# **Historical CAPP Student Elective Choices**

This document is a comprehensive compilation of electives that CAPP students have taken in the past. Please note this list is not an exhaustive list of courses that are available (course offerings and seat availability change from year to year) and is not an endorsement of these courses. Cross-listed courses are not compiled; they are listed separately under each school/division's course code.

We encourage you to research courses and course evaluations, speak with your academic advisor, and consider what courses are best for your specific career goals.

# **Relevant Quick Links**

- University of Chicago Academic Calendar
- Harris School of Public Policy Detailed Academic Calendar
- Optional certificate offerings:
  - o Harris certificates
  - Graduate Program in Health Administration and Policy (GPHAP)
  - o Certificate Program in Urban Science & Sustainable Development
  - Certificate in Education and Society

#### **Offerings by Department**

- → Computational Analysis and Public Policy (CAPP)
- → Harris School of Public Policy (PPHA)
- → Masters Program in Computer Science (MPCS)
- → The College: Department of Computer Science (CMSC)
- → Toyota Technological Institute at Chicago (TTIC)
- → Economics Concentration: Master of Arts Program in the Social Sciences (ECON/ECMA)
- → Crown Family School of Social Work, Policy, and Practice (SSAD)
- → Booth School of Business (BUSE, BUSF, BUSW, BUSN)
- → Master of Arts in Computational Social Science (MACS)
- → Committee on Environment, Geography and Urbanization (GEOG/CEGU)
- → Department of Sociology (SOCI)
- → Department of Statistics (STAT)
- → Department of Mathematics (MATH)
- → Financial Mathematics (FINM)
- → Master of Science in Analytics (MSCA)
- → Committee on Medical Physics (MPHY)
- → Public Health Sciences (PBHS)
- → Committee on Clinical and Translational Science (CCTS)
- → Comparative Human Development Program (CHDV)

- → The Law School (LAW)
- → Center for the Study of Gender and Sexuality (GNSE)
- → Committee on Conceptual and Historical Studies of Science (CHSS)
- → Department of Visual Arts (ARTV)
- → Department of Art History (ARTH)
- → Department of English Language and Literature (ENGL)
- → <u>Program in Creative Writing (CRWR)</u>
- → Department of Political Science (PLSC)
- → Department of Philosophy (PHIL)
- → <u>Digital Studies of Language</u>, <u>Culture and History (DIGS)</u>
- → Department of History (HIST)
- → Pozen Family Center for Human Rights (HMRT)
- → Social Sciences Division (SOSC)
- → Department of Ecology & Evolution (ECEV)
- → Department of Cinema and Media Studies (CMST)

#### **Computational Analysis and Public Policy (CAPP)**

Note: ALL CAPP course offerings listed below are elective courses previously offered. CAPP core courses required for the degree can be found on the <u>CAPP website</u>.

CAPP 30239 Data Visualization for Policy Analysis

CAPP 30255 Advanced Machine Learning for Public Policy

CAPP 30300 Data Science Clinic

CAPP 30350 Security, Privacy, and Consumer Protection

#### Harris School of Public Policy (PPHA)

Note: ALL PPHA course offerings listed below are elective courses previous CAPP students have taken. PPHA core courses required for the degree can be found on the Harris website.

