

## **Suggested research topics**

### **Winter semester of the academic year 2019/2020**

<b>Course name in Arabic: الكيمياء الحيوية</b>
<b>Course name in English: Biochemistry</b>
<b>Professor Dr.: Ibrahim Elsayed Helmy</b>  <b>Dr. Heba Abd Elghany Sahyon</b>
<b>Level: First Level</b>
<b>Department: Fish processing and Biotechnology</b>

No.	Research title	Research items
1	Carbohydrates health benefits and risks	1- What are carbohydrate? 2- Classification 3- Their advantage to health 4- Their disadvantage to health 5- Diseases from carbs consumption
2	Basic understanding of sugars as a source of energy	1- What are simple and complicated sugars? 2- What are the sugars benefit? 3- Is the consumption of complicated sugars good for health? 4- How to detect sugars in the laboratory with equations?
3	Protein denaturation	1- Protein definition 2- Classification 3- Denaturation definition 4- Types of denaturation 5- Benefits of denatured proteins to our body
4	Protein and diet	1- Amino acids (AA) definition 2- General characteristics of AA 3- Suitable amount for health 4- Advantage and disadvantage of high AA intake 5- AA related to some diseases
5	Hemoglobin	1- Definition 2- Function 3- Structure 4- Some diseases related to misleading in hemoglobin structure
6	Multiple roles of dietary proteins	1- Protein definition 2- Structure 3- Function 4- Different roles in body 5- Dietary protein and body weight regulation

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7	Protein function and structure	1- Primary structure of protein 2- Secondary structure of protein 3- Tertiary structure of protein 4- Quaternary structure of protein 5- Globular and fibrous proteins 6- Proteins function
8	Translipids	1- Lipids definition 2- Function of dietary lipids 3- Translipids definition 4- How to avoid it 5- Translipids related to some diseases
9	Lipoproteins in our body	1- Lipoprotein definition 2- Structure 3- Function 4- Lipoprotein and health benefits 5- Lipoprotein related to atherosclerosis
10	Fatty acids	1- Definition 2- Structure 3- Classification 4- Benefits to our body
11	Vitamin supplementation in health and disease	1- Vitamins definition 2- Classification 3- Benefits to our body 4- Vitamin deficiency 5- Natural and synthetic sources, Which is better?
12	Enzymes and its applications	1- Definition 2- Enzymes and catalyst 3- Specificity 4- Application in medicine 5- Application in industry
13	Nucleotides and DNA	1- Definition 2- Nitrogen bases 3- Nucleotides and nucleosides 4- Function of nucleotide 5- Primary, secondary and tertiary structure of DNA 6- Gene and genome

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