

OntologySummit 2010 Symposium: Creating the Ontologists of the Future

Current Practices and Resources



Ontology Summit 2010: Creating the Ontologists of the Future

**Update of Survey Report:
Ontological Curricular Content and
Quality Assurance —
Presently
(3/4/10 Ontology Summit Conference Call)**



Co-Champions

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Tracks at-a-Glance

- **Curricular Content—Presently:**

- **Mission:** The track mission is to survey the existing provision of ontology education with regard to curricular content.
- **Questions of Substance:**
 - Which educational programmes are there, if any, which are mainly or entirely devoted to ontology and related topics?
 - Within other educational programmes, what modules/courses are there which are mainly or entirely devoted to ontology and related topics?
 - Are there any other programmes or modules/courses with sufficient ontologically relevant content?
 - Are there curricular models (a.k.a. curricular guidelines) that include ontology-related topics?

- **Quality Assurance—Presently:**

- **Mission:** The track mission is to survey the existing forms of quality assurance (e.g., accreditation, certification, and licensure) for programs, courses, and professionals.
- **Questions of Substance:**
 - By what bodies, if any, are the programmes identified as having substantial ontological content currently accredited?
 - By what bodies, if any, are ontology professionals currently certified?
 - What other forms of quality assurance exist that may be relevant to the track mission?



The Survey

- Survey questions are attached to this document (Appendix A)
- Data are from 1/13/2010 to 3/2/2010
- Note: although the survey was later reopened until 3/12/2010, we did not get additional responses



The Results

- Structured in sections
- First section: our summary with comments
- Second section: our recommended future actions
- Third section: statistics per question (“Stats”)
- Several appendices



Our Summary and Comments

- The large amount of ‘noise’ (incomplete and ‘n/a’ answers) is due to the fact our survey was the first one that was published and respondents were under the impression ours was the only survey being offered for the whole Ontology Summit 2010



Our Summary and Comments

- Only a few responses reported to programs devoted to ontology-centered topics (3)
- Of these one corresponds to a university-based [MA in Philosophy with a Specialization in Ontology and Information Science](#)



Our Summary and Comments

- The other two are:
 - A tutorial which offers training on “Just Enough Ontological Engineering”
 - A suite of training and certification services offered by a corporation based in Austria



Our Summary and Comments

- The majority of the responses correspond to programs which offer ontology-centered courses, but not programs (21)
- The remaining responses correspond to courses with ontology-related topics, but not entirely ontology-centered (15)



Our Summary and Comments

- Most of the programs are degree-conferring
- Most of the programs are at the MS level
- Most of the programs are associated with Computing-related departments



Our Summary and Comments

- A total of 34 institutions were captured, from 9 different countries (alphabetically: Belgium, Brazil, Germany, Iran, Italy, Japan, Netherlands, UK, and USA)
- Of these institutions, some reported the names of their programs with URL, which are listed in Appendix B



Our Summary and Comments

- We captured quite a few (48) ontology-related courses with their associated URLs (see Appendix C)



Our Summary and Comments

- It is not clear if the few captured curricular guidelines which target ontology-centered curricula are comparable—in terms of maturity—to those put forward by [ACM/IEEE for Computing](#) (see Appendix D)



Our Summary and Comments

- Bodies that accredit programs are in Appendix D
- Bodies that certify professionals are in Appendix E
- It is not clear if these professional certifications have the maturity of—say—the IEEE Computer Society's [Certifications for Software Professionals](#)



Recommended Actions

- Development of an ontology-based registry—with a web interface—that allows members of the community to add information about their educational and training initiatives which are ontology-centered
- The web interface would provide the community with dynamic—and hopefully current—answers to a variety of queries and also with access to shared educational and training resources



Recommended Actions

- An interesting project would be the development of this registry with a team of students from different universities (from different countries), in the context of capstone-like courses
- There might even be agencies that might fund this project (Any ideas?)