#### 2023-2024 Course Offerings

**PPHA 30300** Philosophical Foundations of Public Policy

**PPHA 30520** Text Mining in Public Policy

**PPHA 30525** Next Generation Data: Sources, Access

**PPHA 30540** Machine Learning for Public Policy

**PPHA 30560** Data Visualization

**PPHA 30580** Civic Technology

**PPHA 31720** The Science of Elections and Campaigns

PPHA 31730 The Strategic Uses of Survey Research in Political Campaigns

PPHA 31810 Lessons from Policies that Went Wrong

**PPHA 31941** Behavioral Science and Public Policy

PPHA 32000 Finance

**PPHA 32735** African Development

PPHA 32736 Economics, Politics and African Societies

PPHA 32740 Order & Violence

PPHA 32750 Hydropolitics: Water Policy and Conflict

**PPHA 32810** Winning Issue Campaigns

PPHA 33230 Inequality: Theory, Methods, and Evidence

PPHA 33420 Contemporary US Intelligence

PPHA 33510 Nuclear Policy

**PPHA 33520** The Social Psychology of Behavior in Organizations

**PPHA 33611** Foundations of Social Entrepreneurship

**PPHA 33620** Leading with Innovation

**PPHA 33820** The Intersection of Cyber Threats and Human Rights OR Democracy Hacked:

Cyber Threats to Modern Governments in the Digital Age

**PPHA 33901** Matching Efficiency and Inequality

**PPHA 34241** Household Finance: Theory and Applications

**PPHA 34410** Corporate Finance

**PPHA 34330** Attaining Equity in K-12: Theory and Practice

**PPHA 34500** Macroeconomics for Pbpl

**PPHA 34799** Race, Politics, and the Press in Chicago

PPHA 34810 Mixed Methods to Policy Research

**PPHA 35240** Education in Developing Contexts

PPHA 35310 International Trade, Banking and Capital Markets

**PPHA 35550** Economic Development and Policy

**PPHA 35561** The Practicalities of Running Randomized Control Trials

**PPHA 35570** Conflict and Humanitarian Intervention: Blurring Humanitarian, Development, and Security Policy

**PPHA 35700** Economics of Education Policy

**PPHA 36101** Financial Investments for Public Policy

PPHA 36150 Environmental, Social, and Governance (ESG) and Impact Investing

**PPHA 36410** Epidemiology and Population Health

**PPHA 36600** Writing for Public Policy Professionals

**PPHA 36620** Applied Policy Communications Lab

PPHA 36925 Utilities and Electricity Markets: Regulation in the United States

**PPHA 36701** Poverty Inequality and Welfare St

**PPHA 36921** Energy Economics and Policy

**PPHA 36922** Energy in the Developing World

**PPHA 36930** Environmental Economics: Theory and Applications

**PPHA 36941** Strategic Behavior and Regulation of Firms

**PPHA 37008** State Formation in Latin America

**PPHA 37102** Crime Policy

**PPHA 37103** Crime Prevention

**PPHA 37105** Crime, Conflict, and the State

**PPHA 37106** Police Reform and Police Legitimacy

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**PPHA 37110** Competition Policy

**PPHA 37300** Health Law and Policy

PPHA 37302 Key Issues in Healthcare: An Interdisciplinary Case Studies Approach

PPHA 37411 Management Matters: Leadership, Strategy, and Getting

PPHA 37415 Exercising Leadership in the 21st Century

PPHA 37420 Fundamentals of Leadership

PPHA 37425 Leadership and Public Policy: Winning in the Endgame

**PPHA 37510** The US Healthcare System

**PPHA 37720** Introduction to U.S. Health Policy and Politics

PPHA 37820 Health Care Markets and Regulations

**PPHA 37910** Race and Ethnic Differences in Health: Epidemiology, Behavior and Policy

**PPHA 38290** Introduction to Health Economics

**PPHA 38300** Health Economics and Public Policy

**PPHA 38520** GIS Application in the Social Sciences

PPHA 38530 City Lab

**PPHA 38550** Technology for Public Policy: Building Connected, Engaged, and Empowered

Communities

**PPHA 38615** Modern Political Communications

**PPHA 38720** Urban Economics and Policy

PPHA 38740 Conflict: Root Causes, Consequences and Solutions

**PPHA 38750** Refugees, Security and Forced Migration

**PPHA 38751** Child Exploitation, Human Trafficking and the Supply Chain

**PPHA 38790** Introduction to Peacebuilding

**PPHA 38820** Machine Learning and Policy

**PPHA 38829** Artificial Intelligence for Public Policy

**PPHA 38830** The Minds Behind the Machine: Artificial Intelligence in Modern Policy

**PPHA 38840** Addressing Technology's Wake: Emerging Risks and the Public Policy Imperative

**PPHA 38900** Environmental Science/Policy

**PPHA 39506** The Supreme Court and Public Policy

**PPHA 39750** Politics and Public Policy in Latin America

**PPHA 39830** Quantitative Security

**PPHA 39925** Energy Policy and Human Behavior

**PPHA 39930** International Climate Policy

**PPHA 40010** Leadership and Modern American Politics

**PPHA 40310** Poverty and Social Welfare Policy

**PPHA 41021** Health Impacts of Transportation Policies

**PPHA 40321** The Modern Welfare State

**PPHA 40700** Early Childhood: Human Capital Development and Public Policy

**PPHA 40101** Policy Analysis Methods/Apps

**PPHA 40321** The Modern Welfare State

**PPHA 41210** Physics and Technology for Future Policy Workers

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**PPHA 41300** Cost-Benefit Analysis

