



# Living In the KnowlEdge Society (LIKES) at VT

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# Part I: LIKES Overview

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- ▶ Research to Education
  - ▶ Vision
  - ▶ Goals and Objectives
  - ▶ Diagram – Knowledge Society
  - ▶ Needs, Challenges
  - ▶ Community development
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- ▶ Part II. VT LIKES Details

# Research Examples

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- ▶ **Digital libraries for**
  - ▶ Electronic theses and dissertations
  - ▶ Archaeological information
  - ▶ National Science Digital Library
  - ▶ April 16, 2007 history and recovery
- ▶ **Information retrieval systems**
  - ▶ Pre-cursors to Google
  - ▶ Searching, browsing, exploring, visualizing
- ▶ **Automating libraries and companies**
- ▶ **Speeding up CD-ROM access**
- ▶ **Making video work on computers**

# Research to Education

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- ▶ Faculty from Computer Science, Accounting Information Systems, Business Information Technology, English – and similar departments at NC A&T, Santa Clara U., & Villanova
- ▶ Research on
  - ▶ **Web, Web 2.0, Social Networks, Semantic Web**
  - ▶ **Artificial Intelligence, Knowledge Management**
  - ▶ **Data, Databases, Database Management**
  - ▶ **Digital Libraries, Library & Information Science**
  - ▶ **Information Processing, Systems, and Technologies**
  - ▶ **Multimedia, Hypertext, and Hypermedia**
- ▶ Applications to Education
- ▶ And, SOME OF THE BEST JOBS – PLENTY OF THEM!

# Vision

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- ▶ All college graduates should have the ability to apply
  - ▶ Computing concepts;
  - ▶ Computing methods/systems/software; and
  - ▶ Computational thinking skills

to the needs of the emerging **knowledge society**,  
in modern times and  
in the future

# Goals and Objectives

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## ▶ GOALS

- Transform computing education so graduates can help build (systems, services, tools, ... for) the knowledge society.
- Establish collaboration between computing educators and all other disciplines to guide the emergence of the knowledge society.

## ▶ OBJECTIVES

- Ensure that all interested undergraduates are prepared for living in the emerging knowledge society of the 21<sup>st</sup> Century.
- Spread computational thinking, fundamental CS/IT paradigms, key computing concepts, and ICT application across the knowledge society (and all disciplines).