Recommended Actions

- Use the captured course information to compare with and contrast against curricular recommendations this community will put forward



Recommended Actions

- Since the majority of the captured programs come from Computing, the community might want to consider ‘lobbying’ to infuse more ontology-related content into computing curricula models (e.g., [ACM/IEEE](#))



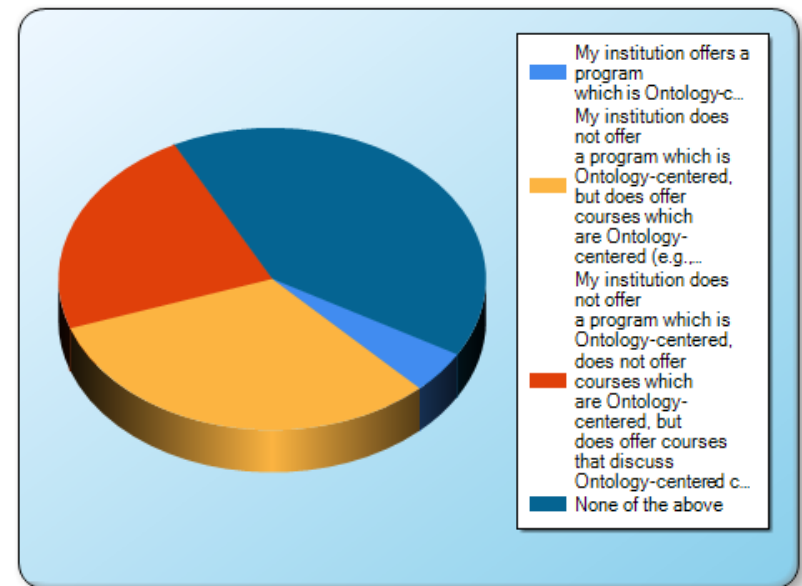
Recommended Actions

- Since there seem to be existing professional certification bodies, the community might want to consider offering feedback to them about their certification processes



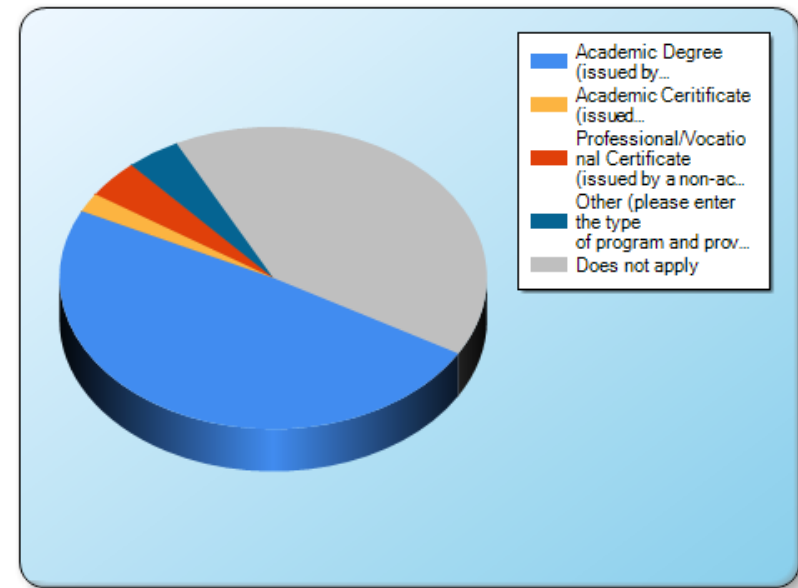
Stats: Emphasis

Response	Frequency	Count
My institution offers a program which is Ontology-centered (e.g., "BS in Ontology Engineering")	4.5%	3
▶ My institution does not offer a program which is Ontology-centered, but does offer courses which are Ontology-centered (e.g., a course called "Applications of Ontologies to Software Engineering", as part of a "BS in Software Engineering")	31.8%	21
My institution does not offer a program which is Ontology-centered, does not offer courses which are Ontology-centered, but does offer courses that discuss Ontology-centered concepts (e.g., ontologies are studied as part of a course entitled "Introduction to Artificial Intelligence", which is part of a "BS in Computer Science")	22.7%	15
None of the above	40.9%	27
Not Answered		16
Mean		3.000
Standard Deviation		0.961
Valid Responses		66
Total Responses		82



