

Information Competencies for Students in Design Disciplines

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1. INTRODUCTION

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by Jeanne M. Brown, with input from Jennifer Parker, Alan Michelson and Barbara Opar

A. Scope and purpose of this document

The document *Information Competencies for Students in Design Disciplines* is intended to serve two practical functions: assist librarians serving students in design disciplines to develop information competencies in a systematic fashion, and form the basis for discussions with design faculty on integrating these competencies into the curriculum.

We made the decision to organize the competencies chronologically, rather than in the order of the ACRL standards, in order to better meet the goals of the drafting group. Although the original ordering was by year (first year through graduate), feedback from design librarians suggested that a basic-intermediate-advanced designation was preferable.

The definition of competencies ranges from skills in dealing with certain types of information to familiarity with specific core reference titles.

B. Disciplines and fields of study included

The following disciplines are addressed in this document: architecture, architecture history, art history, studio art, landscape architecture, interior design, fashion, planning, and museum studies. Additional design disciplines may be added at a later date.

Upon completion of individual drafts for each discipline, and after feedback from design librarians, it was determined that many of the competencies included were applicable to students in all design disciplines. These were separated out into “general” competencies for all design-discipline students. The general design competencies precede competencies specific to a discipline. There is unavoidable overlap in some cases among the disciplines (for instance, more than one design discipline must be familiar with the *Avery Index*). However, this overlap is seen as both necessary and desirable, in the creating of a set of competencies that librarians in specific disciplines can use.

C. Relationship to the ACRL *Information Literacy Competency Standards for Higher Education*

The ACRL *Information Literacy Competency Standards for Higher Education* forms the foundation for the design student competencies in this document. Librarians forming the group which originally drafted these competencies are quite familiar with the ACRL document, and have used its outcomes in information literacy activities for their disciplines. After the information competencies for design students were drafted, each competency was examined to determine which ACRL standard and outcome it addressed. A separate document is available which shows those correspondences.

In addition to *Information Literacy Competency Standards for Higher Education*, disciplinary competencies developed for other-than-design disciplines were examined. In particular, Standard 5 developed by the Association of College and Research Libraries ALA/ACRL/STS Task Force on Information Literacy for Science and Technology proved extremely relevant to the professional design areas.

<http://www.ala.org/ala/acrl/acrlstandards/infolitscitech.htm>.

D. Design organizations and information literacy issues

1. Architecture

The two preeminent organizations in architectural education, ACSA (Association of Collegiate Schools of Architecture) and NAAB (National Architecture Accrediting Board), while not specifically referencing the term “information literacy”, identify areas in which information skills are critical.

The Association of Collegiate Schools of Architecture established an Education Action Plan Task Force whose April 2005 report in the *ACSA News* indicated the explosion of knowledge as the first item on its list of four areas in need of investigation. In addition to the explosion of knowledge, areas three and four also relate to the information needs of successful design students. Extension into lifelong learning, area three, points out the need for skills which extend past a student’s academic career. Area four, expanding futures of students, relates to the need for students to learn to incorporate the knowledge and research from disciplines outside of architecture.

The National Architecture Accrediting Board in its *NAAB Conditions for Accreditation for Professional Degree Programs in Architecture 2004* specifies criteria for learning which must be addressed in every accredited architecture program. Some of the criteria which offer strong linkages to information literacy standards and design student competencies are:

3.1.2 Architectural Education and the Students: Included in this paragraph is “... the APR may explain ... their access to the information needed to shape their future ...”

3.1.4 Architectural Education and the Profession: Included in this paragraph: “The accredited degree program must demonstrate how it prepares students to practice and assume new roles and responsibilities in a context of increasing cultural diversity, changing client and regulatory demands, and an expanding knowledge base. ...the APR may include an explanation of ... how students gain an awareness of the need to advance their knowledge of architecture through a lifetime of practice and research....”