# Diagram

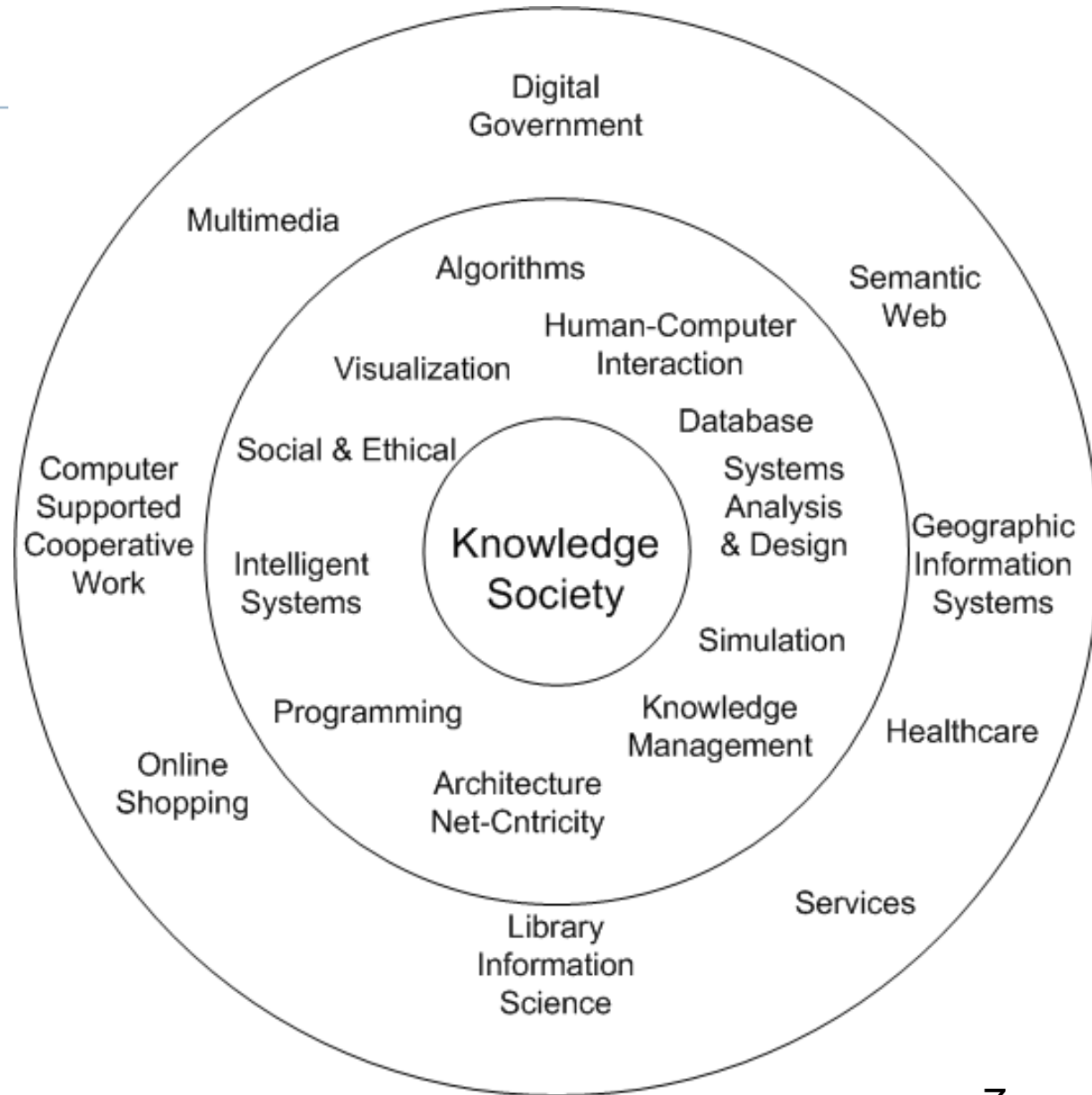
- Promote
- Educate
- Spread
- Utilize

Computing concepts

Computing tools

Computational thinking

Collaboration among different disciplines



# Needs, Challenges

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- **Collaboration** across disciplines driven by the knowledge society's educational needs.
- Support for computing-related **life-long learning** as job and work needs/demands shift.
- Educational **resources** and pedagogical **approaches** to support both the emerging needs of learners
  - in computing disciplines, and
  - in related inter-disciplinary collaborations.
- Shifting from literacy, to fluency, to **deep contextualization of computational thinking**.



# Community Development

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- ▶ Online communities are formed to facilitate collaboration, communication, and sharing of ideas about LIKES
- ▶ LinkedIn: LIKES Educators
- ▶ Facebook:
  - LIKES
  - **LIKESVT (for VT students)**
- ▶ Second Life: LIKES (anyone)
- ▶ Sakai (scholar.vt.edu):
  - LIKES Team (for project team)
  - LIKES Development (for e-portfolio development)
  - **LIKES introduction (course)**
  - **LIKES students (ongoing course)**
    - Supporting Virginia Tech students interested in LIKES:

# LIKES Community at Virginia Tech

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- ▶ A cohort of students interested in LIKES
- ▶ Getting a certificate upon graduation
- ▶ Supported with a speaker series, online community, and a
- ▶ “Pathway” through the core curriculum (CLE)
- ▶ With “Intro to LIKES”, “LIKES capstone”, and, in between:
- ▶ 12 credit hours of LIKES-Designated Core Courses, that cover:
  - ▶ 1.1 Key concepts related to computing - OR
  - ▶ 1.2 computing-type activities / use of computing systems and software - AND
  - ▶ 2.0 Living in Society
- ▶ Summarized as:
  - ▶ Computational skills: computational thinking and/or use of computing systems, and
  - ▶ Application of computational skills for societal improvements