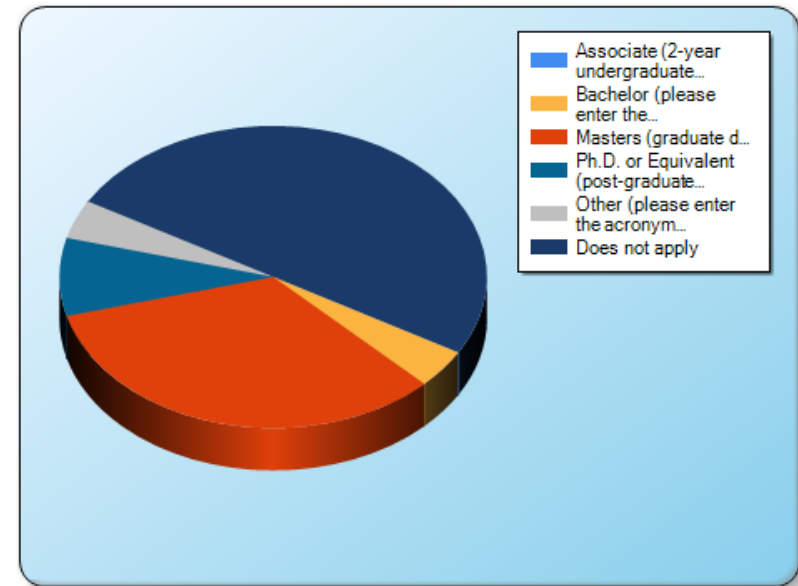
Stats: Type of Program

Response	Frequency	Count
Academic Degree (issued by an academic institution)	49.0%	24
Academic Certificate (issued by an academic institution)	2.0%	1
Professional/Vocational Certificate (issued by a non-academic institution)	4.1%	2
Other (please enter the type of program and provide a brief explanation)	4.1%	2
Does not apply	40.8%	20
Not Answered		16
Mean		2.857
Standard Deviation		1.926
Valid Responses		49
Total Responses		65



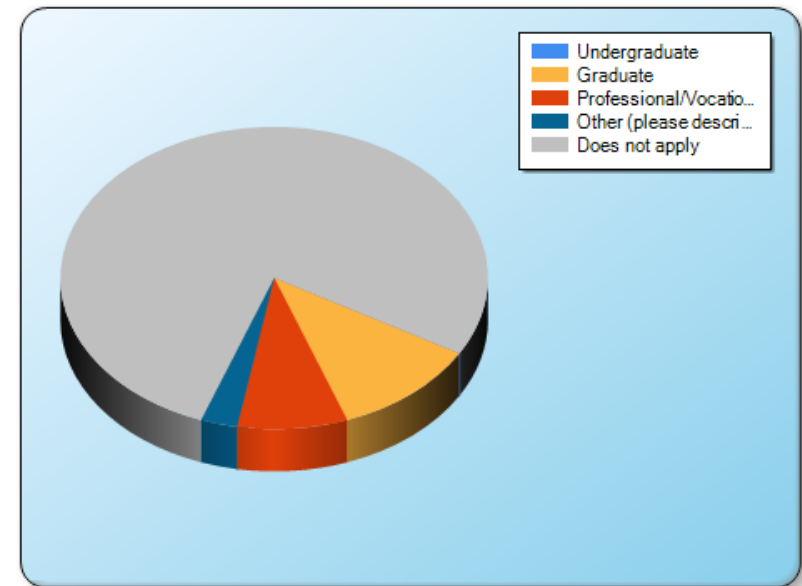
Stats: Type of Degree

Response	Frequency	Count
Associate (2-year undergraduate degree)	0.0%	0
Bachelor (please enter the number of years)	4.2%	2
▶ Masters (graduate degree)	33.3%	16
Ph.D. or Equivalent (post-graduate degree)	8.3%	4
Other (please enter the acronym and its definition)	4.2%	2
Does not apply	50.0%	24
Not Answered		17
Mean		4.625
Standard Deviation		1.482
Valid Responses		48
Total Responses		65



