DIGITAL DEPARTMENT

Stanford Logic Group
Computational Logic in Enterprise Management

Towards the **Fully DECLARATIVE Enterprise**

- **Rules / Forms** based Approach to Software Development
- Help non-programmers specify **Enterprise Policies**
- Help skilled business users **Create and Manage** Enterprise Applications by themselves
- Encode **Enterprise Policies Declaratively** using Logic
Concept Car: DIGITAL DEPARTMENT

Web-based Enterprise Management System for CS Department @ Stanford

Academic program administration using an online form / rule based-infrastructure.

- room and event scheduling
- academic affairs (course & program registrations)
- financial management (contracts and reimbursements)
- personal and group information management.
GATES INFORMATION NETWORK

- Room Scheduling
- MSCS Program Management
- Account Management
- Space Czar
- Financials: Expense Reports
**Note:** Enter "Other Stanford Degree" in the approval column for courses that you have applied to another Stanford degree. Enter "Waiver On File" for courses your advisor has waived via a foundation course waiver form.

<table>
<thead>
<tr>
<th>Required</th>
<th>Equivalent elsewhere (course number/title/institution)</th>
<th>Approval</th>
<th>Grade</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic, Automata, and Complexity (CS 103)</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Probability (CS 109, STATS 116, CME 106, or MS&amp;E 220)</td>
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<tr>
<td>Algorithmic Analysis (CS 161)</td>
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<tr>
<td>Computer Organization and Systems (CS 107)</td>
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<tr>
<td>Principles of Computer Systems (CS 110)</td>
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<td></td>
<td>Waiver On File</td>
<td>0</td>
</tr>
</tbody>
</table>

**TOTAL UNITS USED TO SATISFY FOUNDATIONS REQUIREMENT:** 6

Note: This total may not exceed 10 units.

**Significant Implementation Requirement**

At least one course in your MS program should be designated as satisfying the "Significant Implementation Requirement". Note that this course may also be used to satisfy some other requirement (i.e., Breadth, Depth, or Elective). This requirement ensures that you have taken part in some form of substantial software development as part of the MSCS program.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Grade</th>
</tr>
</thead>
</table>

Courses that may be used to satisfy the significant implementation requirement include: CS 140, 143, 144, 145, 148, 210B, 221, 243, 248, and 346 (any deviations from this list must be approved by the Associate Chair for Education). Courses meeting the Significant Implementation Requirement must be taken at Stanford. Students who previously took at least two of these courses at Stanford as undergraduates may request a waiver of the requirement.

**Breadth Requirement**

Choose 3 from the list below

- [ ] CS 140
- [ ] CS 143
- [ ] CS 144
- [x] CS 145
- [ ] CS 147
- [ ] CS 148
- [ ] CS 149
- [ ] CS 154
- [x] CS 155
- [ ] CS 157
- [ ] CS 164
- [ ] CS 240
- [ ] CS 244
- [ ] CS 244B
- [ ] CS 244E

8 Requirements Left | Total Units: 12 | Status: Draft
Logical Spreadsheets

Gates Room Management System

Correct-on-capture data entry: “Start times must be before end times”

Enterprise Management Policy: “Only faculty can reserve 3rd floor conference room”

DOM elements of a page ⇒ cells in Websheet

Cells are related by logical formulas
Capturing MSCS Program Requirements in Websheets

A student may satisfy the probability ‘foundations’ requirement by taking either of cs109, stats 116, cme106 or mse220.

\[
\begin{align*}
\text{val}(\text{cs109}, \text{true}) & \Rightarrow \text{prob}(\text{cs109}) \\
\text{val}(\text{stats116}, \text{true}) & \Rightarrow \text{prob}(\text{stats116}) \\
\ldots
\end{align*}
\]

By changing the color of a UI element we let students know that they have met the above requirement.

\[
\text{prob}(\text{cs109}) \ldots \lor \text{prob}(\text{mse220}) \Rightarrow \\
\text{color}(\text{prob}_{\text{req}}, \text{black})
\]