3.9 Information Resources: In addition to developing and managing collections, architecture librarians and visual resource professionals should provide information services that promote the research skills and critical thinking necessary for professional practice and lifelong learning.

3.13 Student Performance Criteria (criteria selected are especially relevant to information literature)

- 2. Critical Thinking Skills: Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test them against relevant criteria and standards.
- 4. Research Skills: Ability to gather, assess, record, and apply relevant information in architectural coursework.
- 11. Use of Precedents: Ability to incorporate relevant precedents into architecture and urban design projects.
- 30. Architectural Practice: “... understanding of trends that affect practice, such as globalization, outsourcing, project delivery, expanding practice settings, diversity, and others.”

2. Landscape Architecture

The American Society of Landscape Architects, in conjunction with the Canadian Society of Landscape Architecture, the Council of Educators in Landscape Architecture, the Council of Landscape Architecture Registration Boards, and the Landscape Architectural Accreditation Board issued a report in October 2004 titled *Landscape Architecture Body of Knowledge: Study Report*.

<http://www.csla.ca/eng/engdocs/pdfs/education/LABOK%20Report%20with%20Appendices.pdf> Introductory comments prepared by Sara Katherine Williams on behalf of the LABOK Task Force point out that “with ever-expanding knowledge and technology, with ever more multifaceted information and understanding of our world, the “body of knowledge” that is expected of landscape architects, the core knowledge that helps define our profession, becomes somewhat daunting in its breadth, depth, and complexity.”

The Landscape Architecture Accrediting Board’s 2005 accreditation document section nine states “Faculty, students, and staff shall have access to facilities, equipment, library and other information systems necessary for conducting professional studies.” It further details that “courses integrate library and other information systems.” Although this is often interpreted as collections, an argument can be made under this section for instruction to be integrated as well.

3. Interior Design

The Council of Interior Design Accreditation (formerly The Foundation for Interior Design Education Research) also seems to recognize the changing information environment, although they do not refer to “information” specifically. The Preamble to the 2006 Professional Standards states that “it is important to acknowledge the ever-changing nature of the education required for a growing profession. ... New technologies affect the skills and knowledge required of interior designers. The best preparation for the future is an education that will enable graduates to adapt to a changing world.” Although the only time the Standards mention “lifelong learning” is in the Definition of Liberal Arts and Sciences, other readings on the needs of the interior design profession do include lifelong learning as a key component (such as the NCIDQ piece in [*Interiors and Sources*](#) magazine June 2003).

Relevant sections from the *CIDA Professional Standards 2006*:

Preamble: Educational philosophies and goals should be applied in the development of a creative professional who can synthesize information, and analyze problems from many different perspectives. ... The best preparation for the future is an education that will enable graduates to adapt to a changing world.

Standard 2: The program leads students to develop the attitudes, traits, and values of professional responsibility, accountability, and effectiveness. Indicators include. The program MUST include learning experiences that incorporate: e. critical, analytical, and strategic thinking.

Standard 4: Students understand and apply the knowledge, skills, processes, and theories of interior design. Indicators include: Student work MUST demonstrate programming skills, including: ... information gathering research and analysis (functional requirements, code research, sustainability issues, etc.).

Standard 6: Students design within the context of building systems. Students use appropriate materials and products. Indicators include: m. Students MUST demonstrate knowledge of sources for materials and products.

Standard 8: Students have a foundation in business and professional practice. Indicators include Students MUST demonstrate understanding of project management practices: d. information management (collecting and disseminating relevant project information).

Standard 10: Program facilities and resources provide an environment to stimulate thought, motivate students, and promote the exchange of ideas. Indicators include: Students have convenient access to a comprehensive and current range of: d. information about interior design and relevant disciplines (for example, bound volumes, periodicals, microfilm, video, slides, electronic). e. product information (bound, electronic, or on-line) and samples.

