GeE 301 COURSE SYLLABUS

Evolution and Development of Flood Control Engineering in the United States

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- Formation of the Mississippi River Commission in 1879 (see pp. 47-49 in *Army Engineers in the Memphis District*, by Martin Reuss, 1982; pp. 17-61 in *A Century on the Mississippi*, 1986; and pp. 41-91 and 129-132 in *Of Men and Rivers*, 1978)
- Evolution of Mississippi River Levees 1879-present (see p. 148-52 in *Of Men and Rivers*, 1978; and *A Century on the Mississippi*, 1986; and *Improvement of the Lower Mississippi River and Tributaries 1931-72*)
- Evolution of the Corps of Engineers Levees-Only Policy for flood control (versus bypasses and offstream storage) along the Mississippi River Valley (see discussions in *Rising Tide*, 1995; *Improvement of the Lower Mississippi River and Tributaries 1931-72*; and pp. 106-118 in *Of Men and Rivers*, 1978)
- The 1907 and 1909 Floods in the Sacramento Valley and the Successful Employment of Bypass Weir Control for Flood Storage [by C.E. Grunsky] and its Impact on the Corps of Engineers doctrines in the succeeding decades
- Impacts of the 1912 Flood of the Mississippi River (see *Report of Board on Examination and Survey of the Mississippi River*, 1909; *Rising Tide*, by John Barry, 1995, and *Floods of the Mississippi Valley* by J. P. Kemper, 1929, in instructor collection)
- The 1913 Dayton Flood and Creation of the Miami Conservancy District by Arthur E. Morgan (*The Miami Conservancy District*, by A.E. Morgan, 1952; *Time of Terror: The Great Dayton Flood*, by Allen W. Eckert, 1965;)
- The January 1914 and January 1916 Floods in Southern California and the Creation of the Los Angeles County Flood Control District (*Research, Los Angeles County Flood Control 1914-15*, by J.W. Reagan, 1915; *Southern California Floods of January 1916*, by H.D. McGlashan and F.G. Ebert, USGS WSP 425, 1918)
- The June 1922 Flood in Pueblo, Colorado and the Role of Arthur E. Morgan in Developing a second conservancy district
- Debate over Creation of the Army Corps of Engineers Hydraulic Laboratory in the 1920s (see Ch 7 in *Dams and Other Disasters* by A.E. Morgan, 1973)
- The Mississippi River Flood of 1927 (see *Rising Tide*, by John Barry, 1995; *Of Men and Rivers*, 1978; and *Floods of the Mississippi Valley* by J. P. Kemper, 1929)
- Federal Flood Control Act of 1928 (see pp. 85-92 (Document 6) in *Army Engineers in the Memphis District*, by Marti Reuss, 1982)
- Corps of Engineers Jadwin Plan for Flood Control of the Mississippi River in 1928 (see Great Inland Waterway Project of the U.S., 1928)

- The San Gabriel Dam at the Forks Project: How the World's Largest Dam Project Came to be cancelled During Construction (1928-31)
- Personalities of the Mississippi River flood control plans (MG A.A. Humphries, James B. Eads; COL Ernest Graves; LG Edwin Jadwin, BG T.H. Jackson, MG Lytle Brown, BG Harley B. Ferguson, LCOL John C. H. Lee, MG Howard D. Vogel, others)
- The Deadly January 1, 1934 Debris Flows in La Cresenta and Montrose, California and its Impact on the Federal Flood Control Act of 1934 (misc serial pub articles in 1934-35)
- Flood Control in the Atchafalaya Basin by US Corps of Engineers (*Designing the Bayous: The Control of Water in the Atchafalaya Basin 1800-1995*, by Martin Reuss, 1998)
- Jadwin's Floodways at Birds Point-New Madrid, Red-Atchafalaya Rivers and the Bonnet Carre Spillway in Louisiana (*Designing the Bayous* by Martin Reuss, 1998 and *Great Projects* by James Tobin, 2001)
- Evolution of the Federal Flood Control Act of 1936 (*The Flood Control Challenge: Past, Present, and Future*, H. Rosen and M. Reuss, 1988)
- The Ohio-Mississippi Valley Flood Disaster of 1937 (in *Report of Relief Operations by the American Red Cross*, 1937)
- The Supreme Test: The March 2, 1938 Flood in Southern California (*Flood of March 2, 1938*, by M.F. Burke, LA Co Flood Control District; *Floods of March 1938 in Southern California*, by H.C. Troxell, USGS WSP 844, 1942) and Its Impact on Evolution of Cost Sharing Acts in Federal Flood Control 1938-47
- Federal Flood Control Protection Acts of 1938 and 1941 and the US Corps of Engineers role in providing flood control (see *Designing the Bayous*, by Martin Reuss, 2001)
- Evolution of Potamology and River Science in river improvement and maintaining navigation (see Corps district histories for New Orleans, Vicksburg, Memphis, St Louis, and Rock Island)
- The January 1952 Dual Storm Sequence in Southern California and the Evolution of Grading and Excavation Codes (*Report of Flooding January 15-18, 1952*, by M.F. Burke, LACFCD; Ch 1 in *Excavation, Grading Administration, Inspection and Enforcement*, by C.M. Scullin, 1983)
- The Christmas 1955 Floods in Northern California and the Flooding of Yuba City; Impacts on Reevaluation and Reconstruction of Federal Flood Control Levees (*Floods of December 1955 and January 1956*; CA Div of Water Resources Bulletin 24)
- Attempting to Control Channel Downcutting: Evolution of Bed Control Structures from early 1930s (Soil Conservation Service) on ward (The Flood Control Controversy, by L. B. Leopold and W. Maddock, Jr., The Ronald Press, 1954) and additional work by the Federal Highway Administration in the 1960s (need ref)
- The Real Cost of a 100-year storm: A Retrospective Look at the December 1964 storms in Northern California and how differently these damages might be mitigated today (*Flood! The December 1964 and January 1965 Storms*, CA Dept Water Resources Bulletin 161, 1965; *One Day From Disaster*, US Bureau of Reclamation Region 2, Mar 1965)

