






COURSE NAME : Solar Energy Basics-State University of New York






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Overview

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Course Info



**Video:** Welcome to Solar Energy Basics 2 min

**Overview of the major sources of energy**



**Video:** Primary energy sources 3 min



**Video:** Transformation of Energy 3 min



**Video:** Solar energy 4 min



**Practice Quiz:** Major sources of energy 5 questions


**How solar panels convert light into electricity**


**Video:** Photovoltaic cells and modules 3 min



**Video:** Silicon-based Photovoltaics 4 min



**Video:** Other photovoltaic materials 5 min



**Reading:** Improvements in solar cell efficiency over time 15 min


**Practice Quiz:** Solar cell basics 6 questions


**Calculating Energy Efficiency**



**Video:** Calculating Module Conversion Efficiency 9 min



**Reading:** A note on calculations work in the quizzes 5 min





**Practice Quiz:** Calculating efficiency <MATH> 6 questions

**Electrical and mechanical components of a solar panel system**


**Video:** Other PV system electrical components 6 min


**Video:** PV System Mechanical Components 3 min






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- ✓ **Video:** PV System Mechanical Components 3 min
- ✓ **Practice Quiz:** Electrical and Mechanical Components 4 questions

## Solar power systems module quiz



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### Calculating Power and Energy

- ✓ **Video:** Calculating Power and Energy 8 min
- ✓ **Practice Quiz:** Power and Energy Calculations <MATH> 6 questions

### Determining energy use at a site

- ✓ **Video:** Measuring appliance power and energy 4 min
- ✓ **Video:** Determining appliance energy usage from web resources 1 min
- ✓ **Video:** Determining energy usage from an electric bill 4 min
- ✓ **Reading:** Using Web Based Energy Tools 15 min
- ✓ **Practice Quiz:** Determining energy consumption <MATH> 7 questions

<https://www.coursera.org/learn/solar-energy-basics/quiz/W0bxj/power-and-energy-calculations-math> Calculating PV system size

## Calculating PV system size

- ✓ **Video:** Adjusting for location and system losses 8 min
- ✓ **Video:** Calculating system size 6 min
- ✓ **Reading:** Insolation Maps 15 min
- ✓ **Practice Quiz:** Calculating System Size <MATH> 10 questions



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### Growth of Photovoltaics

- ✓ **Video:** Historical Growth of Photovoltaics 11 min
- ✓ **Video:** Growth Potential of Photovoltaics 5 min
- ✓ **Reading:** The current trends in photovoltaics 20 min
- ✓ **Practice Quiz:** Growth of PV 4 questions

### PV Growth in the United States Case Study

- ✓ **Video:** PV Growth: US Case Study 8 min
- ✓ **Reading:** Current US data and predictions for the coming decades 20 min
- ✓ **Practice Quiz:** US PV growth 4 questions

### Applications of Photovoltaics

## Applications of Photovoltaics

- ✓ **Video:** Applications of PV 8 min
- ✓ **Practice Quiz:** Applications of PV 5 questions



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### Stakeholders in Photovoltaics

- ✓ **Video:** Jobs and stakeholders in PV 10 min
- ✓ **Practice Quiz:** Jobs and stakeholders in PV 5 questions

### PV financial models

- ✓ **Video:** PV financial models: Net metering 6 min
- ✓ **Video:** PV financial models: Remote net metering, PPAs, Leasing 5 min
- ✓ **Practice Quiz:** PV Financial models <MATH> 7 questions

### Pathways to certifications in Photovoltaics

- ✓ **Video:** Pathways to PV Certifications 7 min
- ✓ **Reading:** Certifications for Photovoltaic Installation 30 min

<https://www.coursera.org/learn/solar-energy-basics/quiz/9AwCs/jobs-and-stakeholders-in-pv>

- ✓ **Reading:** Certifications for Photovoltaic Installation 30 min
- ✓ **Practice Quiz:** Pathways to Certification 5 questions