**Syllabus for the Proof of Admission to Studies of Degree
Syllabus of Math (Faculty of Sciences)**

A. Sense numeric

1. Sense of the operations
   - Addition and product climb of vectors: properties and representations.
   - Strategies for operating with real numbers and vectors: mental calculation or written in simple cases and with technological tools in casesfurther complicated.
2. Relations
   - The numbers complexes as solutions of equations polynomial thatlack of roots royal.
   - Set of vectors: structure, comprehension and properties.

B. Sense of the extent

1. Measurement
   - Calculation of lengths and measures angular: use of the trigonometry.
   - The probability as extent of the uncertainty associated to phenomena random.
2. Change
   - Boundaries: estimate and calculation to leave of a board, a graphic either a expressionalgebraic.
   - Continuity of functions: application of boundaries in he study of thecontinuity.
   - Derivative of a function: definition to leave of the study of the change indifferent contexts.

C. Sense space

1. Shapes geometric of two dimensions
   - Objects geometric of two dimensions: analysis of the properties and determination of their attributes.
   - Resolution of issues relative to objects geometric in he flat represented with coordinates Cartesian.
2. Location and systems of representation
   - Relations of objects geometric in he flat: representation and explorationwith aid of tools digital.
   - Expressions algebraic of objects geometric: selection of the further adequate in function of the situation to solve.

3. Display, reasoning and modeling geometric
   - Representation of objects geometric in he flat through toolsdigital.
   - Models mathematicians (geometric, algebraic, graphs...) in the resolutionof problems in the plane. Connections with other disciplines and areas of interest.
   - Conjectures geometric in he flat: validation by half of the deduction andthe demonstration of theorems.
   - Modeling of the position and he motion of a object in he flatthrough vectors.

D. Sense algebraic

1. Patterns
   - Generalization of patterns in situations simple.
2. Model mathematical
   - Relations quantitative in situations simple: strategies of IDand determination of the class either classes of functions that they can model them.
   - Equations, inequalities and systems: modeling of situations invarious contexts.
3. Equality and inequality
   - Resolution of equations, inequalities and systems of equations and inequalities No linear in different contexts.
4. Relations and functions
   - Analysis, representation graph and interpretation of relations through tools technological.
   - Properties of the different classes of functions, including, polynomial, exponential, irrational, simple rational, logarithmic, trigonometric and to pieces: comprehension and comparison.
   - Algebra symbolic in the representation and explanation of relations math of the science and the technology.
5. Thought computational
   - Formulation, resolution and analysis of issues of the life everyday and of thescience and the technology using tools either programs suitable.
   - Comparison of algorithms alternative for he same problem through he reasoning logical.

E. Sense stochastic

1. Organization and analysis of data
   - Organization of data from two-dimensional variables: distribution joint and distributions marginal and conditioned. Analysis ofthe dependence statistics.
   - Study of the relationship between two variables using linear regression and quadratic: assessment graph of the relevance of the adjustment. Difference betweencorrelation and causality.
   - Linear correlation and determination coefficients: quantification of the relationship linear, prediction and assessment of his reliability in contexts scientistsand technological.
   - Calculator, sheet of calculation either software specific in he analysis of datastatisticians.
2. Uncertainty
   - Estimate of the probability to leave of the concept of frequency relative.
   - Calculating probabilities in simple experiments: Laplace's rule in situations of equiprobability and in combination with different techniques ofcount.
3. Inference
   - Analysis of samples one-dimensional and two-dimensional with tools technological with he end of issue trials and take decisions.