E. Information literacy in the studio arts

1. *Studio arts* – by Jennifer Parker

Analyzing and assessing the information needs of studio artists and other design disciplines that focus primarily on creative output rather than traditional “research” is a challenge. The National Association of Schools of Art and Design (NASAD) in their handbook of 2005-2006 states that “The institution shall place importance on the development and maintenance of library, learning, and information resources to support its undergraduate and graduate curricula in art and design.” However, there is no section in the document that discusses research, library instruction, or information literacy. This leaves librarians who work with studio artists without a professional mandate on information literacy that often occurs in other design disciplines.

In the past studio artists have been slow to recognize the importance and significance of the library to their creative process. Artists must be able to articulate their ideas with creative and written expression. The advent of the internet has both helped and hurt the librarian who works with studio artists. The common belief is that everything is available on the internet. It has only been recently that artists/faculty have recognized that their students are unable to differentiate between valid and invalid information. For the studio arts student, getting them physically into the library can prove the greatest challenge. Current literature on the topic is sparse but information that does exist shows that librarians are using a variety of creative techniques from using the library as a showplace for student work to holding classes in the library.

Regardless of the lack of mandate by the governing association and recognition by the artists themselves, librarians have sought to introduce research skills and information literacy into the curricula of the studio arts program. In the last few years several studies have sought to ascertain the research needs of the studio artist. Research on the topic has concentrated on case studies and interviews with student and faculty artists in order to ascertain their research needs. It is understood that the studio artist has unique research habits including using library resources and inspiration and a focus on image research rather than textual. Due to the interaction of the librarians with the studio artist, many are starting to recognize the importance of incorporating the art librarian into their instruction. Recognizing that artists will need to research and write about their work to have successful careers, artists who teach in higher education institutions are starting to utilize the art librarian as a guide towards creating information literate students.

F. Information literacy in design curricula

[*Note: This section of the document will be expanded as more is learned. The following represent some preliminary findings for two of the disciplines.*]

1. *Architecture* – by Jeanne Brown

Judging from a discussion on the state of instruction in architecture school libraries, held at the Association of Architecture School Librarians Conference in Salt Lake City, March 31, 2006 (<http://www.library.njit.edu/archlib/aasl/meetings/2006/aasl-2006-instruction-status-presentation-notes.doc>), and a survey of architecture school librarians conducted by Jeanne Brown prior to the meeting (<http://www.library.njit.edu/archlib/aasl/meetings/2006/aasl-2006-instruction-survey.doc>), most architecture school librarians do not have an instruction program that systematically covers all years of the students' academic career and is increasingly sophisticated. The most common mode of operation is to respond to requests from faculty to address specific class assignments. The students most likely to receive instruction in information skills are first year undergraduates. First year graduate students are also a target for many architecture school librarians.

Few who answered the survey (referred to above) base their instruction specifically on information literacy standards. Some noted that information literacy standards are used by general courses, not courses in the discipline. It seems a logical conclusion that – at least up to the present time – the institution's commitment and involvement in information literacy determines the placement and extent of information literacy components in the curriculum.

Though this description indicates that there is much that can be accomplished in the area of disciplinary information competencies, it should not obscure the extensive involvement of individual architecture school librarians, as evidenced in their instruction web pages, components of which support instruction in the information competencies:

www.lib.berkeley.edu/ENVI/Guides.html

www.lib.utexas.edu/apl/guides.html

www.library.gatech.edu/architect/tutorial.html

<http://www.library.unlv.edu/arch/instr/>

2. *Landscape architecture* – by Alan Michelson

Efforts by librarians and faculty to incorporate information literacy principles into landscape architecture curricula have been sporadic in the United States, and often geared to lower division students. At the most basic level, librarians have added information literacy links to their subject reference web pages, links that direct students to general library tutorials on the subject. An example is the *Library Course Guide for Landscape Architecture*, at the University of Massachusetts, Amherst.

