



Ecole Internationale Provence-Alpes-Côte d'Azur



Forward Planning

Long-Term Semester Planning

Academic Year: 2020-2021

Class: S7
Subject: Physics
Teacher: J.RIEHL
No. Students: 11

Curriculum – Long-Term Planning 2020-2021

Dates	Learning objectives	Learning outcomes / Assessment	Key Competences	Activities / Resources
<p>September - October</p>	<p>F. <u>FIELD PHYSICS</u></p> <p>F1. MOTION AND ENERGY IN THE INVERSE SQUARE FIELD</p> <p>1.1 The gravitational inverse square field and energies</p> <p>1.2 The escape velocity</p> <p>1.3 The circular orbital motion</p> <p>1.4 Energy in the radial electric field</p> <p>F2. MOTION AND ENERGY IN THE UNIFORM FIELD</p> <p>2.1 The uniform gravitational field</p> <p>2.2 The uniform electric field</p> <p>2.3 The uniform magnetic field</p>	<p>Homework : exercises given regularly</p> <p>Homework : a long one (similar to a bac question) is given and marked every 2 weeks and during the vacations to revise studied topics</p> <p>Tests : every 3 weeks approximately, a 1P test</p>	<p>1. Literacy (reading and writing)</p> <p>3. Mathematics, Science, Technology and Engineering</p> <p>5. Personal, Social and Learning to Learn</p> <p>8. Cultural Awareness and Expression</p>	<p>Textbook : Physics for the IB Diploma / K.A.Tsokos / Cambridge University Press 2010</p> <p>Extra paperwork from other textbooks or sources may be given sometimes</p>

	<p>W. WAVES</p> <p>W1. PROGRESSIVE WAVES</p> <p>1.1 Definitions 1.2. Sinusoidal waves</p> <p>W2. BEHAVIOUR</p> <p>2.1 Huyghens' principle 2.2 Diffraction</p>		<p>1. Literacy (reading and writing)</p> <p>3. Mathematics, Science, Technology and Engineering</p> <p>5. Personal, Social and Learning to Learn</p>	
Vacances de Toussaint				
November - December	<p>2.1 Refraction 2.2 Reflection 2.3 Interference : standing waves 2.4 Interference : double source interference</p>		<p>1. Literacy (reading and writing)</p> <p>3. Mathematics, Science, Technology and Engineering</p> <p>4. Digital</p> <p>5. Personal, Social and Learning to Learn</p>	
Christmas holidays				
January	<p>2.5 Interference : the diffraction grating 2.6 The Doppler effect</p> <p><i>Revisions Prebac</i></p>		<p>1. Literacy (reading and writing)</p> <p>3. Mathematics, Science, Technology and Engineering</p> <p>4. Digital</p> <p>5. Personal, Social and Learning to Learn</p>	

Prebac				
February	<p><u>D. THE DUAL CHARACTER OF MATTER AND RADIATION</u></p> <p>D1. LIGHT AND RADIATIONS</p> <p>1.1 The photoelectric effect 1.2 Measurement of Planck's constant 1.3 Momentum of light</p> <p>D2. WAVE BEHAVIOUR OF PARTICLES</p> <p>2.1 Diffraction of particles 2.2 De Broglie waves 2.3 Applications</p>		<p>1. Literacy (reading and writing)</p> <p>3. Mathematics, Science, Technology and Engineering</p> <p>4. Digital</p> <p>5. Personal, Social and Learning to Learn</p> <p>8. Cultural Awareness and Expression</p>	
Winter holidays				
March - April	<p><u>A. ATOMIC PHYSICS</u></p> <p>1. Series in line spectra 2. Eigenvalues for the hydrogen atom 3. Wave mechanics</p> <p><u>N. NUCLEAR PHYSICS</u></p> <p>N1. RADIOACTIVITY : THE NUCLEAR REACTIONS</p> <p>1.1 Elementary particles 1.2 Stable and unstable nuclei</p>		<p>1. Literacy (reading and writing)</p> <p>3. Mathematics, Science, Technology and Engineering</p> <p>5. Personal, Social and Learning to Learn</p> <p>6. Citizenship</p> <p>8. Cultural Awareness and Expression</p>	

	<p>1.3 Conservation laws 1.4 The different types of radioactive decays 1.5 Radioactive series 1.6 Energy and radioactivity : mass – energy equivalence ; mass defect and binding energy ; binding energy per nucleon ; energy liberated 1.7 Artificial radioactivity</p> <p>N2. FISSION AND FUSION 2.1 Fission : Principles and reactors Fusion</p>		<ol style="list-style-type: none"> 1. Literacy (reading and writing) 3. Mathematics, Science, Technology and Engineering 5. Personal, Social and Learning to Learn 6. Citizenship 8. Cultural Awareness and Expression 	
Spring holidays				
<p>May - June</p>	<p>N3. RADIOACTIVE DECAY 3.1 Definitions 3.2 Exponential decay 3.3 The half-life</p> <p>REVISIONS</p>		<ol style="list-style-type: none"> 1. Literacy (reading and writing) 3. Mathematics, Science, Technology and Engineering 4. Digital 5. Personal, Social and Learning to Learn 6. Citizenship 8. Cultural Awareness and Expression 	



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