



# Stephen R. Tritch

## Nuclear Engineering Program

### Professional Master of Science and Graduate Certificate

*Offered on campus and online*

#### WHY STUDY NUCLEAR ENGINEERING AT THE UNIVERSITY OF PITTSBURGH?

Nuclear energy contributes as much to meeting U.S. energy demand without contributing carbon emissions as any other source, renewable or otherwise. Engineers with a strong background in nuclear power, safety, and advanced plant design are crucial to the future of the industry and so to address this workforce need, Pitt's Swanson School of Engineering offers both a Master of Science (30-credits) and Graduate Certificate (15-credits) in Nuclear Engineering.

The program leverages the nuclear engineering knowledge base of western Pennsylvania, home to nuclear utility generators, commercial R&D companies and government agencies, with Pitt's School of Engineering. It provides a unique combination of nuclear academics and research across the Mechanical Engineering and Materials Science (MEMS) department, featuring a breadth of experienced industry professionals knowledgeable in neutronics, safety analysis, risk analysis, plant design, plant operations and advanced plant design. The collaboration between academics and industry knowledge has resulted in a unique curriculum, taught by nuclear power industry experts and continually adapting to meet the needs of advancing nuclear technology.

The curriculum focuses on different facets of nuclear power, including energy generation, operations, safety, environmental issues, advanced reactors, and policy. The online program provides professionals with greater flexibility to earn advanced credentials from home without the need to relocate.

#### WHY SWANSON ONLINE?

Pitt's online learning technology allows students to attend lectures in real time with students in the classroom. By combining our online and on-campus classes, we create a collaborative learning environment with students from diverse educational and professional backgrounds. The flexibility to attend an on-campus class, join a lecture online, or view a recorded lecture, enables you to select the learning style that works best for you and your schedule.

**DR. HENG BAN**

*Director of Nuclear Engineering  
R.K. Mellon Professor*

#### ADMISSIONS REQUIREMENTS

BS in Engineering from an ABET-accredited university program;

**OR**

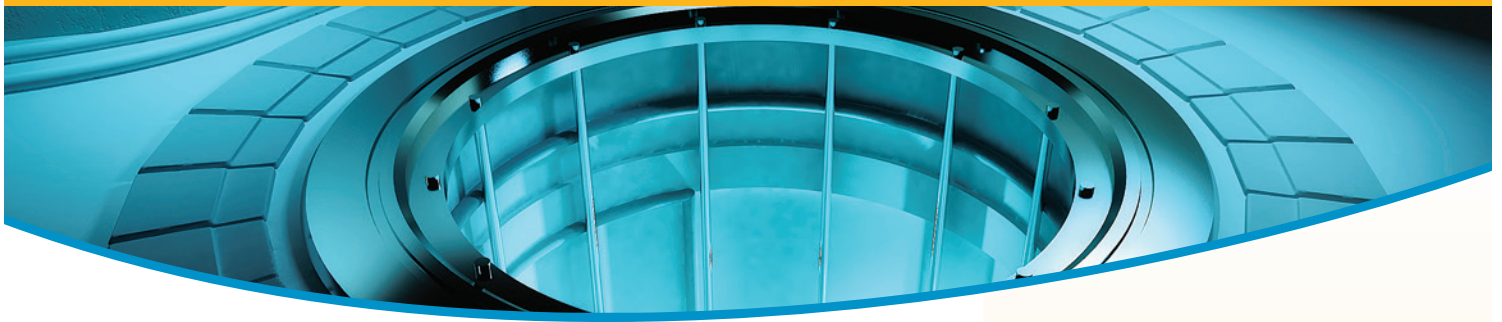
BS in other technical disciplines.

**NOTE:** *Candidates with other educational and professional backgrounds will be considered on an individual basis with strong emphasis given to academic promise, career orientation, work experience, and preparation in engineering and related disciplines. Additional coursework may be required to ensure skill set necessary for success in the program.*

#### FOR MORE INFORMATION

[engineering.pitt.edu/  
NuclearProgram](http://engineering.pitt.edu/NuclearProgram)

**PITT** | **SWANSON**  
ENGINEERING  
GRADUATE & ONLINE PROGRAMS



## Stephen R. Tritch Nuclear Engineering Program

Professional Master of Science and Graduate Certificate *(continued)*

Upon acceptance, you will be assigned a faculty advisor to help guide your studies. With limited formal credit requirements, you and your advisor can tailor the program to meet your educational goals. For the professional MS program, no thesis is required and there is only one required course. *We require students who come to us from a background other than nuclear engineering, to complete ME/ENGR 2100: Fundamentals of Nuclear Engineering or be approved as having taken an equivalent course.*

### DELIVERY

- On-Campus
- Online

### TOTAL CREDITS

- Masters – 30
- Certificate – 15

### ENTRANCE EXAM

- GRE Optional

### ADDITIONAL ADMISSIONS REQUIREMENTS

- Two Letters of Recommendation
- Official Transcripts

## NUCLEAR ENGINEERING GRADUATE COURSES

Courses designated as “**NUCE/ME**” will also be recognized for credit toward an MS or PhD in Mechanical Engineering. These courses include **NUCE/ME 2100**, **NUCE/ME 2102**, and **NUCE/ME 2115**, described below. All NUCE courses are available as potential electives as allowed in Pitt departments.

<b>NUCE/ME 2100</b>	Fundamentals of Nuclear Engineering
NUCE 2101	Nuclear Core Dynamics
<b>NUCE/ME 2102</b>	Nuclear Plant Dynamics and Control
NUCE 2103	Integration of Nuclear Plant Systems with the Reactor Core
NUCE 2104	Nuclear Operations and Safety
NUCE 2105	Integrated Nuclear Power Plant Operations
NUCE 2110	Nuclear Materials
NUCE 2112	Nuclear Chemistry and Radiochemistry
NUCE 2113	Radiation Detection and Measurement
<b>NUCE/ME 2115</b>	Heat Transfer and Fluid Flow in Nuclear Plants
NUCE 2116	Boiling Water Reactor Thermal Hydraulics and Safety
NUCE 2120	Mathematical Modeling of Nuclear Power Plants
NUCE 2122	Management Principles in Nuclear Power
NUCE 2125	Case Studies in Nuclear Codes and Standards
NUCE 2130	The Nuclear Fuel Cycle
NUCE 2131	Metal Cooled Reactors
NUCE 2132	Boiling Water Reactor Systems and Safety

For more information about our Graduate Nuclear Programs, please contact:

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ENGINEERING

STEPHEN R. TRITCH  
NUCLEAR ENGINEERING PROGRAM

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The information printed in this document was accurate to the best of our knowledge at the time of printing and is subject to change at any time at the University's sole discretion.

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09/22