

Saulo Goltinho Technical School, Brasília: Brief History of the Only Meteorology Course in the Central-Western Region



The Meteorology program of the Saulo Goltinho Technical School in Brasília, with emphasis on the Environment field, was the third in its category in Brazil and the first Meteorology program in the Central-Western region. Its creation was motivated by the demand for qualified professionals in Meteorology, a need the country's Meteorology community identified years ago and debated in many Meteorology conferences and in technical meetings with the directors of the National Institute of Meteorology (INMET) in Brasília, Federal District, and further detected by the area of Human Resources of the Brazilian Airport Infra-Structure Company (INFRAERO) in Brasília, Federal District. Even then the course was short lived, having been in existence for only four years, from 2003 to 2007.

Brasília's Technical School

Brasília's Saulo Goltinho Technical School (ETB) is located in the city of Taguatinga, in the Federal District.

Technical courses in the ETB are free of charge and last on average four semesters. To enroll in one of the courses, candidates must provide proof of conclusion of the basic education cycle or its equivalent.



Façade of the Meteorology Building.

Characteristics and Capability Building of the Meteorology Course Faculty

The course's pedagogical approach was inspired by constructivist theories of learning where knowledge is influenced by individual experience. The qualifications required for teaching the diverse curricular components allowed for faculty with graduate and undergraduate degrees, as well as technologists and technicians; thus besides formal education, solid professional experience was also valued.

The Secretary of Education's "Program for Training Trainers" and "Program for Workplace Professional Development" provided faculty pedagogical training and development as necessary.

The "Program for Training Trainers" aimed at professional development in the field of Education. It intended to serve the requests and expectations of educators, thus contributing to sharpen competencies of those



who participated in the mission of educating for work and citizenship in ETB, or in businesses or in the community, allowing for the development of managerial, programming, implementation and assessment skills directly or indirectly relevant to the teaching and learning processes.

The program was structured along three pathways: the basic competencies pathway, which aimed at understanding questions related to education and work; the competencies in Education pathway, focusing on understanding educational processes generally speaking, with special attention to professional education; and the management pathway, a modern view of human resource management and business competitiveness.

In June, 2004, examinations took place for hiring professors in Synoptic Meteorology (1 position); Agricultural Meteorology and Environment (1 position); and, Satellite and Radar Meteorology (1 position) for the start of classes in the first semester of 2006.

Student Body

The program remained active, that is, it opened its selective admissions process for enrollment from the second semester of 2003 through the second semester of 2005, five semesters.

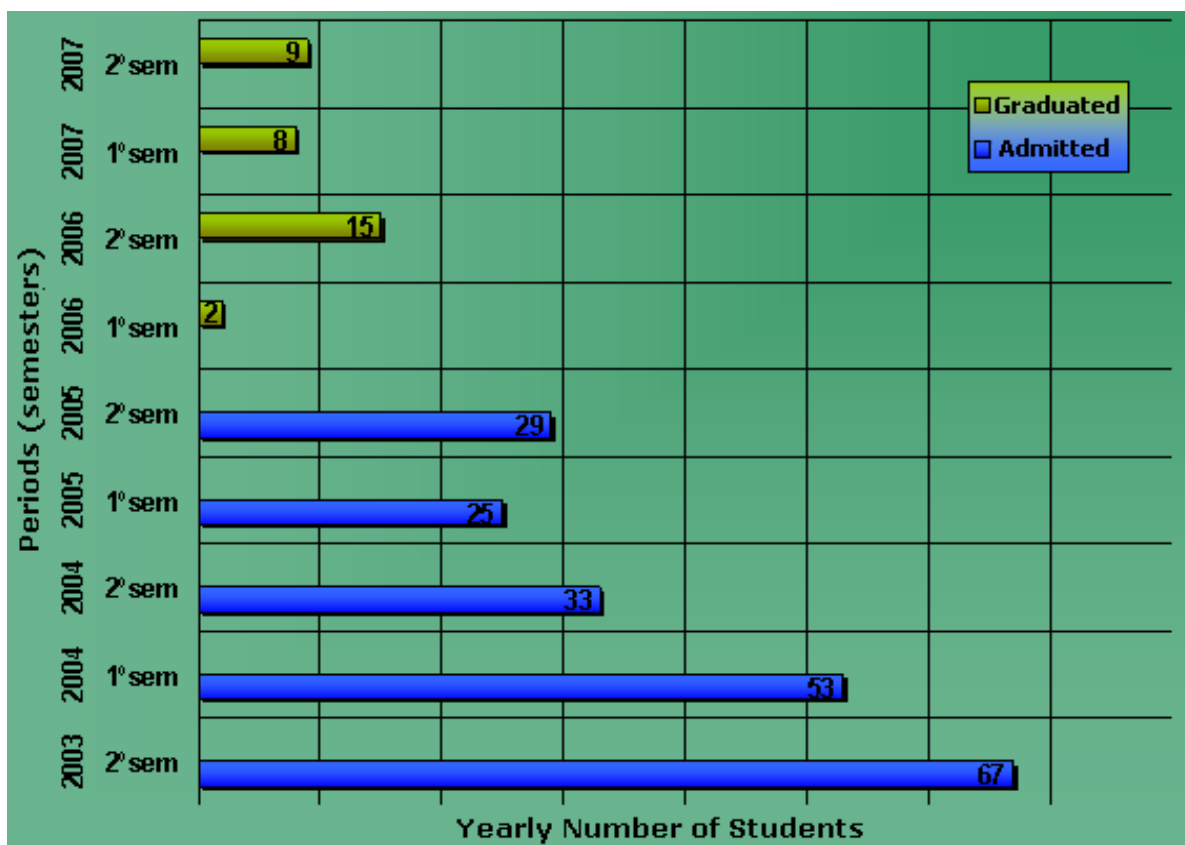
Each period offered 60 placements, 30 in the morning and 30 in the afternoon. During this time, a total of 207 students were tested for admissions.