- Back-to-Back Floods: The January and February 1969 Storms and Appurtenant Damage Caused to the Protective Infrastructure of the Los Angeles County Flood Control District (*Storms of 1969: Summary Report*, by L.D. Simpson, LACFCD; and *LACFC System and early 1969 storms*, by M.J. Wood, Civil Engineering, Jan 1970)
- Introduction of the National Flood Insurance Program (NFIP) in 1969 and Evolution of Methodologies Used in Preparing Flood Insurance Rate Maps (FIRM) (see *The National Flood Insurance Program Accomplishments and Directions 1976-86*, by Douglas Gore, in *What We Have Learned Since the Biog Thompson Flood*)
- The Deadly 1972 Rapid City, SD Floods: How the tragedy came to be (Perry Rahn article in AEG Bulletin, 1977)
- The Greatest Test: 1973 Flood along the Lower Mississippi River (see *The Flood of '73*, Mississippi River Commission, 1975; *The 1973 Mississippi River Basin Flood*, USGS Professional Paper 937; *Improvement of the Lower Mississippi River and Its Tributaries*, Mississippi River Commission, Vicksburg, 1972; *The Mississippi River Flood of 1973*, Charles C. Noble; *Geologic Control of Sand Boils Along Mississippi River Levees*, Charles R. Kolb)
- Deadly Debris Flows: The August 1976 Big Thompson Canyon Flood (*What We Have Learned Since the Big Thomson Flood*; 10th Anniv Conference Proceedings, Boulder, CO, 1986; and *Proceedings of the 20th Anniv Conference*, Fort Collins, CO, 1996)
- The Salt Lake Valley Floods of 1983, 1984 and 1985 (see *Effective Emergency Response*, Retrospective Rpt #1, APWA Public Works Historical Society monograph)
- The 1993 Flooding of the Lower Missouri River System and Downstream Impacts on the Middle Mississippi River (*The Great Flood of 1993*, Stanley A. Changnon, ed.; *The Flood of '93* by Associated Press; *The Great Midwest Flood* by C.G. Vogel)
- The January 1997 California Floods: How could $15 billion in damages occur in a State with a maximal number of onstream storage facilities? (*California Floodplain Management: An Evaluation of Flood Damage Prevention Programs*, CA DWR Bulletin 199, 1980)

Additional references on Los Angeles County Flood Control, which emphasize sediment management and debris control from steep-faced mountain ranges:

Flood Control in Metropolitan Los Angeles, by R. Bigger, UC Press, 1959

Debris Reduction Studies for Mountainous Watersheds of Los Angeles County, by W.R. Ferrell, LACFCD, 1959

Geomorphological Hazards in Los Angeles, by R.U. Cooke, Allen and Unwin, 1984

Hazardous Metropolis: Flooding and Urban Ecology in Los Angeles, by Jared Orsi, Univ Wisconsin, Madison PhD thesis, 1999