(<http://www.library.umass.edu/instruction/courseresources/larpguide.html>) Sometimes, librarians will refer to other schools' information literacy pages. The *Internet Resources* page at SUNY-ESF, Syracuse, NY, includes links to Syracuse University Library's and SUNY-Albany Library's *Evaluating Web Materials* pages.
(<http://www.esf.edu/moonlib/links.htm#Anchor-Phone-21683>)

Librarian Walter Punch teaches a course called, *Information Literacy and Research in Landscape Studies* at the Arnold Arboretum, Harvard University. This course is included in the curricula of the Certificate Programs in Landscape Design, Landscape Design History, or Preservation. The catalog describes the course as follows:

“This module introduces students to resources, both electronic and paper, and procedures for doing research in all aspects of landscape design and history. Students will investigate relevant materials including reference works, databases, periodicals, reports, archives, association literature, government documents, monographs, special collections, and the media. They will examine the best methods of structuring and presenting their findings as a paper or project. This course is especially helpful for those with little background in research or who have not done academic work for some time. There will be weekly readings and other assignments and a final research paper is required.

This program is separate from the landscape architecture curricula of the Graduate School of Design at Harvard; it is meant for part-time students who generally finish the course and gain the certificate in three-five years.
(<http://www.arboretum.harvard.edu/programs/ld/history.html>)

Adoption of specific information literacy standards by landscape architecture faculty has been sparse in U.S. universities. Most departments have general education requirements for undergraduates that include a course or two in rhetoric and composition. (Whether these address specific information literacy concepts is not always clear.) Landscape Architecture majors at the Utah State University must pass two “Communications Literacy” courses. University of Connecticut landscape architecture majors must pass *English 110, Seminar in Academic Writing*, that is designed in part to develop “critical literacy.”
(<http://www.canr.uconn.edu/plsci/la/planofstudy.html>) The concept of critical literacy includes developing research skills and recognizing plagiarism, but it is unclear how thoroughly this course fulfills ACRL Information Literacy Standards. In fact, I could find no specific mention of these standards on any university web page in landscape architecture.

Lower division undergraduates at the State University of New York College of Environmental Science and Forestry (ESF) at Syracuse, NY, take a one credit course called, *ESF 200 Information Literacy*. This course, taught by Betsy Elkins, Director of College Libraries at ESF, consists of six assignments and a final project.
(<http://www.esf.edu/moonlib/esf200.htm>)

Many graduate programs in landscape architecture include a requirement that students take a research methodology course, as at Penn State University, where all students take *LArch 501, Research Methods in Landscape Architecture*.

(<http://www.larch.psu.edu/AcademicPrograms/TheMLAProgram.htm>) Again, how deeply students in methodology classes develop information literacy skills will vary widely from school to school.

A search yielded only one course led by landscape architecture faculty that addresses the issue of information literacy. Dr. Kyle D. Brown, Director of the Center of Regenerative Studies within the College of Environmental Design, California State Polytechnic University, Pomona, has developed a course for MS students in regenerative studies called, *LA 565: Advanced Information Technology in Landscape Architecture*. This course concentrates on developing student skills in CAD and GIS, but a portion was devoted to inculcating “information literacy among students, which supports the careful and proper use of data and analysis tools and techniques.” It does not appear that undergraduate minors in regenerative studies at CSU Pomona take this class.

Some university faculties, such as that of Purdue University’s Department of Horticulture and Landscape Architecture, seem to be becoming aware of the concept of “information literacy.” Purdue’s online catalog noted: “The landscape architecture faculty is in the early stages of discussion and studying strategies for implementing information literacy throughout the curriculum. Information literacy instruction will enable our students to better access and assess information, critically analyze its validity and importance, and use it creatively and appropriately in their process of decision making and design.” “Information collection” was one of the seven skills that the department was hoping to instill in its landscape architecture graduates. The catalog indicated that “Information literacy is becoming a more important aspect of information collection. The student are [sic] given guidance on the selection of sources of information as well as how to critically assess its validity and its worth.” How to teach this skill, however, has not been finalized at Purdue.

