

**Energy: Nuclear Energy**  
**Study Guide**  
**EVPP 111 Lecture - Spring 2004**  
**Dr. Largen**

**Nuclear Energy**

- What is half-life?
- What happens when an atom is "radioactive"?
- What is nuclear fission?
- What is nuclear fusion?
- What is a nuclear chain reaction?
- How does the function of a nuclear reactor compare to that of a fossil-fuel boiler?
- What are control rods, what are they made of, what is their purpose?
- What are the components of the nuclear the fuel cycle?
- How have research and production have typically dealt with radioactive waste materials?
- What has been the consequence of both the Three Mile Island and Chernobyl accidents in terms of public opinion over nuclear reactor safety?
- How many nuclear power plants were under construction in 1996 as compared to the number under construction prior to Chernobyl?
- What is thermal pollution and how does nuclear energy contribute to it?
- What proportion of the heat produced in a nuclear power plant is used to generate electricity and what proportion is wasted?
- What is the "life expectancy" of a nuclear power plant?
- When nuclear power plants reach the end of their "lives", are they demolished or decommissioned?
- What are some of the problems with decommissioning nuclear power plants?
- What are some of the problems associated with the disposal of nuclear waste?
- What are some of the benefits of nuclear energy?
- Does nuclear energy emit carbon dioxide and contribute to global warming?
- Does nuclear energy contribute to acid rain?
- How are the ores that contain radioactive materials obtained?
- What type of nuclear reaction occurs when neutrons from one atom impact and split the nuclei of other atoms?
- What are some of the concerns associated with nuclear energy?