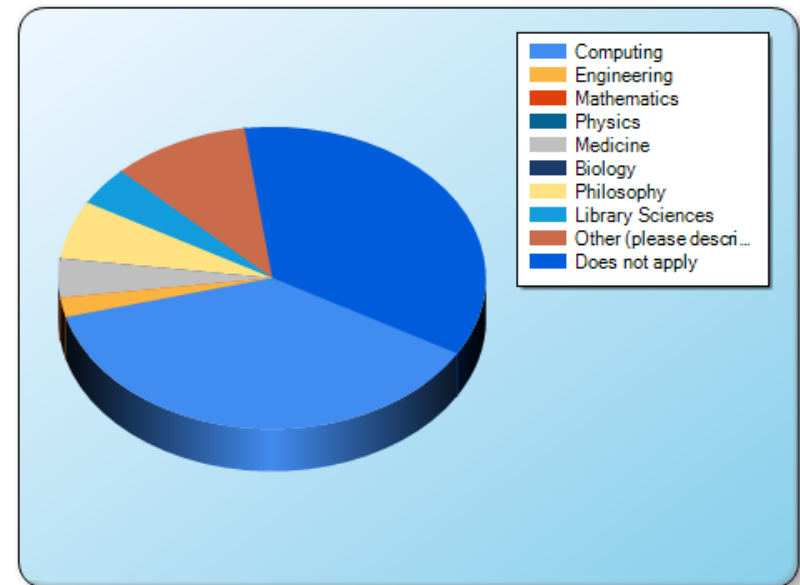
Stats: Level of Non-Degree

Response	Frequency	Count
Undergraduate	0.0%	0
Graduate	11.1%	4
Professional/Vocational	8.3%	3
Other (please describe)	2.8%	1
Does not apply	77.8%	28
Not Answered		29
Mean		4.472
Standard Deviation		1.055
Valid Responses		36
Total Responses		65



Stats: Main Discipline

Response	Frequency	Count
▶ Computing	37.5%	18
Engineering	2.1%	1
Mathematics	0.0%	0
Physics	0.0%	0
Medicine	4.2%	2
Biology	0.0%	0
Philosophy	6.3%	3
Library Sciences	4.2%	2
Other (please describe)	10.4%	5
Does not apply	35.4%	17
Not Answered		17
Mean		5.875
Standard Deviation		4.113
Valid Responses		48
Total Responses		65



Stats: URL to Programs

Response	Frequency	Count
Enter URL to program's website	48.8%	21
Not available/Not known	51.2%	22
Not Answered		22
Mean		1.512
Standard Deviation		0.506
Valid Responses		43
Total Responses		65

Note: actually, 22 URLs were reported. See Appendix B



Stats: Courses and URLs

- We captured 48 course names
- Of these, only 26 URLs were submitted
- Not all URLs submitted necessarily point (directly) to actual course syllabi
- See Appendix C



Stats: Curricular Models

- We captured the names of 5 bodies which offer advise on how to build ontology-related curricular content
- Of these, only 3 URLs were offered



Stats: Institutions

- We captured the names of 34 institutions
- From 9 different countries In the order they were entered: USA, UK, Germany, Belgium, Brazil, Iran, Italy, Japan, Netherlands
- (Apparently Ohio and California are now countries 😊)
- Most of the names of units, and URLs to institutions and units were captured



Stats: Accreditation— Program

- We captured the names of 9 accreditation bodies
- Of these, only one is missing an URL pointing to it



Stats: Accreditation— Institutions

- We captured the names of 9 accreditation bodies
- Of these, only 3 are missing an URL pointing to it
- See Appendix D



Stats: Certification— Professionals

- We captured the names of 4 bodies that accredit Ontologists as professionals with their corresponding URLs
- See Appendix E



Respondent Comments

- We captured 17 final comments
- See Appendix F



Appendix A

- Survey questions follow



Ontology Summit 2010: Content+Quality Presently

The context of this survey is the "**Ontology Summit 2010**" (OS10), whose theme is "Creating the Ontologists of the Future."

Information about OS10 can be found at <http://ontolog.cim3.net/cgi-bin/wiki.pl?OntologySummit2010> (link will open in a new window)

OS10 focuses on three tracks: Content, Quality, and Requirements. This survey is associated with the tracks: current ontology-centered curricular content, and current quality assurance. We have defined the mission and questions we seek to answer in connection with these two tracks as follows.

Track Label: Content - **Subtrack Label:** Present

Mission: The track mission is to survey the existing provision of ontology education with regard to curricular content.

Pertinent questions: Which educational programs are there, if any, that are mainly or entirely devoted to ontology and related topics? Within other educational programs, what modules/courses are there which are mainly or entirely devoted to ontology and related topics? Are there any other programs or modules/courses with sufficient ontologically relevant content? Are there curricular models (a.k.a. curricular guidelines) that include ontology-related topics?

Track Label: Quality - **Subtrack Label:** Present

Mission: The track mission is to survey the existing forms of quality assurance (e.g., accreditation, certification, and licensure) for programs, and professionals.