PPHA 41400 Applied Regression Analysis: Analysis of Microeconomic Data

PPHA 41420 Multilevel Regression Modeling for Public Policy

**PPHA 41501** Game Theory

PPHA 41600 Survey Research Methodology

PPHA 41750 Women in the Labor Market

PPHA 41800 Survey Questionnaire Design

**PPHA 42000** Applied Econometrics

PPHA 42510 Applied Financial Management

**PPHA 42535** Banking Regulation and Management

**PPHA 42715** Introduction to Law and Economics

PPHA 43401 Diplomacy and Defense

PPHA 44550 Weak States and International Relations

PPHA 44900 Social Experiments: Design and Generalization

**PPHA 45210** Regional Innovation Strategies

**PPHA 45211** Regional Innovation and Growth

**PPHA 46610** Workplace and Family Policy

**PPHA 46350** Economics of Regulation

**PPHA 47400** Women, Development, and Politics

**PPHA 47610** Intergenerational Mobility

**PPHA 48403** Optimization - Conscious Econometrics

**PPHA 50101/50501** Leadership in Chicago

**PPHA 50400** Science Technology and Policy

PPHA 50502 Chicago Urban Leadership

**PPHA 52000** Individual Reading and Research Course

PPHA 60000 Policy Lab

PPHA 60020 Policy Lab: Criminal Justice Reform

PPHA 60021 Policy Lab II: Criminal Justice Reform

**PPHA 60030** Policy Lab I: Human Services Innovation

# **Masters Program in Computer Science (MPCS)**

#### 2023-2024 Course Offerings

MPCS 50103 Mathematics for Computer Science: Discrete Mathematics

MPCS 51031 Android Application Development

MPCS 51032 Advanced iOS Application Development

MPCS 51033 Backends for Mobile Applications

**MPCS 51036** Java Programming

MPCS 51039 Mobile Software Development

**MPCS 51044** C/C++ for Advanced Programmers

MPCS 51042 Python Programming

**MPCS 51043** Swift Programming

MPCS 51046 Intermediate Python Programming

MPCS 51050 OO Arch: Patterns Tech Implem

MPCS 51081 Unix Systems Programming

MPCS 51083 Cloud Computing

MPCS 51087 High Performance Computing

MPCS 51100 Advanced Programming

MPCS 51200 Introduction to Software Engineering

MPCS 51205 Topics in Software Engineering

MPCS 51220 Applied Software Engineering

MPCS 51260 Human-Computer Interaction

MPCS 51230 User Interface and User Experience Design

MPCS 51240 Product Management

MPCS 51250 Entrepreneurship in Technology

**MPCS 51400** Functional Programming

MPCS 51410 Object Oriented Programming

MPCS 52011 Introduction to Computer Systems

MPCS 52015 Advanced Computer Systems

MPCS 52030 Operating Systems

MPCS 52040 Distributed Systems

MPCS 52060 Parallel Programming

MPCS 52553 Web Development

MPCS 52554 Advanced Web Development

MPCS 53014 Big Data Application Architecture

**MPCS 53111** Machine Learning

MPCS 54001 Networks

MPCS 55001 Algorithms

MPCS 56420 Bioinformatics for Computer Scientists

MPCS 56430 Introduction to Scientific Computing

MPCS 56511 Introduction to Computer Security

MPCS 56512 Application Security

MPCS 56600 Introduction to Blockchain

MPCS 58020 Time Series Analysis and Stochastic Processes

MPCS 53013 Big Data

MPCS 51200 Introduction to Software Engineering

MPCS 56515 Computer and Network Security

MPCS 51030 iOS Application Development

# The College: Department of Computer Science (CMSC)

#### **Course Information**

CMSC 22500 Type Theory

CMSC 23200 Introduction to Computer Security

CMSC 23900 Data Visualization

CMSC 25040 Introduction to Computer Vision

CMSC 25500 Introduction to Neural Networks

CMSC 20900 Computers for Learning

