

Exemplos de currículos no CS2013

Projeto Apoio BCC

CS2013

- Body of Knowledge está dividido em Knowledge Units
 - Não é um currículo pronto!
- Ideia: Apresentar **propostas** de currículos e planos de **migração** alinhados com o CS2013

Material disponível

- Bluegrass Community and Technical College (Associate in Science Degree)
- Bluegrass Community and Technical College (Associate in Applied Science Degree)
- **Grinnel College**
- Stanford University
- Williams College

Grinnel

- Small
- Highly selective
- Liberal arts college
- 1600 students
- Modern pedagogy
 - Active learning
 - Individual and collaborative engagement

Grinnel

- **Breadth of study**
- **Formal requirements for graduation are small**
- **Shape of undergraduate course selections often depends upon advising of students by faculty**

Currículo Atual

- **Multi-paradigm, Introductory Sequence
(all three 4-credit courses required)**
 - **Functional Problem Solving**
 - **Imperative Problem Solving and Data Structures**
 - **Algorithms and Object Oriented Problem Solving**

Currículo Atual

- **Required Upper Level Courses (both 4-credit courses required)**
 - **Analysis of Algorithms**
 - **Automata, Formal Languages, & Computational Complexity (Theory)**

Currículo Atual

- **Systems (one of two 4-credit courses required; both strongly recommended)**
 - **Computer Organization and Architecture**
 - **Operating Systems and Parallel Algorithms**

Currículo Atual

- **Languages (one of two 4-credit courses required)**
 - **Programming Language Concepts**
 - **Compilers**

Currículo Atual

- **Software Development (one of two 4-credit courses required)**
 - **Software Design**
 - **Databases and Web Application Design**

Currículo Atual

- **Mathematical Foundations (two designated 4 credit courses, plus a 4 credit elective)**
 - **Calculus I**
 - **Discrete Mathematics OR Combinatorics**
 - **Mathematics elective with calculus I OR later course as prerequisite**

Currículo Atual

- **Electives regularly offered**
 - **Artificial Intelligence**
 - **Computational Linguistics**
 - **Computer Networks**
 - **Computer Vision**
 - **Human-Computer Interaction**
- **Weekly seminars and reading groups**

Currículo Atual

Grinnel's 2012-2013 Curriculum	Tier 1	Tier 2
Minimal major: only the basic requirements	59-73%	34-53%
Expanded minimal major: 9 courses including Computer Organization and Operating Systems	74-75%	50-57%
Typical major: 10 courses including all previous plus either AI or Networks	76-78%	62%

Mudanças

- **Split Software Engineering (4 credits)**
 - 2 credits on concepts, principles and methodology
 - 2 credits to join on-going projects
 - Core HCI in both courses

Mudanças

- **Split Computer Networks (4 credits)**
 - 2 credits on networks
 - 2 credits on security

Mudanças

- **Social and Professional issues**
 - addressed in weekly seminars
 - annual presentation on intellectual property

Mudanças

- **Programming languages and compilers (4 credits each)**
 - **Introductory sequence is already multi-paradigm**
 - **Combined into a 2 credits course**

Proposta

- **Multi-paradigm, Introductory Sequence
(all three 4-credit courses required)**
 - **Functional Problem Solving**
 - **Imperative Problem Solving and Data Structures**
 - **Algorithms and Object Oriented Problem Solving
(updated theme)**

Proposta

- **Required Upper Level Courses (10 credits required)**
 - **Analysis of Algorithms**
 - **Automata, Formal Languages, & Computational Complexity (Theory)**
 - **Implementation of Programming Languages (2 credits, new/revised)**

Proposta

- **Systems I (4 credits required; 8 credits strongly recommended)**
 - **Computer Organization and Architecture**
 - **Operating Systems and Parallel Algorithms**

Proposta

- **Systems II (2 credits required; 4 credits strongly recommended)**
 - **Computer Networks (from 4 to 2 credits)**
 - **Computer Security (new, 2 credits)**

Proposta

- **Software Development (4 credits required; 6 credits recommended)**
 - **Software principles and methodology (new, 2 credits)**
 - **Team-based community project (new, 2 credits, may be repeated for credit)**

Proposta

- **Mathematical Foundations (two designated 4 credit courses, plus a 4 credit elective)**
 - **Calculus I**
 - **Discrete Mathematics OR Combinatorics**
 - **Mathematics elective with Calculus I OR later course as prerequisite**

Proposta

Proposed CS Major and Program	Tier 1	Tier 2
Minimal major: only the basic requirements	70-85%	51-61%
Minimal major plus attendance at IP talk/discussion	73-89%	51-61%
Expanded (38 credits) major - both Computer Organization and Operating Systems, both Networks and Security	92%	73%
38 credits plus attendance at IP talk/discussion	96%	73%
38 credits plus AI plus attendance at IP talk/discussion	96%	78%