Pertinent questions: By what bodies, if any, are the programs identified as having substantial ontological content currently accredited? By what bodies, if any, are ontology professionals currently certified? What other forms of quality assurance exist that may be relevant to the track mission?

The answers you provide when responding to this survey will be used to produce a report which will be presented at the Ontology Summit 2010 Symposium, which will be held at the National Institute for Standards and Technology (NIST: <http://www.nist.gov/index.html>), located in Gaithersburg--Maryland, USA--on March 15th and 16th, 2010. This event will be part of the 2010 NIST Interoperability Week.

Please, feel free to forward the URL to this survey to (and/or answer this survey on behalf of) colleagues you know who are associated with ontology-related

programs (academic, professional, vocational, etc.)

If you have any questions about this survey please contact the following individuals:

Dr. Antony Galton (School of Engineering, Computing, and Mathematics. University of Exeter, UK): A.P.Galton@exeter.ac.uk

Dr. Arturo Sanchez-Ruiz (School of Computing, University of North Florida, USA): ASanchez@unf.edu

Emphasis on Ontology-Related Contents. This question attempts to identify how your program emphasizes Ontology-centered concepts. Please select one of the options given below.

We are very conscious that in a world-wide context there is much scope for possible confusion arising from the use of different terms to describe key units of educational provision. For this summit we aim to use US terminology consistently as much as possible, and we would be grateful if participants from outside the US could draw our attention to variants that exist in other parts of the world that they are aware of.

In standard US usage the main terms used are:

– **Program:** a collection of inter-dependent curricular elements (a.k.a. "Courses"--see the definition below) which typically culminate in a degree (e.g., BS, MS, PhD) or a certificate, in a major. The "Major" of a program is usually associated with a discipline (e.g., "Computing", "Engineering", etc.) Some educational institutions in the US use terms such as "Concentration" and "Track" with a meaning that is akin to that of "Program," in the sense that "Concentrations" and "Tracks" do culminate in a degree or a certificate, in sub-area of a major. Consider, for example, a "BS in Information Systems" (as a sub-area of Computing.) In some US universities this program could be also called "BS in Computing with a Concentration in Information Systems;" or "BS in Computing - Information Systems Track." For the sake of completeness, our definition of "Program" encompasses professional and/or vocational training programs which are not offered by an educational institution.

– **Course:** a cohesive curricular element that is offered by an institution as part of one or more programs.

In the UK, terminology varies somewhat across institutions. "Course" is generally used to mean a Program (for which this term is also used, but spelt "Programme"). What the US calls Courses, the UK typically calls either "Units" or "Modules."

m My institution offers a program which is Ontology-centered (e.g., "BS in Ontology Engineering")

m My institution does not offer a program which is Ontology-centered, but does offer courses which are Ontology-centered (e.g., a course called "Applications of Ontologies to Software Engineering", as part of a "BS in Software Engineering")

m My institution does not offer a program which is Ontology-centered, does not offer courses which are Ontology-centered, but does offer courses that discuss Ontology-centered concepts (e.g., ontologies are studied as part of a course entitled "Introduction to Artificial Intelligence", which is part of a "BS in Computer Science")

m None of the above

Please enter the name of the program which contains the courses (or select "Does not apply").

- Name of the Program _____
- Does not apply

Please select/enter the type of program (or select "Does not apply").

- Academic Degree (issued by an academic institution)
- Academic Certificate (issued by an academic institution)
- Professional/Vocational Certificate (issued by a non-academic institution)
- Other (please enter the type of program and provide a brief explanation)

-
- Does not apply

If your program offers a degree, please select/enter the type of the degree. Otherwise, please select "Does not apply".

- Associate (2-year undergraduate degree)
- Bachelor (please enter the number of years) _____
- Masters (graduate degree)
- Ph.D. or Equivalent (post-graduate degree)
- Other (please enter the acronym and its definition) _____
- Does not apply

If the program does not offer a degree, please select/describe its level, or select "Does not apply".

- Undergraduate
- Graduate
- Professional/Vocational
- Other (please describe) _____
- Does not apply

Please select/describe the main discipline with which this program is associated; or select "Does not apply".