CMSC 30560 Data Visualization

**CMSC 30370** Inclusive Technology

CMSC 33001 Topics in Systems

CMSC 33210 Usable Security and Privacy

**CMSC 33218** Surveillance Aesthetics: Provocations About Privacy and Security in the Digital Age

CMSC 33231 Topics in Human Computer Interaction

CMSC 31230 Fundamentals of Deep Learning

**CMSC 33400** Mobile Computing

CMSC 35100 Natural Language Processing

CMSC 35200 Deep Learning Systems

**CMSC 35400** Machine Learning

CMSC 35401 Topics in Machine Learning: Deep Learning OR Topics in Machine Learning:

**Applied Machine Learning** 

CMSC 35600 Image Processing/Computer Vision

CMSC 33750 Machine Learning & Cancer

CMSC 35300 Mathematical Foundations of Machine Learning

**CMSC 35050** Computational Linguistics

# **Toyota Technological Institute at Chicago (TTIC)**

# 2023-2024 Course Offerings

TTIC 31010 Algorithms

TTIC 31020 Introduction to Statistical Machine Learning OR Advanced Natural Language

Processing OR Introduction to Machine Learning

TTIC 31070 Mathematical Computation IIA: Convex Optimization

TTIC 31050 Introduction to Bioinformatics & Computational Biology

TTIC 31230 Fundamentals of Deep Learning

TTIC 31210 Advanced Natural Language Processing

**TTIC 31190** Natural Language Processing

**TTIC 31110** Speech Technologies

TTIC 31180 Probabilistic Graphical Models

TTIC 41000 Special Topics: Spectral Techniques for Machine Learning

TTIC 31220 Unsupervised Learning and Data Analysis

TTIC 31170 Planning, Learning, and Estimation for Robotics

# **Economics Concentration: Master of Arts Program in the Social Sciences** (ECON/ECMA)

# **List of Courses**

ECMA 31320 Applications of Econometric and Data Science Methods

**ECMA 31340** Big Data Tools in Economics

ECMA 33220 Introduction to Advanced Macroeconomic Analysis

ECMA 33230 Macroeconomic Crises

ECON 28620 Crony Capitalism

ECON 33230/34930 Inequality: Theory, Methods and Evidence

**ECON 34901** Social Interactions and Inequality

ECON 35550 The Practicalities of Running Randomized Control Trials

**ECON 41120** Topics in Behavioral Economics

**ECON 41200** A Course in Experimental Economics

# Crown Family School of Social Work, Policy, and Practice (SSAD)

#### **List of Courses and 2023-2024 Course Offerings**

**SSAD 40550** Food Insecurity and Food Policy in the U.S.

SSAD 41500 The Practice of Group Work

SSAD 47452 Smart Decarceration: A Grand Challenge for Social Work

SSAD 48112 Community Organizing

SSAD 48500 Data for Policy Analysis/Management

SSAD 62100 Creating New Anchors: An Introduction to Prison Industrial Complex Abolition

**SSAD 63200** Crime Prevention

SSAD 63412 Cultural Studies in Education

SSAD 65600 Special Issues in Healthcare MGT: Health Systems

### Booth School of Business (BUSE, BUSF, BUSW, BUSN)

#### **Course Search**

**BUSN 30000** Financial Accounting

BUSN 30121 Accounting for Entrepreneurship: From Start Up to IPO

**BUSN 32200** Artificial Intelligence

**BUSN 32901** Applications of Machine Learning to the Empirical Sciences

**BUSN 33040** Macroeconomics

**BUSN 33222** Sports Analytics

**BUSN 33401** Money and Banking

**BUSN 33402** Understanding Central Banks

**BUSN 33502** International Financial Policy

**BUSN 33520** The Wealth of Nations

**BUSN 34104** Special Topics in Entrepreneurship: Developing a New Venture (New Venture Challenge)

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**BUSN 34115** New Social Ventures

