



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
2018 Volume II: Engineering Solutions to 21st Century Environmental Problems

Introduction

Science and engineering are not the same. Science is the systematic study of the physical and natural world through observation and experiment. Engineering is the application of science and math to solve problems and to design and build things. This seminar focused on problem solving and design to preserve our environment and improve human health. The field of Environmental Engineering leverages subjects including chemistry, physics, mathematics, biology, economics and public health.

While environmental engineers have solved many problems of the 20th century including dramatic improvement in air and water quality, the 21st century poses new problems and challenges. The individual units contained in this volume address these contemporary environmental problems. They include designing and evaluating alternative energy approaches, unraveling the chemistry behind ocean acidification, and developing new approaches for carbon sequestration. A second group of units builds drinking water treatment technologies and considers access to clean water in the developing world. A final two units address the contemporary environmental issues of urban sustainability and indoor air quality.

The units' topics are diverse, but all follow an environmental theme and contain the engineering principles of design and problem solving. Our hope is to enable and empower students to solve 21st century environmental problems through technology and sustainable design.

Jordan Peccia

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