

# Course Series of Reactor Physics and Shielding

*Sophomore*

NES 2009 Introduction of Nuclear Engineering  
NES 2010 Principles of Nuclear Engineering

ESS 2030 、 2040  
Engineering  
Mathematics I & II

*Junior  
&  
Senior*

ESS 3040 Probability and Statistics  
ESS 4012 Nuclear Power Reactor  
Safety  
ESS 4100 Nuclear Power Systems

ESS 4011 Radiation Safety  
ESS 4050 Principles in Photon &  
Particle Measurements  
ESS 4030 Nuclear Radiation  
Detection & Measurement  
Laboratory

*Graduate*

NES 5010 、 5020 Reactor Physics I & II  
NES 5040 Nuclear Reactor Dynamics  
NES 5055 Monte Carlo Method  
NES 5220 Radiation Shielding  
NES 5410 Nuclear Reactor Engineering

NES 5050 Transport Calculations  
and Medical Physics  
NES 5055 Monte Carlo Method  
NES 5220 Radiation Shielding

# Course Series of Nuclear Power Plant Heat Transfer

*Sophomore*

ESS 2030 、 2040 Engineering Mathematics I & II  
ESS 2400 Thermodynamics I  
ESS 2410 Engineering Thermodynamics

*Junior*

NES 2009 Introduction of Nuclear Engineering  
NES 2010 Principles of Nuclear Engineering  
ESS 3420 Fluid Mechanics I  
ESS 3400 、 3410 Heat Transfer 、 Heat Transfer Laboratory

*Senior*

ESS 41000 Nuclear Power Systems  
ESS 401200 Nuclear Power Reactor Safety

*Graduate*

NES 5010 Reactor Physics I  
NES 541000 Nuclear Reactor Engineering  
ESS 543000 Advanced Heat Transfer

*Graduate*

NES 542000 Advanced Nuclear Reactor Engineering  
NES 546000 Advanced Nuclear Reactor Design I  
ESS 643000 Two-Phase Flow & Boiling Heat Transfer

# Course Series of Nuclear Materials

*Sophomore*

ESS 2500 、 2501 Introduction to Materials Science I & II  
NES 2009 Introduction of Nuclear Engineering  
NES 2010 Principles of Nuclear Engin  
ESS 2510 Thermodynamics of Materials eering

*Junior*

ESS 3510 Physical Metallurgy I  
ESS 3520 Physical Metallurgy II

*Senior*

ESS 4500 Mechanical Properties of Materials  
ESS 4510 Corrosion Engineering Surface  
Science