**BUSN 34715** Hacking for Defense

**BUSN 34500** Macroeconomics for Public Policy

BUSN 34502 Intro to Venture Capital: A Toolkit for Analyzing and Financing

**BUSF 35000** Investments

**BUSN 35200** Corporation Finance

**BUSN 36106** Managerial Decision Modeling

**BUSN 37000** Marketing Strategy

**BUSN 37105** Data Science for Marketing Decision Making

**BUSN 37304** Digital and Algorithmic Marketing

**BUSF 38002** Managerial Decision Making

**BUSN 38103** Strategies and Processes of Negotiation

**BUSE 38116** Leading and Managing Teams

BUSN 39001 Strategy and Structure: Markets and Organizations

**BUSN 40000** Operations Management: Business Process Fundamentals

BUSN 40721 Healthcare Analytics Lab

**BUSN 41000** Business Statistics

**BUSN 41203** Financial Econometrics

**BUSN 42001** Competitive Strategy

BUSN 41201 Big Data

BUSN 41202 Analysis of Financial Time Series

**BUSN 41916** Bayes, AI and Deep Learning

**BUSN 42118** Business Applications of Natural Language Processing

BUSN 42706 Entrepreneurship: Urban Opportunities and Solutions I

BUSN 42707 Entrepreneurship: Urban Opportunities and Solutions II

BUSN 53013 Big Data

**BUSN 53014** Big Data Application Architecture

# **Master of Arts in Computational Social Science (MACS)**

#### **List of Courses**

MACS 30123 Large Scale Computing for the Social Sciences

MACS 30500 Computing for the Social Sciences

MACS 31300 AI Applications in the Social Sciences

MACS 40101 Social Network Analysis

MACS 40200 Structural Estimation

MACS 40400 Computation and the Identification of Cultural Patterns

MACS 40500 Computational Methods for American Politics

MACS 40800 Unsupervised Machine Learning

MACS 50000 Computational Social Science Workshop

MACS 54000 Introduction to Spatial Data Science

MACS 60000 Computational Content Analysis

# Committee on Environment, Geography and Urbanization (GEOG/CEGU)

#### 2023-2024 Course Offerings

GEOG 30500 Introduction to Spatial Data Science

**GEOG 30519** Spatial Cluster Analysis

**GEOG 34600** Introduction to Urban Sciences

**GEOG 35900** Introduction to Location Analysis

**GEOG 38402** Geographic Information Science II

GEOG 38602 Geographic Information Science III

**GEOG 38702** Introduction to GIS and Spatial Analysis

GEOG 39650 Environmental Data Science Practicum I

**GEOG 40217** Spatial Regression Analysis

# **Department of Sociology (SOCI)**

#### **2023-2024 Tentative Course Offerings**

**SOCI 30253** Introduction to Spatial Data Science

**SOCI 40133** Computational Content Analysis

**SOCI 40217** Spatial Regression Analysis

**SOCI 40253** Urban Science and Sustainable Development

SOCI 60013 Workshop on Education

### **Department of Statistics (STAT)**

#### **Course Information**

STAT 24400 Statistical Theory and Methods I

STAT 28000 Optimization

STAT 30850 Multiple Testing, Modern Influence and Replicability

**STAT 31700** Introduction to Probability Models

STAT 31900 Introduction to Causal Inference

STAT 32940 Multivariate Data Analysis via Matrix Decompositions

**STAT 33100** Sample Surveys

STAT 34300 Applied Linear Stat Methods

**STAT 34700** Generalized Linear Models

STAT 34800 Modern Methods in Applied Statistics

STAT 35920 Applied Bayesian Modeling and Inference

STAT 37601 Machine Learning and Large-Scale Data Analysis

**STAT 37710** Machine Learning

# **Department of Mathematics (MATH)**

#### **2023-2024 Course Offerings**

MATH 20400 Analysis in Rn II

## MATH 60000 Computational Content Analysis

# **Financial Mathematics (FINM)**

#### **List of Courses**

FINM 32600 Computing for Finance in C++

FINM 32700 Advanced Computing for Finance

