**Module Description**

 **Module title:** Molecular Biology– practical part.

**Module code:** BCH 361

**Year:** 1443 H (2021) – First semester.

**Module objectives:**

* Practical knowledge in the molecular biology field.
* Understand the principles behind basics molecular biology techniques.
* Working in basic experiments of molecular biology lab.

**Mark distribution:**

Total mark is 30:

* 5 marks for quizzes.
* 5 marks for analysis sheet.
* 3 marks for homework/ lab performance.
* 5 marks for Lab Report.
* 12 marks for final exam.

**-Module experiments:**

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| **NO.** | **Experiment Title** | **Date** | **Quiz** |
| **0**  | Introduction to Molecular Biology.  | 2 Sep 2021 | - |
| **1**  | Preparation of Genomic DNA from Rat Blood (Manual). | 9 Sep 2021 | Quiz # 1 |
| **2**  | Extraction of RNA from Rat Blood (Kit). | 16 Sep 2021 |
| **3**  | Characterization of DNA by Spectrophotometric Assay and Melting Temperature (tm). | 30 Sep 2021 | Quiz # 2 |
| **4**  | Agarose Gel Electrophoresis (AGE). | 7 Oct 2021 |
| **Report (1) submission (14 Oct 2021) \_** Including lab# 1, 2, 3, and 4 |
| **5**  | cDNA Synthesis. | 14 Oct 2021 | Quiz # 3 |
| **6**  | Polymerase Chain Reaction (PCR) and Primer Design.  | 21 Oct 2021 | Quiz # 4 |
| **7**  | PCR - Optimization of Annealing Temperature. | 28 Oct 2021 | Quiz # 5 |
| **8**  | PCR Troubleshooting.  | 11 Nov 2021 |
| **Report (2) submission (18 Nov 2021) \_** Including lab# 6, 7, and 8 |
| **9**  | Sanger Sequencing. | 18 Nov 2021 | Quiz # 6 |
| **Final Exam ( 16 Dec 2020)** |