms

Chemical engineering--Study and teaching--20th century.

Occupation

Chemists (scientists)

Students.

Materials Cataloged Separately

More than fifty books, reports, addresses, and articles by Allan P. Colburn are cataloged and available in Special Collections.
Arrangement

The volumes in the collection are arranged chronologically by year and alphabetically within the year; undated volumes are at the end of the collection.
Detailed Description of the Collection

Mechanics of Materials, 1924-1925 [Box 1 F1]

First sheet read as follows "Mechanics 3 / Problems - 1st semester, 1924-25 / under Prof. Mauer / in conjunction with the text: / "Mechanics of Materials" - Merriman" over Colburn's signature. Contents appear to be from several different sources as it includes several different sizes of paper. Also includes copies of typed course handouts (including "Notes on Columns to Replace Chapter IX in Merriman"), handwritten notes and graphs, diagrams on blue print paper, and graded assignments.

Steam and Gas, 1924-1925 [Box 1 F2]


Contents include copies of course handouts, handwritten notes and diagrams, hand-traced "indicator cards" pasted onto pages, graded assignments, a typed report of an inspection of the University [of Wisconsin] heating plant and a "Diagrammatic Layout of a Vilter Refrigerating Plant" printed on blue print paper.

Metallography / Pyrometry, 1924-1926 [Box 1 F3]

Appears to consist of lecture notes and lab experiments for two separate classes bound together. Title Page lists "Metallography / Lecture Notes from R.A. Ragatz / Lab Experiments under J. Kromholtz(?)" followed by the word "Pyrometry" over Colburn's signature. Metallography section includes faded photographs of microstructure of various metals taken during lab experiments pasted in. These date to 1926.

Second section, "Pyrometry / Notes and Lab Experiments / R.A. Ramsay - Instructor," contains handwritten notes, graphs, and lab experiment notes and results dating to 1924.

Chemistry, 1925 [Box 1 F4]

Volume consists of several sections listed on title page as follows "1. Organic Chemistry Dr. Fisher / Notes / Laboratory experiments / 2. Quantitative Analysis Dr. Kemmerer / 3. Fuel and Gas Analysis R.A. Ramsay / 4. General Chemistry (M.U.) R.N. Baur." The material appears to come from several different sources as it includes several different sizes of paper. It includes handwritten lecture notes and lab notes, typed handouts and assignments, and several graded assignments. Also includes a loose sheet of onion skin titled "To Standardize Sodium Thiosulfate Solution for Dissolved Oxygen Determination."
Chemical Machinery / Industrial Chemistry / Coke and Gas / Fluidity and Plasticity / Thermal Chemistry / Junior and Senior Inspection Trips, 1925-1926 [Box 1 F5]

Volume consists of separate sections as listed in title and contains handwritten lecture notes, lab experiment notes, graded assignments, typed handouts, and written descriptions of inspection trips. Also includes a "Souvenir of Argo" titled "Corn Products" laid in as well as a typed itinerary for the "Senior Chemical Engineers Inspection Trip. April 14-16, 1926."

Electrical Engineering (Notes, Problems, and Experiments), 1925-1926 [Box 1 F6]


Physical Chemistry, 1926-1927 [Box 1 F7]

Volumes contains materials related to three different courses listed on first sheet as follows: "Physical Chemistry / 1. Introductory course Prof. Daniels / Laboratory experiments / 2. Electrochemistry Prof. Watts / 3. Thermodynamics Prof. Daniels." Material includes handwritten notes, diagrams, and graphs, copies of typed course handouts, graded assignments, lab notes, and copies of some course examinations. Three loose sheets with answers to problems are laid in front.

Heat Transmission Coefficients of Tubular Gas Condensers, 1927 [Box 1 F8]

Draft copy of Colburn's University of Wisconsin Master of Science thesis. Includes table of contents and numerous laid-in graphs and tables on blue print paper.

Heat Transmission Coefficients of Tubular Gas Condensers, 1927 [Box 1 F9]


Mathematics 110, Lectures of Professor R.W. Babcock, 1927-1928 [Box 1 F10]

Handwritten notes for class lectures and solutions to problems. Includes typed copy of Mathematics 110 final exam dated June 1928.

Atomic and Molecular Structures - History of Chemistry, 1928-1929 [Box 1 F11]

Contents consist of hand written lectures notes for three separate classes listed as follows:” I. Atomic Structures / 1928 Prof. Farrington Daniels / II. Molecular Structures / 1929 Prof. J.H. Williams / III. History of Chemistry /
1928 Prof. Louis Kahlenberg. The section on Atomic Structure includes a brief, typed listing of literature on atomic structure as well as copies of two exams given in the class.

Transmission of Heat Through Saturated-Gas and Liquid Films Particularly as Applied to Tubular Gas Condensers, 1929 [Box 1 F12]

Appears to be a draft of an article for the *Bulletin of the University of Wisconsin*, which appears on title page though without serial or volume number. Authors are listed as "Allan P Colburn / Fellow in Chemical Engineering" over "O.A. Hougen / Associate Professor of Chemical Engineering." Volume includes table of contents and list of illustrations (laid-in graphs on blueprint paper).

Studies in Heat Transmission, 1930, 1942 [Box 1 F13]

Appears to be rough draft of article for "Bulletin of University of Wisconsin Engineering Series" though no series or volume number is listed on title page. Authors are listed as "Allan P. Colburn / Fellow in Chemical Engineering" over "O.A. Hougen / Associate Professor of Chemical Engineering." Includes table of contents and table of figures, which seems to refer to the numerous graphs on blue print paper laid-in or stapled on pages. There are numerous penciled corrections and annotations throughout, including three loose sheets with differing versions of pages 63-66. There is also a loose sheet with what appears to be a draft version of the table of contents in pencil.

Included with this volume are three pieces of correspondence from Colburn's co-author O.A. Hougen, all dated from June of 1930, none of which appear related to the article. There is also a reprint of Colburn's article "Relation between Mass Transfer (Absorption) and Fluid Friction" from the journal *Industrial and Engineering Chemistry*, Volume 22, 967-977 (1930 September). Also included is a reprint of the article "Vapor-Liquid Equilibria of the System Acetone-Acetic Acid-Water" by Robert York, Jr. and Robert C. Holmes from *Industrial and Engineering Chemistry*, Volume 34, 345-50 (1942 March).

Text-notes for the Course Chemical Engineering 18, Fundamentals of Chemical Engineering, August 1932 [Box 1 F14]

Authors listed as "O.L. Kowalke and R.A. Ragatz of the Instructional Staff / Chemical Engineering Department / University of Wisconsin / Madison." Contents consists of typed notes on lectures I - XIII, problems, and two illustrations printed on blue print paper.

*The Application of Differential Equations to Chemical Engineering Problems*, March 1, 1947 [Box 1 F15]

Authors listed as W.R. Marshall, Jr. and R.L. Pigford of the Engineering Department of E.I. duPont deNemours and Company. Book published by the University of Delaware based on a graduate Chemical Engineering course given at the University of Delaware by the authors. Includes table of contents and list of figures.

Advanced Inorganic Analysis: Lectures of Professor George Kemmerer, undated [Box 1 F16]
Colburn's typed notes with some pencil/pen annotations. Includes a table of contents. Identified on spine as "Advanced Quantitative."

Introduction to Bacteriology / Lectures of Professor W.H. Wright / Laboratory Experiments, undated [Box 1 F17]

The notebook appears to be divided into two sections, the first consisting of lecture notes, the second of experimental results in ink with penciled corrections/deletions. Some contain pencil illustrations in margin.