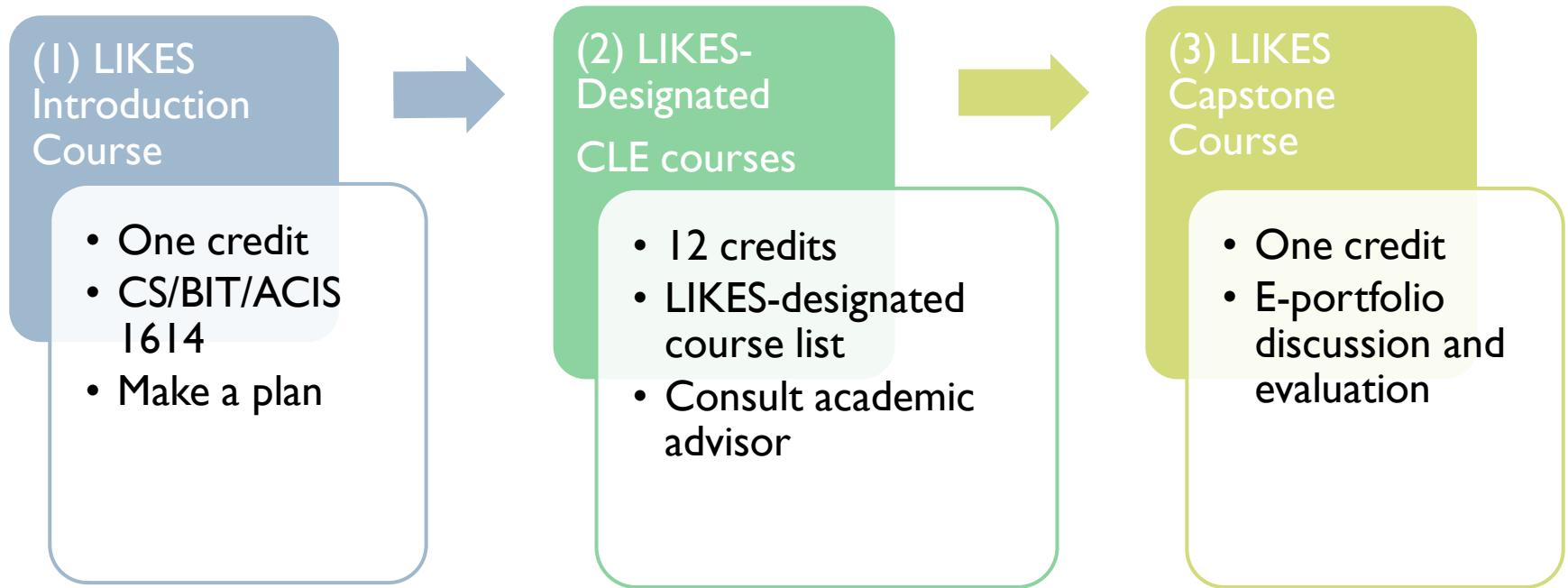
## Part II: VT LIKES Details

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- ▶ LIKES Certificate Program
- ▶ CS/BIT/ACIS 1614
- ▶ LIKES and CLE requirement
- ▶ LIKES cohort
- ▶ Community building
- ▶ E-Portfolio, Matrix
- ▶ Assessment and critical analysis

# LIKES Certificate Program

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After completing this program, you will get the LIKES Certificate

# (1) LIKES Introduction Course

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- ▶ CS/BIT/ACIS 1614, one credit
- ▶ Beginning of the process to be LIKES-certified
- ▶ Readings include:
  - ▶ The World is Flat (Friedman)
  - ▶ Information Systems (free online book)
- ▶ Introducing students to Sakai (Scholar)
- ▶ Introducing use of e-portfolios

## (2) Current LIKES-Designated CLE Courses

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Area	Courses
1: Writing and discourse	ENGLI 105 Freshman English ENGLI 106 Freshman English * look for the special LIKES-themed sections (C. Evia)
2: Ideas, cultural traditions and values	PHIL1204 Knowledge and Reality
3: Society and human behavior	ECON2005 Microeconomic Principles ECON2006 Macroeconomic Principles
5: Quantitative and symbolic reasoning	All Math courses in the CLE All Statistics courses in the CLE CSI044 Introduction to Programming in C PHIL1504 Language and Logic

And this list is growing...