The program remained opened until all students graduated during the second semester of 2007, a total of 34 professionals.

Student Development

Among other responsibilities, ETB's Meteorology program aimed at developing technicians capable of operating meteorological stations, undertaking surface observations, and constructing meteorological charts and diagrams.

The program was developed to be taught in three modules along with supervised internships required as a complementary activity, as indicated in the following chart.





Total Number of Students Admitted and Graduated from ETB-DF Meteorology Course.




CURRICULUM STRUCTURE

The program was planned for three modules to certify professionals in two categories according to the classification of the World Meteorological Organization (WMO). At the end of the first module, Water Module, students were certified to take positions as *Meteorology Technician Assistant Class IV* of the WMO. To be certified as Meteorology Technician, the completion of the second module, Soil Module, was required, for a total of 1,020 hours in three semesters. Both titles, with emphasis on the Environment, were valid throughout the country and Technicians had the right to be registered at the Regional Council of Engineering and Architecture (CREA).

Basic Module/Air Module 340 credit hours General Meteorology Electricity I Digital Electronics Applied Informatics Technical English Laboratory I	
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Module I/Water Module 340 credit hours Certification: Meteorology Technician Assistant Class IV –World Meteorological Organization Climatology and Statistics Linear Electronics Hydrometeorology and Environment Physical and Dynamic Meteorology Observational Meteorology and Instrumental I Organization and Norms/ Professional Ethics	
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Module II/Soil Module 340 credit hours Certification: Meteorology Technician Class III – World Meteorological Organization Agrometeorology and Environment Aeronautical Meteorology Observational Meteorology and Instrumental II Satellite and Radar Meteorology Numerical Weather Prediction Synoptic Meteorology	
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Beyond course requirements, students were expected to complete 360 hours of supervised internship, with the objectives of consolidating knowledge and skills acquired, and of understanding the utility and value of theoretical and practical concepts learned in school as applied to the real world of work.

Internships were offered from Module I on, and supervised by a group of internship coordinators and Meteorology-certified instructors. It is important to stress that it was clear to program planners that professional internship and practice were not to be regarded as just a situation or a distant moment in the curriculum but as an integral part of a teaching methodology aimed at contextualizing and putting into action the learning process.

Assessment Methods

Teaching and learning assessment, understood as a continuous and systematic process of obtaining information about, analyzing, and interpreting educational activities, must aid the practice of all involved, and aim at improving performance.

The assessment process was grounded on student performance through observations and reporting on individual students by faculty; the presentation of individual portfolios; solving problems elaborated by faculty or by students themselves; and individual business, pedagogical or community-based projects emphasizing the autonomy of the learners.

Moreover, the participation of students in events such as lectures, science fairs, congresses, conferences or symposia previously defined by faculty, was also part of the assessment process, complementing the development of the learner.



A student was considered a graduate when at the end of each qualifying module he or she had acquired the defined fundamental competencies and had attended at least 75% or more of the classes in each module or of the course total.

Faculty monitored attendance systematically to alert students of gaps in learning due to absence. These needed to be filled so that ultimately students could achieve educational success.



Final Considerations

The elements of ETB's Meteorology program planning demonstrate a solid curricular structure capable of qualifying professionals not only in questions related to the understanding of physical processes of the atmosphere and the handling and operation of meteorological instruments, but also those capable of demonstrating a holistic and integrated view of the environment.

This demonstrates that there existed serious preoccupation and commitment on the part of curriculum developers to structure a Meteorology program according to new market perspectives. At the very least it is distressing that such a valuable and innovative educational project did not receive the needed support for its continuation.

We are thankful for the special collaboration:

- Meteorologist Marcos Alberto Andrade, Manager of Aeronautic Meteorology of INFRAERO, founder y first coordinator of the Course.
- Professor Raimundo Nonato Alves Pamplona, Vice-Director of the ETB-DF.
- Francimeire Bezerra de Castro, Education Assistant of the Secretary of Technical Courses of the ETB-DF.