- Computing
- Engineering
- Mathematics
- Physics
- Medicine
- Biology
- Philosophy
- Library Sciences
- Other (please describe) _____
- Does not apply

If known, please enter the URL to the website associated with this program; or select "Not available/Not known".

- Enter URL to program's website _____

m Not available/Not known

If known, please enter the name and URL to the course descriptions/syllabi of up to 10 ontology-related courses which are part of this program. (Note: if the course name or URL is not known, please leave the text box empty)

Course name 1 _____

URL 1 _____

Course name 2 _____

URL 2 _____

Course name 3 _____

URL 3 _____

Course name 4 _____

URL 4 _____

Course name 5 _____

URL 5 _____

Course name 6 _____

URL 6 _____

Course name 7 _____

URL 7 _____

Course name 8 _____

URL 8 _____

Course name 9 _____

URL 9 _____

Course name 10 _____

URL 10 _____

Ontology-Related Curricular Models/Recommendations/Guidelines.

Curricular models/recommendations/guidelines offer advise on how to build curricular contents associated with a discipline/sub-discipline. For instance, the Association for Computing Machinery (ACM), and the Computer Society of the Institute for Electrical and Electronics Engineers (IEEE-CS), have put together several of these. See, for instance:

(a) <http://www.acm.org/education/curricula-recommendations>; and

(b) <http://www.computer.org/portal/web/education>. Please enter the information of up to 5 institutions you are aware of which offer curricular models/recommendations/guidelines for ontology-related curricular content.

Under "Level of recommendation", the options refer to ontology-related recommendations at the level of: (1) the program (enter "Program"); (2) courses within the program (enter "Courses"); and (3) topics within courses of the program (enter "Course Topics")

Name of Institution 1 _____

URL to its website _____

Name of the program/s (if more than one, please separate the names by using a semicolon) _____

Level of recommendation (enter "Program", "Courses", "Course Topics")

Name of Institution 2 _____

URL to its website _____

Name of the program/s (if more than one, please separate the names by using a semicolon) _____

Level of recommendation (enter "Program", "Courses", "Course Topics")

Name of Institution 3 _____

URL to its website _____

Name of the program/s (if more than one, please separate the names by using a semicolon) _____

Level of recommendation (enter "Program", "Courses", "Course Topics")

Name of Institution 4 _____

URL to its website _____

Name of the program/s (if more than one, please separate the names by using a semicolon) _____

Level of recommendation (enter "Program", "Courses", "Course Topics")

Name of Institution 5 _____

URL to its website _____

Name of the program/s (if more than one, please separate the names by using a semicolon) _____

Level of recommendation (enter "Program", "Courses", "Course Topics")

Identifying the institution. All curricular content questions referred to ontology-related courses offered by your institution. Please identify your institution by entering the following information

Name of Institution _____

Location (City) _____

Location (Country) _____

Name of Unit within Institution (e.g., Department of, School of, Division of, College of, etc; or N/A) _____

URL to website of Institution _____

URL to website of Unit (if different from website of institution)

Quality Assurance: Program/Curricular Level. If your program is accredited (which usually happens at the level of the inner-most unit housing the program,) please describe the accrediting body by entering its name and the URL to its website (if known.) Please leave the text boxes empty if this does not apply to your program.

Name of accreditation body _____

URL to accreditation body's website (if known) _____

Quality Assurance: Institutional Level. If your institution is accredited, please describe the accrediting body by entering its name and the URL to its website (if known.) Also, please include a brief comment indicating how this institutional accreditation is related to the ontology-related curricular content offered by your institution. Please leave the text boxes empty if this does not apply to your institution.

Name of accreditation body _____

URL to its website (if known) _____

Briefly explain the relationship between this accreditation and the ontology-related curricular content offered by your institution

Quality Assurance: Ontologists as Professionals. If you know of any organization/s that certifies/certify ontologists as professionals, please use the text boxes below to enter the information of up to 5 of such organizations

Name of certification organization 1 _____

Name of certificate _____

URL to organization's website _____

Name of certification organization 2 _____

Name of certificate _____

URL to organization's website _____

Name of certification organization 3 _____

Name of certificate _____

URL to organization's website _____

Name of certification organization 4 _____

Name of certificate _____

URL to organization's website _____

Name of certification organization 5 _____

Name of certificate _____

URL to organization's website _____

Final Comments. Please include any relevant comments related to ontology contents and quality assurance you are aware of, which have not been covered by this survey

Contact Information. Please share with us the contact information we will use, should we need to contact you (or the person on behalf of whom you responded this survey.)