*Graduate*

ESS 5510 Defects in Crystals  
ESS 5520 Advanced Physical  
Metallurgy

*Graduate*

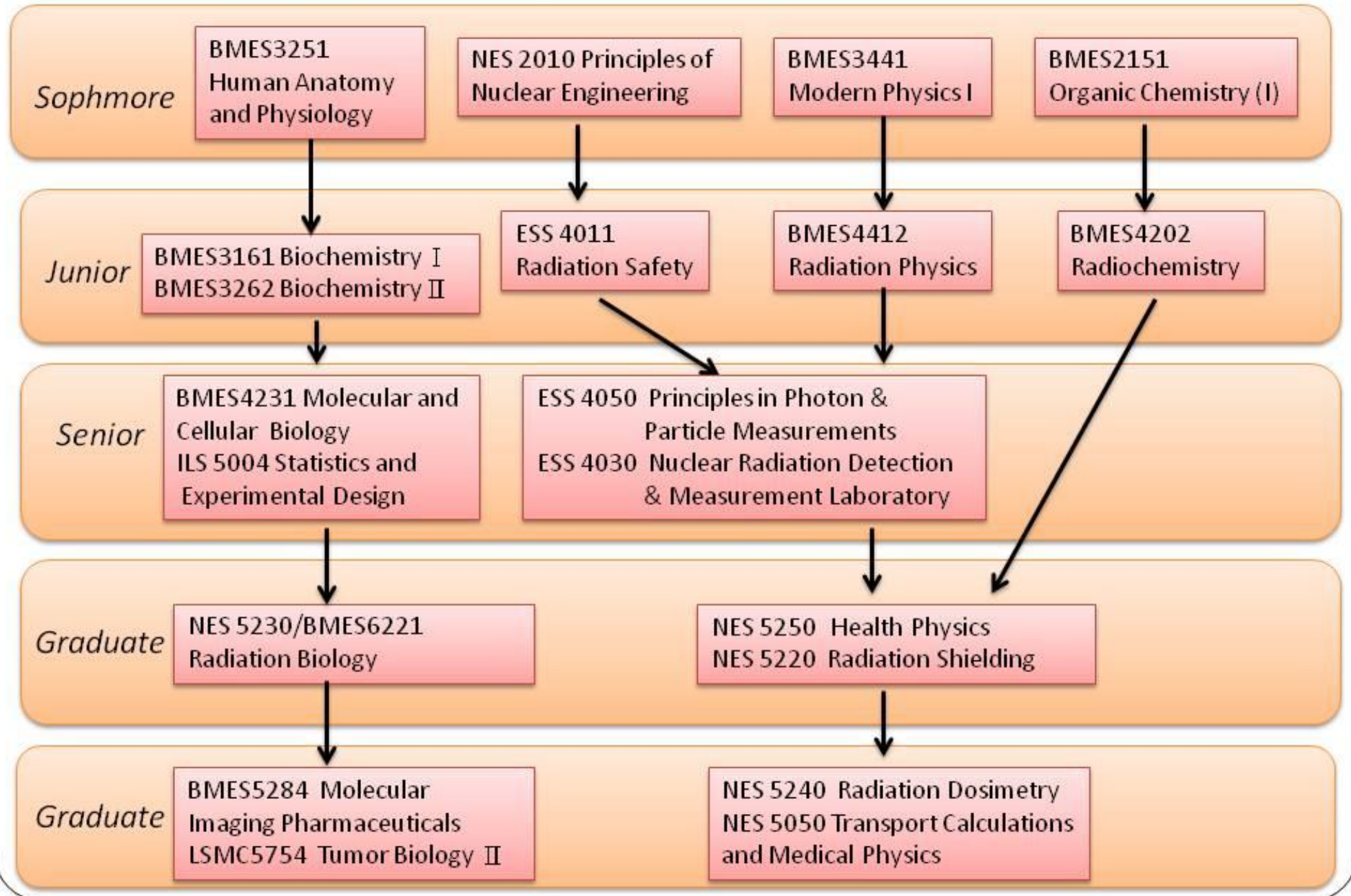
NES 5610 Structure Materials in  
Nuclear Power System

NES 5630 Radiation Damage  
in Materials

*Graduate*

NES 5010 Reactor Physics I  
NES 5410 Nuclear Reactor Engineering  
NES 5620 Nuclear Fuel

# Course Series of Nuclear Science



# Course Series of Beam Technology

*Sophomore*

ESS 2030 、 2040 Engineering Mathematics I & II  
ESS 2330 Electromagnetics I  
ESS 3020 Modern Physics I

*Junior*

ESS 2340 Electromagnetics II  
ESS 3021 Modern Physics II      ESS3022 Modern Physics Lab  
ESS 4050 Principles of photon and particles measurement

*Senior*

ESS 4610 Vacuum Technology      ESS 5880 Applied Optics  
ESS 4030 Nuclear Radiation Detection and Measurement Laboratory  
ESS 5644 Practical Training of Synchrotron Radiation Application  
ESS 5640 Applications of Synchrotron Radiation and Neutron Beamlines

*Graduate*

SLS5641 Introduction to X-ray Optics and Beamline Design  
SLS5643 Accelerator Technology      ESS 5270 High Frequency Electronics  
ESS 5310 Plasma Physics I      ESS 5540 Electron Microscopy I

*Graduate*

ESS5620 Neutron and X-ray Small Angle Scattering  
ESS5644 Applications of Synchrotron X-ray Absorption Spectroscopy  
ESS5271 Microwave Engineering      ESS5240 Principles of Ion Implantation  
NES5220 Radiation Shielding      NES5250 Health Physics