Université Mohamed Khider de Biskra
Biologie Department
2025/2026
Module: Math and stat **Licence 1**

Worksheet N°3: (Part II)

Exercise 1 *:* The census of the 40 employees of a company was carried out by recording the hourly wages receive :
34 - 36 - 45 - 62 - 37 - 43 - 42 - 66 - 31 - 51 - 31 - 61 - 63 - 47 - 67 - 52 - 43 - 45 - 56 - 41
60 -36 - 48 - 49 - 65 - 35 - 42 - 43 - 42 - 51 - 55 - 61 - 57 - 46 - 47 - 47 - 54 - 61 - 66 - 33.

1. By applying the Sturges'rule ($NC \simeq 1 + 3,3 \log N$), calculate the number of classes(NC) required to make the classifications in a continuous statistical series.
2. Calculate the amplitude for each class.
3. Construct the table with frequency (calculate relative frequency, cumulative frequency.)
4. Represent this distribution using the appropriate diagram.

Exercise 2 *:* The rate of oxygen consumed by a species of limpet, in salt water presented on the table below:

Rate of oxygen	6	7	8	9	10	12
Frequency	7	5	4	10	6	3

1. Determine the variable studied and its nature.
2. Determine the sample size.
3. Represent this distribution using the appropriate diagram.
4. Give the cumulative function of frequencies and draw its graph.
5. Determine the following measures of central tendency: mean, mode, median, Q_1 and Q_3.

Exercise 3 *:* Given the following series of data on the distribution of 60 farms according to their surface area in hectares:

Surface area	[10,20[	[20,30[	[30,40[	[40,50[	[50,60[	[60,70[
Frequency	12	8	15	14	7	4

1. Represent this distribution using the appropriate diagram.
2. Represent the graph of the cumulative frequencies less than and more than type.
3. Determine the statistics of central tendency (graphically and by calculation)
4. Calculate the statistics measures of variation: variation, standard deviation,range.

Exercise 4 *:* The following table shows the glycemia (mg/dL) of 500 older adults grouped in 5 classes having the same width:

Class	n_i	Middle point x_i	$F_i^{\nearrow}$	$n_i x_i$	$n_i x_i^2$
$[65, 75[$	75				
$[75, 85[$	100				
$[85, 95[$	150				
$[95, 105[$	125				
$[105, 115[$	50				

1. Determine the sample size and complete the table.
2. Draw the histogram of data with frequency polygon.
3. Calculate mean, median, mode , variance and standard deviation.
4. Calculate Coefficient of Variation.