Thank you very much for your time and cooperation!

Contact name _____

Contact email address _____

URL to contact's website _____

Appendix B

- Reported URL to programs follow



Ontology 2010 Summit

Survey: Content + Quality – Presently

URLs to Programs

<http://www.unf.edu/cccec/cis/SoChtml/SoCSoftEngMS.08.html>
<http://www.bath.ac.uk/comp-sci/undergraduate/comp-sci/index.html>
<http://www.informatik.uni-leipzig.de/~brewka/gk/indexeng.html>
<http://www.ucdmc.ucdavis.edu/informatics/>
<http://www.uniriotec.br/ppgi>
<http://www.uff.br/cienciainformacao>
<http://www.informatik.uni-hamburg.de/Info/Studium/MSc/>
<http://www.secam.ex.ac.uk/applied-artificial-intelligence.dhtml>
EMCL <http://www.computational-logic.eu/home.php> and
Semantic Web <http://www.unibz.it/en/inf/progs/mcs/studyplans/SW.aspx>
<http://ksg-projects.meraka.csir.co.za/ksg-projects/events/moss09/>
<http://www.eci.ufmg.br/ppgci/>
<http://www2.cin.ufpe.br/site/secao.php?s=3&c=31>
<http://ontolog.cim3.net/cgi-bin/wiki.pl?WikiHomePage>
<http://www.eci.ufmg.br/ppgc>
<http://www.iakm.kent.edu/>
<http://www.ucdmc.ucdavis.edu/informatics/>
<http://csee.umbc.edu/>
<http://www.ccs.neu.edu/graduate/degreeprograms/mscompsci.html>
<http://www.hss.cmu.edu/philosophy/courses-descriptions.php>
<http://www.few.vu.nl/en/current-students/masterprogrammes-a-z/artificial-intelligence/index.asp>
<http://bmi.stanford.edu>

Appendix C

- Reported course names and URLs follow



Ontology 2010 Summit

Survey: Content + Quality – Presently

URLs to Courses

[Engineering of Software II](#)[CM30174 Intelligent Agents](#)[Formal ontology in medical information systems](#)

MHI289F Knowledge Management

Fundamentals of Database Systems

CS 401 - Advanced Bioinformatics: Anatomical Ontologies

Knowledge and Ontology Engineering

[Modeling Knowledge Domains](#)[MA in Philosophy with Concentration in Ontology](#)[Seminar on Ontologies](#)[Ontology for Information Systems](#)[Semantic Web Technologies—General](#)[Semantic Web Technologies—Ontology Engineering](#)

Mathematical Foundations

[Data Mining and Bio-Informatics](#)[Ontologies & the Semantic Web](#)

Foundations for Information Semantics: Logic and Logic Programming

[Knowledge and Ontology Engineering](#)[Knowledge Organization Systems](#)

MHI289F Knowledge Management

[INFS 770 Knowledge Management for E-Business](#)[Managing Software Development](#)[Modal Logic](#)[Open Information Systems](#)

Ontology 101

Ontology Engineering

Modeling biomedical systems

[Ontological engineering](#)

ECS 268 SCIENTIFIC DATA AND WORKFLOW MANAGEMENT

[PhD in Philosophy](#)

Knowledge Representation and Ontologies

Description Logics

[Metaphysics](#)

Introduction to Information Semantics: Ontologies, Semantics, Knowledge Representation, and the Semantic Web

ECS 268 SCIENTIFIC DATA AND WORKFLOW MANAGEMENT

INFS 770 Intelligent Agents and the Semantic Web

[Knowledge-based Systems](#)

Introduction to the Ontology Definition Metamodel

Knowledge Engineering and Management

[Computational Logic](#)

Ontology based data management

[Ontology for Geographic Information Science](#)

Advanced Information Semantics: Ontology Engineering, Ontology Lifecycle Management, and Ontology Applications

[Foundations of Artificial Intelligence](#)

Intelligent Web Applications

Ontologies and databases

[Dispositions and Powers](#)

[Natural Language Processing](#)

[Problems in Ontology](#)

[Methods of Software Development](#)

[Problems in Ontology](#)

