COURSES IN ENGLISH AT PUC-Rio

The courses have a content based on different areas such as culture, literature, business, design, civilization, history and logistics among others.
Disciplines in English are not necessarily offered every semester. These courses are subject to academic planning.

CCCI

Study in English at PUC-Rio

Architecture
Business
Chemical Engineering
Communication
Desing
Economics
Entrepreneurship
History
Industrial Engineering
International Relations
Letters
Mathematics
Mechanical Engineering
Philosophy
Psychology
Sociology

Architecture

ARQ 9113 - Special Topics I (3 credits)
Critical Studies Of Brazilian Architecture

Native architecture in Brazil and in its neighboring countries. The advent of Portuguese and Spanish colonizers in Latin America. The influx of Portuguese building technology. The effects of African slavery. The French missionaries. The contributions of German and Italian immigration. Technical transformations: industrialization and the demand for artisanal continuity. Lucio Costa and critical regionalism. The triumph of ferroconcrete and its role in Brazilian architecture on the hands of Oscar Niemeyer, Affonso Reidy, among many others. The rise of Brasilia and the development of political architectural expressions. Tension between ethical concerns and aesthetics: Artigas, Mendes da Rocha, Lina Bo Bardi and the School of São Paulo. Analogies between Art and Architecture in Brazil. Architecture and landscape: Burle-Marx's legacy. Social Architectural dilemma: the swamps and the lack of mass-housing.

Business

ADM 2467 – ADM 2467 – Tópicos Especiais de Estratégia: Strategy and Innovation

Central concepts and types of innovation. Innovation process and technological catch-up: differences between developed and emerging countries. Open innovation. Factors influencing innovation, dynamic capabilities and absorptive capacity. The role of markets and clients. Organizational innovation and business model innovation. The role of innovation in sustainability and economic development.

ADM 2670 - Tópicos Especiais: Empirical Corporate Finance and Governance

Central concepts and types of innovation. Innovation process and technological catch-up: differences between developed and emerging countries. Open innovation. Factors influencing innovation, dynamic capabilities and absorptive capacity. The role of markets and clients. Organizational innovation and business model innovation. The role of innovation in sustainability and economic development

ADM 2576 - Tópicos Especiais: International Marketing

What is leadership? Conceptualizing leadership and differentiating leadership from management and entrepreneurship. Why do we need leadership? Understanding leadership and its challenges in today´s world. The leader: traits and skills relevant to leadership; gender and leadership. The followers: the role of followers; challenges for their engagement. The relationship: leader-follower dynamics and the nature of their exchanges. The leadership environment: context, culture and change. What is good leadership? Leadership effectiveness and morality.

Business

ADM 1588 – Tópicos Especiais Em Estratégia I – Internacional Business

The aim of this International Business Course is to provide students with understanding of the international growth and development processes of firms. For that purpose, the course draws on theories in the fields of International Business (IB), comprising the process of internationalization and the impact of internationalization on the performance of companies. It also aims to integrate theory and practice, through case studies and class activities.

The focus of this seminar will be to analyze the international issues facing the companies arounf the world, and develop a set of management skills to be applied in the global context.

ADM 9982 – Customer Relationship and Database Marketing

Basic concepts of CRM and Database Marketing. Trust. Relationship Marketing implementations. Customer identification and data gathering. Customer differentiation via data analysis. Customer Value. Customer Equity. Customer Interactions. Customization. Analytical CRM and Data Mining. The Customer-Centric Enterprise.

ADM 9984 – Cases in International Marketing

Concepts and theories in international marketing. The challenges and opportunities in international markets. Environment analysis of international markets. Strategies to enter international markets. Choosing target markets and positioning. International marketing mix (product, price, distribution and marketing communication).

Business

ADM 1980 – Tópicos Especiais em Administração I – LEADERSHIP

Introduction to the study of leadership through theoretical and empirical research in the international literature in the social sciences. Emphasis on advancing the understanding of leadership through a focus on the rich complexities of human behavior and social interactions. Focus on leadership theory and research within and across formal organizational settings.

ADM 1982 – Tópicos Especiais em Administração III – BUSINESS MODELS

One of the important strategic choices to be made by companies and decision makers is the business model to be used to generate customers and cash for the organization. The business model may vary by industry and is important in defining alliances and organizational structure. This course will evaluate 55 different types of business models and their implications for company strategy.

Chemical Engineering

Propriedades Físicas dos Materiais

Optical properties - Atomic and molecular color origin; Pigment/Color of metals and semiconductors; Color/pigmentation due to the interaction of light with solid material.

Thermal properties - Heat capacity, thermal content and energy storage (gases, liquids); Thermal expansion; Thermal conductivity.

