

MASTER OF PUBLIC WORKS (INFRASTRUCTURE ENGINEERING AND MANAGEMENT)

The Master of Engineering in Public Works (M.P.W.) degree is the most widely recognized educational credential for professionals engaged in public works and infrastructure engineering and management. This program is offered in cooperation with the university's Master of Public Policy and Administration program.

Curriculum

| Code | Title | Credit Hours |
|---|--------------------------------|--------------|
| Required Courses | | (9) |
| Select a minimum of three courses from the following: | | 9 |
| CAE 523 | Statistical Analysis Engg Data | 3 |
| CAE 539 | Intro to Geographic Info Systs | 3 |
| CAE 570 | Legal Issues in Civil Engrg | 3 |
| CAE 574 | Economic Decision Analysis | 3 |
| CAE 575 | Systems Analysis in Civil Engg | 3 |
| MATH 525 | Statistical Models and Methods | 3 |
| PA 501 | Introduction to Public Admin | 3 |
| PA 551 | Public Infrastructure Mgmt | 3 |
| Elective Courses | | (21) |
| Select 21 credit hours (see recommended courses below) ¹ | | 21 |
| Total Credit Hours | | 30 |

¹ If more than three courses from the required courses list are taken, those additional courses can be applied as electives

Recommended Elective Coursework by Subject

Construction Management

| Code | Title | Credit Hours |
|---------|--------------------------------|--------------|
| CAE 471 | Construction Plan & Scheduling | 3 |
| CAE 472 | Construction Site Operation | 3 |
| CAE 473 | Construction Contract Admin | 3 |
| CAE 474 | Intro Building Info Modeling | 3 |
| CAE 569 | Constr Meths Estimating Budget | 3 |
| CAE 570 | Legal Issues in Civil Engrg | 3 |
| CAE 571 | Lean Construction and Control | 3 |

Geo-environmental Engineering

| Code | Title | Credit Hours |
|----------|--------------------------------|--------------|
| CAE 482 | Hydraulic Dsgn Open Chnnl Syst | 3 |
| CAE 486 | Soil Site Improvement | 3 |
| CAE 562 | Engineering Behavior of Soils | 4 |
| CAE 564 | Foundations/Embankments/Earth | 4 |
| CAE 565 | Rock Mechanics and Tunneling | 4 |
| CAE 566 | Earthquake Engg/Soil Dynamics | 4 |
| CAE 589 | Groundwater Hydrology/Sampling | 3 |
| CAE 590 | Geotechnical Landfill Design | 3 |
| ENVE 404 | Water & Wastewater Engineering | 3 |
| ENVE 528 | Modeling of Envrmtl Systems | 3 |
| ENVE 551 | Industrial Waste Treatment | 3 |
| ENVE 580 | Hazardous Waste Engineering | 3 |

Public Administration - Administration Process

| Code | Title | Credit Hours |
|--------|-----------------------------|--------------|
| PA 502 | Organizational Behavior | 3 |
| PA 503 | Administration Law | 3 |
| PA 522 | Human Resource Management | 3 |
| PA 532 | Public Financial Management | 3 |
| PA 533 | Adv Financial Managment | 3 |

Public Administration - Policy Planning

| Code | Title | Credit Hours |
|--------|--------------------------------|--------------|
| PA 537 | Crisis Mgmt/Homeland Security | 3 |
| PA 538 | Info Syst Security/Cyber Crime | 3 |
| PA 539 | Local Government Mgmt | 3 |
| PA 562 | Urban and Metropolitan Gov | 3 |
| PA 578 | Plan,Policy Making&Bult Envir | 3 |
| PA 588 | Incident Rspnse Disaster Rcvry | 3 |

Structural Engineering

| Code | Title | Credit Hours |
|---------|--------------------------------|--------------|
| CAE 504 | Seismic Retrofit/Earthquake | 4 |
| CAE 506 | Building Env Rehab Engineering | 3 |
| CAE 508 | Advanced Bridge Engineering | 3 |
| CAE 518 | Advanced Reinforced Concrete | 3 |
| CAE 519 | Structural Forensics | 3 |
| CAE 520 | Buckling of Structures | 4 |
| CAE 525 | Advd Steel&Composite Structure | 4 |
| CAE 551 | Prestressed Concrete | 3 |
| CAE 561 | Structural Reliability | 3 |

Transportation Engineering

| Code | Title | Credit Hours |
|----------|--------------------------------|--------------|
| CAE 419 | Intro Transportation Engg/Dsgn | 3 |
| CAE 540 | Asphalt Concrete Mix Design | 3 |
| CAE 541 | Pavement Evaluation&Management | 3 |
| CAE 544 | Urban Transportation Planning | 4 |
| CAE 545 | Traffic Operations & Flow Thry | 3 |
| CAE 546 | Public Transportation Systems | 3 |
| CAE 547 | Advanced Traffic Engineering | 3 |
| CAE 548 | Transportation Systems Mgnt | 3 |
| CAE 549 | Transportation Econ, Dev&Ply | 3 |
| CAE 555 | Transportation Sysys Evaluatio | 3 |
| CAE 568 | Transportation Asset Mgmt | 3 |
| CAE 580 | Intelligent Transport Systems | 3 |
| CAE 581 | Algorithms in Transportation | 3 |
| MATH 522 | Mathematical Modeling | 3 |
| MATH 542 | Stochastic Processes | 3 |
| MATH 563 | Mathematical Statistics | 3 |
| MATH 564 | Applied Statistics | 3 |
| MATH 565 | Monte Carlo Methods in Fin | 3 |
| MATH 571 | Data Preparation and Analysis | 3 |
| MATH 574 | Bayesian Computational Stats | 3 |