Appendix D

- Reported institution-accrediting bodies follow



Ontology 2010 Summit

Survey: Content + Quality – Presently

URLs to Institution-Accrediting Bodies

[ABET](#)

[British Computer Society](#)

[VLIR](#)

[ASIIN e.V.](#)

The ministry of education in Rome gives the final approval (after the faculty and the senate)

[CAPES](#) - Coordenação de Aperfeiçoamento de Pessoal de Nível Superior

[Ministries of Education and Science & Technology](#)

[Iran Ministry of Science, Research and Technology](#)

[Computer Science Accreditation Commission \(CSAB\)](#)

Appendix E

- Reported professional certification bodies follow



Ontology 2010 Summit
Survey: Content + Quality – Presently
Professional Certification Bodies

[TopQuadrant](#)

[Semisphere](#)

[Laboratory for Applied Ontology, University of
Trento](#)

[State University of NY at Buffalo](#)

Appendix F

- Final comments offered by respondents follow



Ontology 2010 Summit

Survey: Content + Quality – Presently

Respondents' Final Comments

(Verbatim quotes)

1. None at this point. Great job! :-)
2. In my opinion, this is still a very immature area, and it is not clear that it is ripe for formalisation.
3. This survey is clearly not intended for many (dare I say "most") of the members of the Ontolog community (Peter Yim) or many of the potential (industrial) participated in the upcoming Ontology Summit. I was looking for an opportunity to provide some input on what kind of subjects pertain or contribute to ontology development - no such opportunity here.
4. I appreciate your work on this, as I see the need to share experiences in teaching issues on ontology and would like to share materials as well.
5. I am a Ph.D. student and working in the area of mapping biology knowledge with regard to education. I follow mostly the ontology literature, obo, ro community for my work. I shall be really interested to get involved in the initiative of establishing education and curricular material in ontology. thankyou.
6. I am not aware of any ontology content quality assurance. I had to develop the second part of the Semantic Web Technologies course, and it was imposed on me that it had to have 2 lectures on OWL, 5 on ontology engineering, and 5 on SemWeb for the Life sciences (so I could not properly treat all the introductory ontology topics that I think should have been in the curriculum). I did look around quite extensively to see what others taught, noticed a very large diversity, and that, basically, the lecturer chooses the course content to match their own specialties. Regarding possible contents, I have compiled a separate document about a year ago, which contains some considerations on learning outcomes, basic and advanced topics, and a more comprehensive list of official courses and additional tutorials at summer schools given by members of the KRDB Centre that bear some relation to "ontology engineering". I will send this file separately.
7. I am not sure if the expression "Information Science" in Brazil has the same conotation as it has in other countries. As far as I know, there are three distinctive "lines" inside what is called IS here: studies related to sociology (information and society), studies related to library science (organization of information), and studies related to management of information in organizations (knowlegde management ans related technologies). The ontologies research generally falls under the two last lines mentioned.
8. I am delighted that this survey is being made. I don't think anyone has a good grasp on who is teaching what (in Ontology) around the world now. Thanks for putting this together.

9. I am not affiliated with any organization at present that grants a degree in ontology. I would have liked your survey to also ask the opinion of what ought to be (in current or near term time frame) the content of degree or certification or vocational training programs especially workshop and collaborative educational ontology activities in these days of multi-modal learning opportunities.
10. Up to my best knowledge, the only ontology engineering course in Iran is taught in Shahid Beheshti University but there are many other courses which are related to ontologies in part and are taught in many universities such as artificial intelligence and semantic web course in BS program and natural language processing and information retrieval courses in MS program.
11. Most of the questions were irrelevant and should not have been asked after some of my initial answers. Minor annoyance.
12. IAKM program is a multi-disciplinary program, so it is difficult to answer some of your questions. IA or KM does not have accreditation body. The administration home of the IAKM is the School of Library and Information Science.
13. Apologize for the incomplete response, am a practitioner in a different domain - one that needs ontologies to help get our semantics straightened out. But not connected with an institution as needed for this survey
14. You have allowed space to describe only one program at the institution. There is more than one program at my school that offers ontology-related content.
15. While I recently joined Carnegie Mellon University, I have no direct knowledge of the offerings, so my answers in this survey are by no means authoritative.
16. Given that a number of us have give professional training, yet are not academic, you might have considered creating a branch of this survey to cover us.