

## **Programma del Corso di Lingua Inglese L-LIN/12**

Corso di Laurea in Fisica

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**Modalità di erogazione del corso:** Il percorso didattico applicativo si articola in lezioni ed esercitazioni ad impostazione modulare. Le strutture grammaticali e sintattiche studiate si analizzano in relazione a funzioni espressive e strategie espositive del contesto culturale. Si inizia da strutture e frasi semplici e, con approccio graduale, si promuove lo sviluppo di competenze linguistiche più articolate. Le quattro abilità comunicative (parlare, leggere, scrivere, comprendere) sono arricchite in aula tramite la simulazione di interazioni discorsive pratiche. Le attività e gli esercizi svolti durante il corso sono presenti nei testi consigliati. Il loro contenuto è integrato con letture di articoli, su tematiche d'interesse generale e disciplinare, scelti da riviste e siti specialistici.

**Supporti didattici:** Collaboratori Esperti Linguistici, laboratorio linguistico, audiovisivi. Corsi di base (facoltativi).

**Metodi di valutazione del profitto:** La prova di profitto finale comprende una parte scritta ed una orale, in lingua inglese. Essa serve per valutare sia le competenze acquisite dello studente nell'uso organico delle operazioni linguistico-retoriche studiate dai libri di testo ed elencate in A (Communication and pragmatic tasks), sia la sua interazione critica con le letture proposte durante il corso riportate in C. La valutazione viene espressa con giudizio di idoneità accompagnato da un voto interno in trentesimi. Si tiene presente anche la scala di competenze specificate dal *Common European Framework* e, secondo il numero di crediti e le competenze acquisiti dallo studente si qualificano in base ai livelli previsti.

Gli argomenti di grammatica, sintassi, semantica e retorica attinenti al corso sono specificati in B (Grammatico- syntactic and rhetorical specifications relevant to the English course).

**Testi consigliati:** *Basic English for Science* (Oxford University Press, Oxford 1994); *Macmillan English Grammar in Context, Intermediate* (Macmillan Publishers, Oxford 2008); *A Concise Dictionary of Physics* (Oxford University Press, Oxford 1996).

A – Communication and pragmatic tasks

- Expressing numbers and basic operations, describing 2- and 3-dimensional figures, defining simple tools: shape, size and use.
- Describing angles, lines and graphs, reading mathematical symbols, equations and formulae.
- Describing position, movement, action and direction of objects in space.

- Describing qualities of materials, colours, appearances, simple apparatuses and related experiments
- Classification, definition and comparison of substances and physical properties.
- Time and logical sequencing in the description of a process.
- Explaining cause and reason, drawing contrast, difference and similarity.
- Stating probable, hypothetical and theoretical results, suggesting possible cause, effect and result.
- Reporting actions, observations and findings, accounting for results, stating conclusions.
- Main parts of a scientific report and their rhetorical function.
- Writing letters and curriculum vitae.

**B – Grammatico- syntactic and rhetorical specifications relevant to the English course**

- To be and to have as main and auxiliary verbs. Impersonal statements.
- Nouns: countable, uncountable, dual and mass.
- The simple present: to express states, general truths, habits, mathematical concepts.
- The future tense: to signal predictions, intentions and anticipation.
- Adverbs and prepositions of space and movement, manner, means and instruments.
- Simple statements of comparison and contrast: equal, different and proportional relations.
- The possessive genitive: Saxon and ‘of’ genitive in descriptive statements.
- Fronted statements. Noun phrases, modifiers and qualifiers of nouns and phrases.
- Epistemic modals: to express mental and/or physical ability, possibility, necessity, probability, remote possibility, suppositions.
- The passive voice: present and past tense, by and the agent, agentless passive or thematic focus.
- The relative clauses: identifying, non-identifying and reduced relative clauses.
- The indefinite article: in definitions, introductions and partitive phrases.
- The definite article: anaphoric, cataphoric and deictic reference.
- The present perfect: to focus on events and results.
- The first, second and third type conditional: implications and possible adverbials.
- Time sequencing and logical connectors to signal cause, effect and results.

- The five phases of a scientific report: conceptual paragraphs and logical organization of content matter and argumentation.

**C – Required readings A.A. 2013-2014 (reading list da aggiornare con gli studenti)**

1. Differences between graphite and diamond. - *Scientific American*. September 2007.
2. What is a 'fictitious force'. - *Scientific American*, September 2007.
3. What would happen to Earth if the moon were only half as massive? *Sc. Am.* Oct 2008.
4. The saving of planet Gaia. - *New Scientist*, March 2006.
5. Does infinity come in different sizes? - *Sc. Am.* Jan. 2008.
6. Snow and ice crystals - *Physics Today* – December 2007.
7. The origin of bird flight. - *Physics Teacher*, Sept. 2006.
8. So why would a pigeon stand on one leg (or limp without hurting)? - *The Physics Teacher* – March 2012
9. The import of the Higgs boson - *Scientific American* – September 2012
10. The spirals that don't make sense - *New Scientist* – 25 August 2012
11. Gamow on Newton: another look at centripetal acceleration - *The Physics Teacher* – March 2012
12. Edme Mariotte and Newton's cradle - *The Physics Teacher* – April 2012
13. The physics of a simple camera stabilizer - *The Physics Teacher* – May 2012

Along with the 13 required readings, each student should choose one reading from the ones listed below:

1. Why do migratory birds fly in a V formation? - *Scientific American* September 2007.
2. Inside story: the search in CMS for the Higgs boson - *Cern Courier* – September 2012
3. Stereo 3-D vision in teaching physics - *The Physics Teacher* – March 2012