G. Process of developing the competencies

The process has been a repeating cycle of drafting, soliciting feedback, and revising. The draft of competencies for architecture students was the first, and in some ways served as a model -- but it was not a required format, so there is some variance in approach.

An informal group has been working since early 2005 on developing drafts of core competencies for students in several of the design and arts disciplines. Drafts were available for feedback by the end of 2005. Feedback has been solicited from relevant associations and their members (specifically The Art Libraries of North America (ARLIS/NA), the Association of Architecture School Librarians, and ALA’s Arts Section). Design faculty and students have been contacted and feedback solicited, although this process has thus far been very limited. Revised documents were made available to the design library community in the fall of 2006.

2. BASIC SKILLS, KNOWLEDGE, AND AFFECTIVE COMPETENCIES

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A. Basic skills for all design students

Be able to:

ORIENTATION TO INFORMATION

- Recognize that the need for information varies according to context (e.g. academic or professional work; for an essay or to get ideas; for use in the library or remotely),
- Match search approach to information need: academic library databases, Internet search engines (e.g., *Google*), etc.,
- Match sources to information need: books for some types of information, articles for other types, web sites for yet other types of needed information.

LIBRARY ORGANIZATION / ACCESS

- Navigate around the library,
 - Locate books and periodical sections in the library.
 - Use signage, maps, and user guides to locate library collections and services.
 - Use a call number to locate a book or periodical.
- Use the library's classification system to physically or electronically browse for books on a specific topic,
- Access library reserve materials (both physical reserves and electronic reserves),
- Access library databases remotely,
- Read and accurately interpret a periodical holdings statement,
- Interpret information in the online catalog so as to differentiate between journals available in print or electronically,
- Find a specific article in print or electronically,
- Navigate the library's web site.

SEARCHING

- Use the online catalog to locate books on a specific topic, using either subject (controlled vocabulary) or keyword searches,
- Use the online catalog to locate a book or a periodical when specific authors or titles are known,

- Use a periodical index to locate articles on a topic,
- Find images illustrating fundamentals of visual perception and design, by using a variety of image sources, including but not limited to Google Image Searching,
- Use the Internet to locate accurate and authoritative information.

EVALUATION / CITING

- Evaluate information and sources by such criteria as relevance and coverage, authority, accuracy, objectivity, currency, and peer review process,
- Analyze the record elements from search results and use to make choices as to which to pursue or eliminate (e.g. date, length, illustrations, where located),
- Accurately cite both digital and print sources according to a specified style guide,
- Properly assign credit for the source of information and ideas, avoiding even the appearance of plagiarism,
- Compile a bibliography which cites a variety of sources from multiple disciplines as appropriate,
- Summarize, organize, and synthesize the information found,
- Legally obtain, store, and use text and data, observing relevant copyright guidelines,
- Record all pertinent citation information for future reference,
- Use various techniques to manage selected citation information selected (e.g. RefWorks, EndNote).

MATERIALS NOT IN THE LIBRARY

- Determine local availability of items and use interlibrary loan or document delivery services as needed to obtain materials not held by home library or institution.

TOPIC

- Choose and refine a topic in a systematic way,
- Gather background information in books, encyclopedias and other reference works as needed, including specific terminology related to the topic,
- Develop a focused topic and strategies for obtaining needed information,
- Select and refine terminology to produce an effective search, using both keywords and controlled vocabulary terms,
- Identify key concepts and terms that describe the information needed,
- Review initial information needs to revise or refine the question.

