



Standing Committee on Construction

# Ethics and Professional Development in Engineering Schools, Organisations and Practice

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  - Past President
- World Council of Civil Engineers
  - September 2019



# Topics

- **Introduction**
- **Family**
- **Grade School**
- **Under Graduate-Post Graduate**
- **Professional Registration**
- **Professional Practice**
- **Professional Mobility**
- **Members**
- **Final Comments**



# Introduction

- **Pillars of the Profession**
- **How we develop as Professionals**
- **Ethics**
- **What we Study**



# Our Pillars

- **Values**
- **Rule of Law**
- **Ethics**
- **Professionalism**



# How we develop as engineers

- **Formal Education**
- **Licensing**
- **Professional Organisations**
- **Continuing Education and Self Development**
- **Periodic License Renewal**
- **Ethics and Conduct**
- **Profession and Business**



# Ethics

- **The foundations of Professional Practice**
- **Behavior**
- **Compliance**
- **Continuous Education and Training**
- **Ethics Codes and Standards**
- **Role of:**
  - **Individual**
  - **Professional Organisations**
  - **Government**



# Family

- **Cultural Background**
- **Impacts of large mobility: ie Emmigration**
- **Values**
- **Rule of Law- informal**
- **Ethics- informal**

# Grade School

- **Culture and customs**
- **Curriculum**
- **STEM-Science, Technology, Engineering & Math**
- **Manual and Special skills**





# Under Graduate- Graduate

- **Four vs Five year program**
- **School and Programs Accreditation**
- **Faculty Professional Requirements**
  - Degrees
  - Professional Licensing and Practice
  - research
- **Research Programs**
- **Interdisciplinary Programs**



# Managements Systems in Engineering

- **Ethics and Prevention of Corruption: ISO 37001**
- **Quality Control and Assurance**
- **Occupational Health and Safety**
- **Environmental Protection**
- **Project Management**
- **Risk Management**
- **Disaster Response**
- **The Scientific Method**

# Professional Registration

- **Bachelors Degree**
- **Evaluation through Specialty Exams**
- **Licensing Organism**
- **Professional Organizations**
  - Voluntary
  - Mandatory
- **Mandatory Continuing Education**
- **Change of Field or Specialty**
- **Licensing Renewal**
  - Continuing Education Requirement
  - Conduct and Ethics Screening



# Professional Practice

- **Practice modes**
  - **Individual**
  - **Associations or Societies**
  - **Corporate**
  - **Public Service**
  - **Education**

# CODES

- **International**
- **Professional Organisations**
  - ASCE
  - ACI
  - ICE
  - Others
- **Regional**
- **National**



# Other Characteristics

- **Sustainability**
- **Environmental and Social Protection**
- **Cradle to Grave Project Approach**
- **Insurance Requirements**

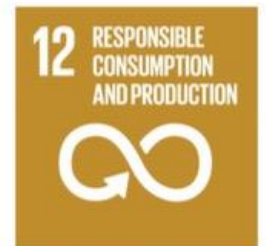
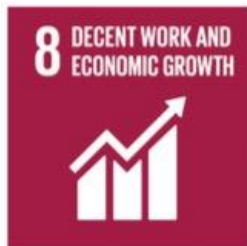
# U.N. SUSTAINABLE DEVELOPMENT GOALS

- **Global Commitment**
- **Goals and targets for 2030**
- **Main Thrusts:**
  - **Reduction of Poverty**
  - **Sustainable Development**





# SUSTAINABLE DEVELOPMENT GOALS





# Professional Mobility and Globalization

- **Needs for Global Standards**
- **Multiple Licensing Jurisdictions**
- **Codes of Ethics**
- **Professional Responsibilities and Liabilities**
- **Building Codes**



# Committee Members

- Puerto Rico
- Emilio Colón
- Efrain Echandi
- Cuba
- Julio SALGADO
- México
- Tito Guillermo Fenech



# Final Comments

- **Our Foundations**
- **Education at all levels**
  - Informal
  - Formal
- **Professional regulation**
- **Compliance**





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