## (2)(Continued) Fulfilling CLE Requirements with LIKES

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- ▶ Find on the list of LIKES-designated courses the CLE area offerings recommended from your major checksheet
  - ▶ Consult your academic advisor
- ▶ However, not all the LIKES-designated courses work for all majors
  - ▶ E.g., an area 4 course in Chemistry is not the best option for a business major
- ▶ **Create reflections, artifacts**
  - ▶ Write about computing concepts and their usage in solving real-life problems
  - ▶ Use of computing concepts in society
  - ▶ Upload them into e-portfolio matrix

## (2)(Continued) Fulfilling CLE Requirements with LIKES

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- ▶ Consult the list of CLE courses in other areas to design the curriculum most interesting to you
- ▶ LIKES doesn't give you options for ALL your CLE courses, so work with your advisor in finding choices for all your requirements
- ▶ (Help us find other CLE courses to add to LIKES. CEUT is providing 7 faculty grants to instructors who want to enhance their courses to relate to LIKES, and we provide FDI training each summer to help.)



## (3) LIKES Capstone Course

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- ▶ **Reflection papers and artifacts**
  - ▶ Collected through the series of LIKES-designated courses
  - ▶ Uploaded into e-portfolio matrix
  
- ▶ **(In the capstone) Evaluation of e-portfolios**
  - ▶ Analyzed and discussed
  - ▶ Help integrate contextualized understanding of computational thinking across the disciplines.

# LIKES Cohort

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- ▶ Supported by the “LIKES student” ongoing course site in Scholar
- ▶ Will have all students who are, or have been, interested in LIKES, at all levels
- ▶ Students added when take “Intro to LIKES” course
- ▶ Useful for
  - ▶ announcements
  - ▶ calendar of talks and social events
  - ▶ forums, blogs, chats, wiki
  - ▶ sharing resources, and
  - ▶ other collaboration and community building among students

# Community Building

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- ▶ Provides common experience across program
- ▶ Supports knowledge maintenance
- ▶ Supports reconvening in capstone courses and sharing experiences

# E-Portfolio

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- ▶ Web-based, user-centered platform
- ▶ Allows students to create customized electronic portfolios of their work / goals / achievements
- ▶ Use of e-Portfolios in LIKES context
  - ▶ Assessment of learning
  - ▶ Support of critical analysis
  - ▶ (please see next slide for details)

# E-Portfolio – Matrix (LIKES Students)

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LIKES ePortfolio Matrix	Computing-related Concepts and Activities, and Reflections on Living in the KnowEdge Society
LIKES Intro Course	
LIKES Capstone Course	
LIKES CLE Courses	
Major(s)	
Minor(s)	
LIKES Community	
LIKES Speakers	
LIKES Service Learning Projects	
Other / Personal Activities	

# Assessment and Critical Analysis

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- ▶ Students upload:
  - ▶ Assignments, Reflections on those assignments
- ▶ For each individual course
  - ▶ Intro course and capstone course
  - ▶ CLE courses; Other courses (in-major courses, etc.)
- ▶ For related events (speaker series, etc.)
- ▶ For entire initiative as a whole
- ▶ Student / faculty self-assessment
- ▶ Promotes / strengthens interdisciplinary thinking
- ▶ Supports critical writing, analysis, and expression

# Acknowledgment

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Thank you!

Any questions?

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[www.livingknowledgesociety.org](http://www.livingknowledgesociety.org)