SEARCH TECHNIQUES / SKILLS

- Distinguish among search engines, research databases, and the library online catalog to choose the approach most appropriate to the topic and information need: what do they search or index? do they themselves yield full-text information or are further research steps necessary? what is their scope and limits, and how does that impact the likelihood of relevant results?,

- Effectively use a search interface by appropriately using various search types such as keyword, phrase, title, and subject searches,
- Use keyword searching to identify subject terminology to produce more focused searches,
- Limit and/or expand searches using the capability of the search engine, index or catalog being used,
- Use database features to mark/save/print/email citations and link to full text,
- Effectively and patiently browse lists of results,
- Analyze search results from a variety of perspectives: why did I get these results? should different terms be used? how are results arranged? do results need to be expanded or reduced?,
- Revise topic and/or search strategy if search results are unsatisfactory,
- Determine whether the information satisfied the research or information need.

APPLICATION

- Manipulate digital text, images and data as needed, transferring appropriately to a new context,
- Communicate results of research clearly.

Be aware of:

- Assistance available from library staff and where to obtain it,
- Library policies and procedures
 - Procedures for printing, check out, and renewal of materials.
 - Procedures for copying and scanning.
 - Procedures available for book self-checkout, self-renewal, self-paging, managing library accounts online (availability varies by library).
 - Circulation procedures (i.e. which materials circulate and for how long).
 - Procedures for obtaining materials through document delivery.
- The physical organization of the library (or libraries if the campus has more than one) and the scope of its collections,
- Value and techniques of browsing (e.g. importance of table of contents, indexes, call numbers),
- Basic search engines, indexes, and the library catalog and how the information from each may differ,
- The need for different search strategies and techniques for search engines, indexes, and the library catalog; for web sites, articles and books,
- The definition and consequences of plagiarism,
- The likelihood of different outcomes depending on the type of search (e.g. subject versus keyword searches) and the value of each,
- Differences between scholarly peer-reviewed/ refereed journals, trade and popular magazines,
- Value of pursuing bibliographic references or “footnote chasing”,
- Differences between full-text and bibliographic databases,

- Information on the library website, including materials and links selected and prepared by library staff ,
- Existence of a variety of general and subject-specific print and web-based resources,
- Resources in other libraries and their availability through document delivery services,
- The time required to obtain materials through document delivery,
- Resources in other institutions (libraries, museums, archives, historical societies, professional associations, etc.),
- The possibility of recalling items and the time considerations involved,
- The various styles for citation form e.g. *Chicago Manual of Style*, *MLA Handbook*, etc.,
- The need for background information to formulate a topic,
- The fact that searching for information requires time, diligence, and practice, and that skills are learned over time.

B. Basic skills for architecture students

Be able to:

- Use the *Avery Index to Architectural Periodicals* to locate articles on discipline-specific topic,
- Use call numbers representing the major fields that are included in architecture studies: architecture (NA), landscape architecture (SB), planning (HT), construction (TH), and interior design (NK) to browse,
- Find images using a variety of sources (library print sources, internet, licensed databases such as *ARTstor*)
 - Illustrating fundamentals of visual perception and design.
 - To incorporate into a discipline-specific product.
 - To group into study sets.
- Find materials on specific buildings and architects,
- Identify and retrieve information on precedents,
- Use sources like the *Macmillan Encyclopedia of Architects* to locate additional information such as the name of the architect or style when only the building name has been provided,
- Identify appropriate campus sources (library and non-library) for architecture information on the locale or campus buildings,
- Select terminology resulting in an effective database search, using discipline-specific vocabulary,
- Apply copyright guidelines to use of images in paper and web assignments.

Be aware of:

- The different target audiences for architectural magazines and journals: scholarly, popular, trade and professional,
- The major journals in architecture and related fields, such as *Architecture*, *Landscape Architecture*, *Interior Design*, *Architectural Record*, *Architectural Review*,
- The major associations in architecture and related fields: the American Institute of Architects, the American Society of Landscape Architects, the American Society of Interior Designers,
- The value for architecture students in browsing new books and periodicals on a regular basis,
- Basic reference tools in architecture and related fields (e.g. architecture encyclopedias, dictionaries, time-saver standards),
- Sources of guidance on the library web site, e.g. online tutorials, bibliographies on specific topics, selected architecture web resources, etc.