FINM 33150 Regression Analysis and Quantitative Trading Strategies

FINM 33160 Machine Learning in Finance

FINM 33165 Probabilistic Programming and Deep Learning

FINM 33170 Financial Statistics: Time Series

FINM 33180 Multivariate Data Analysis via Matrix Decomposition

FINM 34510 Introduction to Stochastic Calculus

FINM 35910 Applied Algorithmic Trading

FINM 37301 Foreign Exchange: Markets, Pricing and Products

FINM 37602 Mathematical Market Microstructure w/o Rationality

# **Master in Applied Data Science (ADSP)**

#### 2023-2024 Course Offerings

**ADSP 31006** Time Series Analysis and Forecasting

ADSP 32018 Natural Language Processing and Cognitive Computing

### **Committee on Medical Physics (MPHY)**

#### **General Courses Offered (Varied)**

MPHY 39600 Image Processing/Computer Vision

#### **Public Health Sciences (PBHS)**

#### HYPERLINK "https://pbhs.uchicago.edu/page/core-course-descriptions" List of Courses

**PBHS 32400** Applied Regression Analysis

**PBHS 30910** Epidemiology and Population Health

**PBHS 38300** Health Economics and Public Policy

## **Committee on Clinical and Translational Science (CCTS)**

#### **List of Courses**

CCTS 20500 Machine Learning & Advanced Analytics for Biomedicine

#### **Comparative Human Development Program (CHDV)**

#### **List of Courses**

**CHDV 30510** Computational Content Analysis

# The Law School (LAW)

#### **Curriculum and Course Search**

LAWS 43260 Election Law

LAWS 43282 Energy Law

LAWS 48401 International Trade Law

LAWS 53201 Corporate Criminal Prosecutions and Investigations

LAWS 53221 Current Issues in Criminal and National Security Law

LAWS 51704 Critical Legal Studies vs. Law and Economics

## **Center for the Study of Gender and Sexuality (GNSE)**

#### 2023-2024 Course Offerings

GNSE 42912 Work and Family Policy: Policy Considerations for Family Support

## **Committee on Education: Education and Society (EDSO)**

#### **List of Courses**

**EDSO 33009** Research Practice Partnerships in Education

#### **Committee on Conceptual and Historical Studies of Science (CHSS)**

# **2023-2024 Course Offerings**

**CHSS 35415** History of Information

# **Department of Visual Arts (ARTV)**

#### **List of Courses**

ARTV 32501 Art & Machine Intelligence

#### **Department of Art History (ARTH)**

#### **2023-2024 Course Offerings**

**ARTH 38606** Early Twentieth Century Urban Visions

# **Department of English Language and Literature (ENGL)**

# **List of Courses**

ENGL 33000 Academic and Professional Writing

# **Program in Creative Writing (CRWR)**

#### **2023-2024 Course Offerings**

**CRWR 30406** Beginning Nonfiction Workshop

#### **Department of Political Science (PLSC)**

#### **2023-2024 Course Offerings**

PLSC 36100 Civil War Back to top

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# **Department of Philosophy (PHIL)**

# HYPERLINK "https://philosophy.uchicago.edu/courses" 2023-2024 Course Offerings

PHIL 57201 Spinoza's Psychological Politics

# Digital Studies of Language, Culture and History (DIGS)

# **2023-2024 Course Offerings**

**DIGS 30006** Natural Language Processing

# **Department of History (HIST)**

#### **2023-2024 Course Offerings**

**HIST 49302** Colloquium: History of Political Corruption

# **Pozen Family Center for Human Rights (HMRT)**

# **2023-2024 Course Offerings**

**HMRT 37700** International Human Rights

# **Social Sciences Division (SOSC)**

SOSC 36031 Survey Data Analysis

# **Department of Ecology & Evolution (ECEV)**

#### **List of Courses**

ECEV 42800 Population Ecology

#### **Department of Cinema and Media Studies (CMST)**

# **2023-2024** Course Offerings

CMST 38006 Minimalist Experiment in Film & Video