

# Knight Foundation School of Computing and Information Sciences

**Course Title:** IT Automation

**Date:** 08/03/2008

**Course Number:** CIS 4431

**Number of Credits:** 3

<b>Subject Area:</b> Systems	<b>Subject Area Coordinator:</b> Kianoush Gholamiboroujeni <b>email:</b> kgholami@fiu.edu
<b>Catalog Description:</b> IT automation: mgmt models, auditing, assets, change mgmt, network monitoring, OS imaging, patch mgmt, help desk, remote control, user state mgmt, end-point security, backup, disaster recovery.	
<b>Textbook:</b> None	
<b>References:</b> None	
<b>Prerequisites Courses:</b> <a href="#">CGS 3767</a>	
<b>Corequisites Courses:</b> CGS4285 or permission of instructor	

Type: Elective for IT (System Administration)

Prerequisites Topics:

- Good understanding of operating systems.
- Basic programming skills.

Course Outcomes:

- O1. Be familiar with IT management models and practices.
- O2. Be familiar with IT automation software and its architecture.
- O3. Master the IT automation concepts.
- O4. Master an IT automation software offering (e.g., The Kaseya IT Automation).
- O5. Master the writing IT automation scripts.
- O6. Be familiar with working as a team member.

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**Relationship between Course Outcomes and Program Outcomes**

<b>BS in IT: Program Outcomes</b>	<b>Course Outcomes</b>
a) Demonstrate practical hands-on expertise in selection, installation, customizing and maintenance of the state-of-the-art computing infrastructure.	O2, O4, O5
b) Demonstrate practical proficiency in selection, installation, customizing and maintenance of the state-of-the-art software systems.	O2, O4, O5
c) Demonstrate general understanding of at least one field where Information Technology plays a central role.	O1, O3
d) Demonstrate understanding of the social and ethical concerns of the practice of Information Technology.	
e) Demonstrate the ability to work cooperatively in teams.	
f) Demonstrate effective communication skills.	O6
g) Demonstrate familiarity with fundamental ideas and issues in the arts, humanities and social sciences.	

**Assessment Plan for the Course and how Data in the Course are used to assess Program Outcomes**

Student and Instructor Course Outcome Surveys are administered at the conclusion of each offering, and are evaluated as described in the School's Assessment Plan:  
<https://abet.cs.fiu.edu/csassessment/>

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**Outline**

Topic	Number of Lecture Hours	Outcome
<b>IT Management Models:</b> In-House, Out-Sourced Break-Fix, and Managed Services.	2	O1
<b>Manage Services:</b> Development, Machine Groups, Agents, Templates, and Policies.	4	O1, O4
<b>Automation Software:</b> Agent-Server Architecture, Deployment, and Management.	4	O2, O4
<b>Auditing, Assets, and Change Management:</b> Knowledge Collection, Scheduling, and Reporting.	1	O3, O4
<b>Network Monitoring:</b> Monitor Sets, Event Sets, SNMP Sets, and Reporting.	5	O3, O4
<b>OS Imaging and Patch Management:</b> Scanning, Deployment Policies, Reboot, and Reporting	3	O3, O4
<b>Scripting:</b> Writing Scripts, Scheduling, Distribution, Logging, and Debugging.	7	O4, O5, O6
<b>Help Desk &amp; Remote Control:</b> Ticketing, Remote Control, Chat, and Reporting.	1	O3, O4, O5, O6
<b>User State Management:</b> User State, Preferences, Drives, Printers, Power Mgmt.	2	O3, O4, O5
<b>End-Point Security:</b> Strategies, Security Policies, Scheduling, Logs, Sig. Updates.	2	O3, O4, O5
<b>Backup and Disaster Recovery:</b> Strategies, Scheduling, Verifying, Recovery.	5	O3, O4, O5

**Course Outcomes Emphasized in Laboratory Projects / Assignments**

Outcome	Number of Weeks
	<ul style="list-style-type: none"> <li>• 10 one-week period assignment to evaluate the students learning.</li> <li>• 1 term project on developing innovative scripts and procedures that promote IT automation.</li> </ul>
O1	1 week; Assignment 1
O2	1 week; Assignment 2
O3, O4	5 week; Assignments 3-6; and Term Project.
O4, O5	5 week; Assignments 7-10; and Term Project.

**Oral and Written Communication:**

- Number of written reports: **1** for the term project.
- Approximate number of pages for term project: **10 pages**.
- Number of assignments: **Ten** (each homework is due in one week from the day of assignment).
- Number of required oral presentations: **One** for the term project.

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- Approximate time for each presentation: **20 minutes** for each group (four to five groups).

**Social and Ethical Implications of Computing Topics**

Topic	Class time	Student performance measures
N/A		

**Approximate number of class hours devoted to fundamental IT topics**

Topic	Core Hours	Advanced Hours

**Theoretical Contents**

Topic	Class time
N/A	

**Problem Analysis Experiences**

<b>10 assignments</b>
<b>1 term project</b>

**Solution Design Experiences**

<b>10 assignments</b>
<b>1 term project</b>

**The Coverage of Knowledge Units within Information Technology Body of Knowledge<sup>1</sup>**

Knowledge Unit	Topic	Lecture Hours

<sup>1</sup>See Chapter five of [https://www.acm.org/binaries/content/assets/education/cs2013\\_web\\_final.pdf](https://www.acm.org/binaries/content/assets/education/cs2013_web_final.pdf) for the overview of the IT body of knowledge.