Developing a New Course for Public Transportation Education: **Matching Academic Content to Workforce Needs**

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Motivation

- Public transportation is a key component of sustainable transportation
- Civil Engineering students need a solid understanding of public transport
- Transit course material is not readily available in many curriculums
- The needs of transit professionals have changed dramatically in recent years

Objectives

- Identify critical topics to prepare student for work in public transportation
- Develop 2 transferrable modules for educators:
  - Week-long Module for Undergraduate Intro to Transportation
  - Semester-Long Graduate Course
- Match academic content to workforce needs

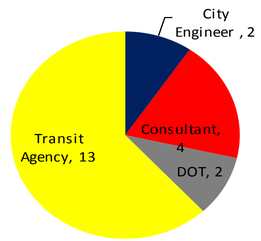
Qualitative Analysis of Curriculum

- Compiled public transportation graduate course syllabi from 14 universities for qualitative comparison
- Universities included: Georgia Tech, Univ. of Arizona, Univ. of Pennsylvania, MIT, Univ. of Washington, Univ. of Kansas, Univ. of Connecticut, Utah State University, Univ. of Wisconsin Milwaukee, University of Idaho, Portland State, Univ. of S. Florida, New Jersey Institute of Tech. Univ. of Texas Austin
- Ranked topics within planning, design & operations categories

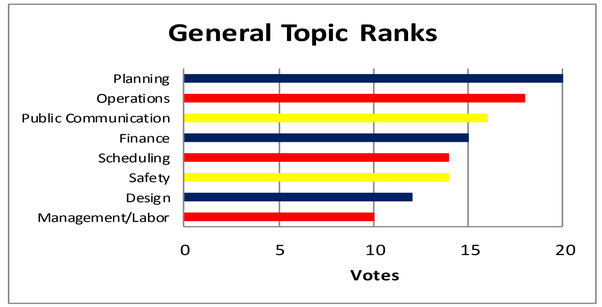
Rank	Topic
1	Service Planning
2	Scheduling (Crew & Vehicle)
3	Network Structure & Design
4	Operations Research, Planning & Management
5	Quality of Service & Performance Management
6	Travel Demand & Ridership Forecasting
7	Facility Design (Stop & Station)
8	History & Development of Public Transit
9	Capacity Concepts & Comparison
10	Cost Characteristics & Modeling (Excludes Finance)

Survey of Practitioners

- 21 Practitioners were interviewed via email survey
  - Ranked topics within planning, design, &
  - operation categories
  - Stated what they wished they had learned in school
- Breakdown of practitioner work background:



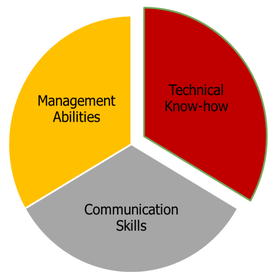
- Knowledge/skills most mentioned by interviewed practitioners:
  (1) understanding of transit politics & federal regulations,
  (2) ability to write and communicate well, &
  (3) understanding public transportation operations.



Rank	Topic
1	General Planning Process
2	Evaluating Alternatives
3	Transportation Decision Making
4	Coordinating Transport Systems
5	Funding, Finance, Grants
6	Bus Transit Route & Stop Design
7	Pedestrian Sidewalk Design
8	Transportation Data Management
9	Pedestrian Regulations
10	Public Transport Safety/Security

Preliminary Conclusions

- There is a need for technical skills and management knowledge
- Public meetings & community involved were identified as missing areas
- Understanding the context in which transit planning decisions are made is critical



Future Work

- Teach the newly developed materials and evaluate learning objectives
- Publish course material openly on the internet

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