C. Basic skills for architecture history students

Be able to:

- Differentiate between primary vs. secondary and popular vs. scholarly resources,
- Identify and locate scholarly materials for research in architectural history by using print and electronic resources (catalogs, dictionaries, encyclopedias, bibliographies, historical surveys, major citation sources, databases, etc.),
- Use print and electronic resources to define terms and analytical methods essential for research in architectural history,
- Use selected terminology to search the *Avery Index to Architectural Periodicals*, as well as other periodical indexes and databases to locate articles on a specific topic,
- Use print and electronic resources (books, periodicals, indexes, guides, databases, archival collections, Internet, etc.) for browsing or finding images of a particular building or works of a specific architect,
- Find information on fundamental elements of architectural forms, different structure types, various building materials, and specific design methodologies in historical context,
- Retrieve information on building typology and various historical styles (significant typological and stylistic precedents).

Be aware of:

- Materials in related fields and multidisciplinary resources,
- Museum and archival collections.

D. Basic skills for landscape architecture students

Be able to:

- Use the *Avery Index to Architectural Periodicals* to locate articles,
- Identify major journals in landscape architecture and related fields,
- Distinguish among the different target audiences for landscape architecture magazines: scholarly, popular and professional,
- Identify the major landscape architecture professional associations,
- Use the various subdivisions within the SB call number range to find materials on topics and subtopics,
- Find scholarly articles on specific gardens and landscape architects using footnotes,
- Identify appropriate campus sources (library and non-library) for horticultural information,
- Identify appropriate campus sources (library and non-library) for civil engineering information on such issues as drainage and or the construction of retaining walls,
- Use basic print reference tools in landscape architecture and related areas, such as *Time Saver Standards for Landscape Architecture*, *Dictionary of Landscape Architecture and Construction*, etc.,
- Select terminology resulting in an effective database search, using vocabulary common to the profession,
- Identify databases serving allied fields and understand how to use them to further interdisciplinary research, e.g. knowledge of *Agricola*, *BIOSIS*, *GeoRef*, etc.

Be aware of:

- Major call number sections for landscape architecture: SB, GV, HT, and other H sub-categories,
- State and local government websites,
- The locale and sources specific to its study,
- The multi-disciplinary requirements of landscape architecture,
- Current issues in the field,
- Professional leaders, major firms, etc.,
- Websites of main professional organizations, such as the American Society of Landscape Architects (ASLA), the Canadian Society of Landscape Architects (CSLA), or the American Association of Botanical Gardens and Arboreta,
- Titles available in print form in the reference section of the library.

E. Basic skills for art history students

Be able to:

- Access class-related visual resources available on campus,
- Identify and use a general art periodical index to identify articles on a topic,

- Distinguish the different target audiences for art & art history magazines/journals: scholarly, popular and professional,
- Find images of significant works in art history,
- Identify acceptable uses of images (e.g. copyright restrictions),
- Use image databases (e.g. *ARTstor*) to search for images and create image groups
- Find information about specific artists and art works,
- Identify scholarly articles based on information in an index record/citation,
- Differentiate between primary vs. secondary and popular vs. scholarly resources.

Be aware of:

- Call numbers representing visual & plastic arts,
- Existence of specialized journals in art history and related fields,
- Basic reference tools in art history and related fields (e.g. encyclopedias, dictionaries, etc.),
- Existence of specialized sources for topics outside of art history.

