PATAGONIAN FLORA IN AN EVOLUTIONARY CONTEXT

Objective:

- The general objective of this course is to provide students with an overview of the most common native flora from each phytogeographical region of Patagonia, considering paleontological evidence, the evolution of plant structures, and their adaptive significance.

Instructors: Drs. Cynthia González and Magdalena Llorens

Academic Coordinator: Lic. Anabel Calderón

Dates: August 17 – September 6, 2026

- Six online sessions: August 17, 20, 24, 27, 31, and September 3 (6 pm to 9 pm)
- Practical session: September 5 (9 am to 4 pm)
- Course fieldtrip: September 6 (9 am to 3 pm)

Workload: 30 hours

Language: Spanish

Academic Accreditation: This graduate course is endorsed by the National University of Patagonia San Juan Bosco (Resolution CDFCNyCS No. 1076/2026).

Venue: Biology Laboratory, Classroom Building, 25 9 de Julio Street, National University of Patagonia San Juan Bosco, Trelew Campus (Chubut, Argentina).

Eligibility: Applicants must hold a degree in Biological Sciences, Paleontology, Biodiversity Sciences, Forestry Engineering, Agronomy, Ecology, or related disciplines.

> *Note*: Registration to the 19th Argentine Symposium on Paleobotany and Palynology and the 58th Annual Meeting of AASP–The Palynological Society is not required to participate in this course.

Course Fees:

- Graduate students: ARS 80,000 (USD 55 for participants from foreign institutions)

Registration deadline: July 31, 2026

Information and Registration: danabelcalderon@gmail.com (Anabel Calderón)

Evaluation and Completion Requirements::

- Attend at least 80% of the online sessions.
- Attend the practical session.
- Participate in the field trip, during which the oral assessment will take place.

Syllabus:

Unit 1. Paleophytogeography and Present-Day Phytogeography of Patagonia

- Major phytogeographical kingdoms of Patagonia. Main botanical families and representative species of the phytogeographical domains, provinces, and districts of Patagonia.

Unit 2. Seedless Vascular Plants

- Diagnostic characters, biological significance, evolution, and phylogenetic relationships.

  - Division Lycopodiophyta: Selaginellales, Lycopodiales, Isoetales.
  - Division Monilophyta:
    - Eusporangiate orders: Equisetales, Ophioglossales, Marattiales.
    - Leptosporangiate orders: Cyatheales, Hymenophyllales, Polypodiales, Salviniales.

- Protected species and ecologically important groups.

Unit 3. Seed Plants: Gymnosperms

- Diagnostic characters, evolution, and phylogenetic relationships.

  - Progymnosperms, pteridosperms, and other extinct groups.
  - Living gymnosperm divisions:
    - Gnetophyta: Ephedrales
    - Coniferophyta: Cupressales (Cupressaceae) and Araucariales (Araucariaceae, Podocarpaceae)

- Protected species and groups of ecological and economic importance.

Unit 4. Flowering Plants: Angiosperms

- Diagnostic characters, evolution, and phylogenetic relationships.

  - Magnoliids: Diagnostic characters.
    - Canellales: Winteraceae.
    - Laurales: Lauraceae.
  - Monocots: Diagnostic characters.
    - Poales: Bromeliaceae, Juncaceae, Cyperaceae, Typhaceae, Poaceae.
    - Asparagales: Amaryllidaceae, Iridaceae, Orchidaceae.
    - Liliales: Alstroemeriaceae, Corsiaceae.
    - Alismatales: Araceae, Alismataceae.

Unit 5. Basal Eudicots and Fabids–Malvids

- Diagnostic characters.

  - Basal Eudicots
    - Ranunculales: Ranunculaceae, Berberidaceae.
    - Proteales: Proteaceae.
    - Gunnerales: Gunneraceae.
  - Fabids
    - Fabales: Fabaceae.
    - Rosales: Rosaceae, Rhamnaceae.

    - Fagales: Nothofagaceae.
    - Cucurbitales: Apodanthaceae.
    - Malpighiales: Euphorbiaceae, Salicaceae, Violaceae.
    - Zygophyllales: Zygophyllaceae.
- Malvids
    - Myrtales: Myrtaceae, Onagraceae.
    - Malvales: Malvaceae.
    - Brassicales: Brassicaceae.
    - Sapindales: Anacardiaceae.

Unit 6. Superasterids

- Santalales: Schoepfiaceae, Misodendraceae.
- Caryophyllales: Caryophyllaceae, Amaranthaceae (including Chenopodiaceae), Cactaceae, Halophytaceae, Aizoaceae.
- Campanulids
    - Asterales: Asteraceae, Campanulaceae (including Lobeliaceae), Calyceraceae.
    - Escalloniales: Escalloniaceae.
    - Apiales: Apiaceae.
- Lamiids
    - Solanales: Solanaceae.
    - Lamiales: Lamiaceae, Oleaceae, Plantaginaceae, Scrophulariaceae (including Buddlejaceae), Verbenaceae, Calceolariaceae.
    - Gentianales: Apocynaceae, Rubiaceae.
    - Boraginales: Boraginaceae.

- Protected species and groups of ecological importance.