MYP 4 Course overview 2019/2020 ***CHEMISTRY***

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| **Unit title** | **Key concept** | **Related concepts** | **Global context** | **Statement inquiry** | **Objectives** | **Assessment tasks** | **ATL skills** | **Content** |
| Unit 1  ***Chemical concepts***  September-October-November | Relationships Connections | Balance  Models  Form  Patterns | personal and cultural expression  dimensions of time and space | Atoms in different combination will define properties and usage of specific matter.  Physical and chemical properties of different elements are defined by the position of element in PTE and show a certain pattern of change | A i,ii,iii  C i,ii,iii,iv,v  D i,ii,iii,iv | **C**- practical work on physical and chemical properties of matter; *determination of melting point of unknown compound*  *Investigating chemical properties of metals and non-metals*  **D**- essay on radioisotopes  **A**- End-of-unit or chapter tests | ***Thinking***: critical thinking, creative thinking, transfer  ***Self-management;*** reflection, organization  ***Communication***:  ***Research***; information literacy  ***Social***; collaboration | Students will become aware of the historical development of atomic theory and discovery of different matter  Students will reflect on how did discovery of different atomic models and different matter impact our life  Students will investigate properties of different matter |
| Unit 2  ***Calculations in chemistry***  December –January-February- March | Global interactions | Interaction | scientific and technical innovation | Chemical reactions and relationships between compounds in balanced reactions will define and limit some of biological and industrial processes | A i,ii,iii  B i,ii,iii,iv  C i,ii,iii,iv,v  D i,ii,iii,iv | **C**- practical work on determination of molar mass of CO2  **B**- design of an investigation of determination of percentage of water in hydrated salt  **D**- written piece of work on Contact process  **A**- End-of-unit or chapter tests | ***Thinking***: critical thinking, creative thinking, transfer  ***Self-management;*** reflection, organization  ***Communication***:  ***Research***; information literacy  ***Social***; collaboration | Students will become aware of connection of calculations in chemistry and very important industrial processes.  Students will reflect on how discovery of relationship between compounds in balanced reactions impact our life  Students will plan how to investigate different factors that will affect the reaction yield. |
| Unit 3  **Bonding**  April- May-June | Connections | Models | Orientation in time and space | Different physical and chemical properties of elements and compounds are defined by different bonding present. | A i,ii,iii  B i,ii,iii,iv  D i,ii,iii,iv | **B**- design an investigation on solubility of different compounds in water  **D**- written piece of work on physical and chemical properties of water  **A**- End-of-unit or chapter tests  **CAS**-investigating quality of tap water | ***Thinking***: critical thinking, creative thinking, transfer  ***Research***; information literacy, media literacy  ***Self-management;*** reflection, organization  ***Communication***:  ***Social***; collaboration | Students will become aware of the different physical and chemical properties of compounds related with the presence of different type of bonding  Students will reflect on how some of specific type of bonding impact our life  Students will plan how to investigate properties of water |

MYP 5 Course overview 2019/2020

***CHEMISTRY***

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| **Unit title** | **Key concept** | **Related concepts** | **Global context** | **Statement inquiry** | **Objectives** | **Assessment tasks** | **ATL skills** | **Content** |
| Unit 1  ***Chemical kinetics and equilibrium***    September-October-November 2015 | Change | Consequences | personal and cultural expression | By knowing the effect of different factors on reaction rate and position of equilibrium we can decrease expenses of industrial productions of various things and increase its yield and at the same time increase the quality of our life. | A i,ii,iii  B i,ii,iii,iv  C i,ii,iii,iv,v | **C**- practical work on measuring the value of reaction rate  **B**- investigation of the factors that affect the rate of an reaction or the position of equilibrium  **A**- End-of-unit or chapter tests | ***Thinking***: critical thinking, creative thinking, transfer  ***Self-management;*** reflection, organization  ***Communication***:  ***Research***; information literacy  ***Social***; collaboration | Students will become aware of the importance and strengths and limitations of industrial production of ammonia and sulphuric acid  Students will reflect on different factors that influence on the chemical kinetics and equilibrium  Students will plan how to investigate  different factors that influence on reaction rate and equilibrium |
| Unit 2  **Acids and bases**  December –January –February 2016 | Systems | Environment | Globalization and sustainability | Corrosive acid decomposition is caused by both humans and nature and humans are responsible for two-thirds of this pollution, so it appears to follow that humans should be able to minimize it. | A i,ii,iii  B i,ii,iii,iv  C i,ii,iii,iv,v  D i,ii,iii,iv | **D**- Written piece of work on Acid decomposition  **B**- design an investigation on acidity of different solutions  **C**- practical work on obtaining the pH curve  **A**- End-of-unit or chapter tests  **CAS**-investigating the level of acidity of rain water | ***Thinking***: critical thinking, creative thinking, transfer  ***Self-management;*** reflection, organization  ***Communication***:  ***Research***; information literacy  ***Social***; collaboration | Students will become aware of the danger of acidic and basic compounds to environment  Students will reflect on the factors that can influence on the production of acid rain and different ways to prevent acid decomposition  Students will plan how to  investigate the level of acidity of Zagreb’s rain and compare it with the results of other capitals |
| Unit 3  ***Electrochemistry***  February-March-April | Change | Transformation | Scientific and technical innovation | How chemical energy is converted into electrical energy? What is the danger of leaking of batteries and why the proper batteries storage is very important? | A i,ii,iii  C i,ii,iii,iv,v  D i,ii,iii,iv | **C**- Practical work on galvanic cells  **D**- written piece of work on Batteries  **A**- End-of-unit or chapter tests  **CAS**-battery recycle | ***Thinking***: critical thinking, creative thinking, transfer  ***Self-management;*** reflection, organization  ***Communication***:  ***Research***; information literacy  ***Social***; collaboration | Students will become aware of the composition of different types of batteries  Students will reflect on the danger of some of the materials present in the batteries and the importance of proper batteries storage.  Students will plan how to investigate properties of batteries |
| Unit 4  **Organic chemistry**  April-May-June | Global interactions | Environment | Globalization and sustainability | What is the nature around us made of?  What is the importance of organic matter for humans? | A i,ii,iii  B i,ii,iii,iv  D i,ii,iii,iv | **D**- Essay on Fossil fuel  **B**- design of an investigation of physical and chemical properties of organic matter  **A**- End-of-unit or chapter tests | ***Thinking***: critical thinking, creative thinking, transfer  ***Self-management;*** reflection, organization  ***Communication***:  ***Research***; information literacy | Students will become aware of the danger of some of the products of organic matter combustion  Students will reflect on how organic compounds and products of their combustion impact our life.  Students will plan how to investigate physical and chemical properties of organic matter |