Electrical properties - Free electron theory; Zone Theory

Magnetic properties - Origins and temperature effects

Communication

COM 9033 – Brazilian Culture *(4 credits)* **3ª e 5ª de 9h às 11h / Turma**

Culture and communications media. The course will develop a broad discussion on Brazilian culture, using documentaries produced and directed by Professor Luís Nachbin in remote parts of the country as a base for debate. These audiovisual pieces will show characters and local cultures that rarely appear in the media, revealing parts of an unknown Brazil.

OBJETIVOS: The aim is to provide opportunities for students in general to get in touch with some important aspects of Brazilian culture through an audiovisual perspective. Discussions in class will be illustrated by documentaries and feature films that also highlight aspects that are not usually shown by the main media.

The immensity of the country and cultural diversity amongst its regions – North, Northeast, Central-West, Southeast and South – will be in the center of this course. Local characters that appear in non-fiction films will generate anthropological reflections about Brazilian contemporary social phenomena.

As part of the learning process, students will be asked to develop simple audiovisual projects in which they will familiarize themselves with aspects of the country's culture and also develop basic abilities to approach a subject with a camera device. The field assignment consists of two parts: (1) data collection in a social context of their choice [two fieldwork visits], which will include observing, taking notes and conducting at least one on-site interview; (2) filming/interviewing on camera the chosen character(s) and the ambience around them [two fieldwork visits]. Archive footage might also be used in the final montage process.

Design

DSG 1142 - Digital Image: Creation and Manipulation

Developing and processing of still images. Structure and manipulation of bitmap and static vector images. Input, output, formats and file conversion.

DSG 1791 - Design for 2030 Agenda

The 2030 Agenda for Sustainable Development. Design Thinking applied to Social Innovation. Global Issues vs. Local Solutions. Research and Information Analysis.
Empathy and Awareness. Alternatives Generation. Concept Prototyping and Idea Validation. Social and Environmental Sustainability. Technical Feasibility and Economic Viability. Open Technologies. Communication of Ideas.

DSG 1721 - Brazilian Culture in the Illustrations of Children's Booksn (Tópicos Especiais em Design XXII)

Brazilian culture; creative process; visual narrative techniques in illustrations of children's books.

Economics

ECO 9105 – Introduction to Economics *(4 credits)* **– 3a feiras das 7h às 11h**

This course highlights economic ideas and their power to explain and predict what happens in the world, specifically in Brazil. It is divided in three major branches, Microeconomics, Macroeconomics and Economics History of Brazil. In Microeconomics we will study individuals and business decisions. Macroeconomics will focus on issues that affect the economy as a whole, like national income, general price level, national output and open economies. The Economic History of Brazil will cover various economic events since colonial times, from the emergence of a sugar cane industry in the 16th century and the Atlantic slave trade, the role of Brazilian coffee plantations and the international economy during Imperial Brazil (1822-1889) and the Old Republic (1889-1930) and main economic events in modern Brazilian economy.

Entrepreneurship

EMP 9505 - Entrepreneurial Mindset

This course aims to discuss the main topics of entrepreneurship focusing on the mainstream theories about the entrepreneur. Throughout the course, students will be able to understand what is entrepreneurship, what defines na entrepreneur, learn basic concepts of some important tools (Design Thinking, BMG Canvas, Lean Canvas,etc).

CCCI

History

HIS 9827 – Brazilian History (4 credits)

South America in the context of the Portuguese ultramarine Empire. Black and Indian slavery. The Catholic Church: hierarchies and social identity in the colony. Political emancipation and the construction of the Imperial State. Nationality formation and social tensions. Crisis of slavery and the end of the monarchic regime. The historical experience of the Brazilian Republic. Authoritarianism and Democracy. Inclusion and exclusion in the Brazilian society.

International Relations

IRI 9842 (Turma 24A) International Area Studies II (Democracy and Human Rights in Latin America)

This course examines the development as well as the challenges to democracy and human rights in Latin America. First, we discuss the theoretical frameworks for understanding democracy and human rights. Then we review the experience of Latin American countries with authoritarian regimes and human rights abuses during the period of what is called 'state terror' during the 1970s and 1980s. The last part of the class discusses current challenges to political and civil rights, economic and social performance of the political regimes, women's rights, indigenous rights, human security and conflict resolution, and U.S. human rights policy in the region. We will discuss questions such as: What is the nature of human rights abuses in Latin America? What is the status of democracy in region? Who is in/ who is marginalized in Latin American democracies today? What is the role of national and international NGOs in democratization and human rights promotion? What are the best policies to promote democracy and human rights in Latin America today? The course objectives are the following: i) to understand the key historical, political, and normative debates about democracy and human rights; ii) to provide analytically and practical skills about human rights, particularly on its role in contemporary Latin American politics; and iii) to obtain knowledge of the key political challenges confronting activists, policy-makers and scholars to strengthen the quality of democracy and human rights in Latin America.

