Edexcel International GCSE Physics 4PH1 Learning Plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit: 7 Radioactivity and Particles** | | **Chapter: 25. Fission and Fusion** | | **Hours: 3** |
| Content coverage | Learning outcomes | Resources | Assessment | |
| Section 7: Radioactivity and particles  a) Units  c) Fission and fusion | **7.17** know that nuclear reactions, including fission, fusion and radioactive decay, can be a source of energy  **7.18** understand how a nucleus of U-235 can be split (the process of fission) by collision with a neutron, and that this process releases energy as kinetic energy of the fission products  **7.19** know that the fission of U-235 produces two radioactive daughter nuclei and a small number of neutrons  **7.20** describe how a chain reaction can be set up if the neutrons produced by one fission strike other U-235 nuclei  **7.21** describe the role played by the control rods and moderator in the fission process  **7.22** understand the role of shielding around a nuclear reactor  **7.23** explain the difference between nuclear fusion and nuclear fission  **7.24** describe nuclear fusion as the creation of larger nuclei resulting in a loss of mass from smaller nuclei, accompanied by a release of energy  **7.25** know that fusion is the energy source for stars  **7.26** explain why nuclear fusion does not happen at low temperatures and pressures, due to electrostatic repulsion of protons | Video and Powerpoint:  Section 4 Lesson 4 – Fission and fusion  Textbook pages:  Page 250 – Nuclear reactions as a source of energy  Page 250 – Nuclear fission  Page 253 – Nuclear fusion | Page 254  Questions (1) to (5)  Pages 255 – 257  End of Unit Questions (1) to (6)  Chapter 25 Textbook Answers (PDF)  Chapter 25 Answers to End of Unit Questions (PDF)  Chapter 25 - exam question - pdf  Chapter 25 - exam question mark scheme – pdf  Chapter 25 - Talking paper video | |

Videos – [www.igcsesciencecourses.com](http://www.igcsesciencecourses.com)

Textbook Ref: Edexcel International GCSE (9-1) Physics Student Book - Pearson (Arnold, Johnson, Woolley))