International Relations

IRI 9602 – Brazilian Foreign Policy I (*4 credits*)

The course will explain how the main Brazilian foreign policy paradigms were formulated as well as discuss the role of economic development of the Brazilian foreign policy contents. The following issues will be discussed: the Republican regime and foreign policy; Americanism and Pan-Americanism; Cold War and foreign policy; the impact of economic development on Brazilian foreign policy; the Independent Foreign Policy and the Globalism; the foreign policy of military regime and the Americanism; geopolitics and National Security Doctrine; Globalism revival and consolidation; democracy and foreign policy; the post Cold War and Brazilian international insertion; actors and perceptions of Brazilian foreign policy.

Letters

LET 9419 - Special Topics in Portuguese Language. Study and discussion of special topics related to the Portuguese language studies. (4 credits)

Intercultural studies: parameters of analysis. Identification of aspects of the Brazilian culture and language interaction that may be relevant in multicultural/intercultural contexts. Practical work with Brazilian films, TV soap operas and sitcoms, song lyrics, press articles, publicity campaigns and short stories.

LET 9420 – Special Topics in Portuguese Language – Brazilian Language and Culture: from stereotyping to Reality –Prof. Ricardo Alencar *(4 credits)*

Approach and Discussion of The Brazilian Culture in Its Most Relevant Aspects To Students Who Come From Other Cultures. Rethink Brazil Through The Reading Of Possible Stereotypes Present In Images Internationally Disseminated, Taking Into Consideration The Process Of Construction Of The Brazilian Portuguese Language And The Verbal, Non-Verbal And Social Interactional Patterns Currently In Use. Effective Contact With Different Cultural Aspects Such As Ethnic Diversi Ty, Art, Religion, Folklore, Culinary And Language Through Theoretical Readings, Debates And Eventual Lectures About Specific Cultural Topics.

CCCI

Mathematics

MAT 1162 – Multivariable Calculus I

Multivariable Calculus I: Continuity and differentiability of functions of 2 and 3 variables: Graph, domain, image. Linear approximation. Critical points. The Weierstrass's theorem. Lagrange multipliers. Double and triple integrals in Cartesian, polar, cylindrical and spherical coordinates.

MAT 1260 Linear Algebra
Linear Algebra: Systems of linear equations. Cartesian coordinates in two and three dimensions. Vectors, scalar product, determinants, vector product, triple product. Linear subspaces, basis. Linear maps, matrices. Eigenvalues and eigenvectors.

MAT 1231 Computational Linear Algebra

Computational Linear Algebra : Vector and matrix norms, orthogonal projections. Matrix algebra algorithms with rounding error analysis. System of linear equations: LU decomposition, positive definite systems, band symmetric, bloc and sparse matrices. QR and SVD decompositions with applications. Iterative methods, Krylov subspace methods, conjugate gradient and related methods. Algorithms for eigenvalue decomposition.

MAT 1051 – Tópicos II Introduction to MATLAB software

Mechanical Engineering

MEC 2015 - System Identification (3 credis)

Introduction to system identification and state estimation: classes of models, applications, linear and nonlinear methods. Practical system identification: design of excitation signals, residual-based validation: metrics and correlation methods, structure selection. Linear system identification: batch and recursive least squares. State estimation: Kalman filter, receding-horizon approaches. Nonlinear system identification: benchmark problems, classical and machine learning based approaches.

Philosophy

FIL 1262 – Tópicos Especiais (Inglês)

This course is designed to immerse students in some of the central debates of contemporary western philosophy. To achieve this goal, we will engage in a critical exploration of such topics as knowledge and certainty, science and method, freedom and determinism, and authority and the state. A student will be expected to be able to articulate the various philosophical problems considered in the course and to assess the various arguments pro and con surrounding the proposed solutions. The course is fundamentally based on reading, discussing and writing about distinct philosophical questions..

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Psychology

PSI 1021 - Tópicos em Neurociências I

Contemporary Issues in Neurosciences.

Sociology

SOC 9174– Contemporary Brazilian Debates from a Sociological and Anthropological Perspective *(4 credits)*

This course aims to give an introduction to contemporary Brazilian anthropology and sociology. Beginning with central problems which influenced the constitution of these two disciplines, centering around the ideas of Gilberto Freyre and Sergio Buarque de Hollanda, we will discuss modernity and Portuguese tradition; the historical role of the State and its relations with society; public life and private values; family and social solidarity; "racial democracy" and criticisms; Brazilian modernism. The course will then highlight some specific contemporary subject discussions in both areas: violence and urban life, race and inequality, religion, cultural artistic manifestations, especially Tropicalism, Brazilian funk and "manguebeat".

SOC 9174– Contemporary Brazilian Debates from a Sociological and Anthropological Perspective *(4 credits)*

Political Sociology in the 1930s. The agrarian question. Dictatorship, societal authoritarianism and military power. Society, labor sociology and cities. The Constitution of 1988 and the citizenship sphere. Pluralities, identities and social struggles in Brazil. Government, habits and traditions. Brazil and international political sociology.