F. Basic skills for studio arts students

Be able to:

- Use the *Grove Dictionary of Art* to locate information on artists and artistic movements,
- Use *Art Full Text/Art Index Retrospective* to find articles on a particular topic,
- Use *Lexis/Nexis Academic* or equivalent general academic indexes to search for reviews of artists and exhibitions,
- Use the Internet effectively to search for information on an artist,
- Use *ArtBibliographies Modern* and *Bibliography of the History of Art* to locate articles, images, exhibition catalogs, dissertations, books, and reviews,
- Use library and Internet resources to locate images,
- Identify acceptable uses of images (e.g. copyright restrictions),
- Find specific images significant to the history of art,
- Use image databases (e.g. *ARTstor*) to search for images and create image groups.

Be aware of:

- The major journals, magazines, and zines for arts related topics,
- Basic reference tools for arts related topics,
- Call numbers representing the visual arts,
- Visual Resource Centers on campus,
- Special collections and what arts related materials may be located there,
- Digital image collections freely available online,
- The existence of university art collections and nearby public museums,
- The value of online museum collections for research and study.

G. Basic skills for planning students

Be aware of:

- The interdisciplinary nature of planning through a general overview of the diverse nature of periodicals, handbooks, databases, local/regional and government information sources that planners must consult,
- Library of Congress classification system as it relates to general planning materials: HT is the primary call number area with related fields as follows:
G Geography. Spatial analysis
GB Physical geography
GE Environmental studies
GF Human ecology
HB 850- Demography
HD 100-1400 Land use
HD 7280- Housing
HE Transportation
- Planning terminology and basic dictionaries and glossaries used in the profession; such as: *A Planners Dictionary*.
- How terminology can be used to effectively search in library catalogs/Internet: for example: cities, downtown, urban spaces, etc.,
- The American Planning Association, including its publications, resources, and web site, as well as professional certification information and resources,
- Selected key periodicals focused on planning,
- Key indexes and databases used for finding planning information for example: *Avery Index to Architectural Periodicals*, *Academic Search Premiere*, *Research Library*, *ABI/Inform*, *EconLit*, *Environmental Issues and Policy Index*, *Public Affairs Information Abstracts*.

H. Basic skills for fashion students

Be aware of:

- Fashion terminology and basic dictionaries and glossaries used in the fashion industry, such as:

Women's Wear Daily (WWD), Fashion Dictionary:

<http://www.wwd.com/dictionary/fashion>

Textile Terms from the Textile Museum:

<http://www.textilemuseum.org/PDFs/TextileTerms.pdf>

Apparel Search Glossary:

<http://www.apparelsearch.com/glossary.htm>

- How terminology can be used to effectively search library catalogs and the Internet. Ability to develop a thesaurus of words to be used as search terms (e.g., clothing, apparel, garment, etc),
- Library of Congress classification as it relates to fashion: GT - costume , TT – fashion,
- Basic fashion reference tools used to locate information (text and visual images) on individual designers, illustrators, photographers and major fashion centers/firms, industry information, historic costume and garment information. Selected resources may include: *Contemporary Designers/Contemporary Fashion, The Fashion Book, Who's Who in Fashion*, etc., and also online resources such as *Biography Resource Center*. Library web sites, such as the Fashion Institute of Technology provide resource lists that can be used as a foundation for individual programs and schools,
- Breadth of periodicals in the fashion industry and the importance of trade publications and foreign journals, including annual design collection publications as well as weekly and monthly trade and design resources,
- The existence of both electronic and print formats for resources,
- Key indexes and databases for locating information on fashion design and the fashion industry such as *Design and Applied Arts Index, Art Abstracts, Dow-Jones, ABI/Inform, Academic Search Premier, Applied Science and Technology Index, Business Source Premier, Lexis/Nexis*,
- Major fashion web sites as well as fashion resource libraries (e.g. Fashion Institute of Technology, New York Public Library, Vogue, WWD etc. and professional associations related to fashion industry).

I. Basic skills for interior design students

Be able to:

- Use *InformaDesign* database to stay abreast of current interior design research,
- Use appropriate periodical indexes (e.g. *Avery Index to Architectural Periodicals, DAAI, Art Index*) to locate articles on a topic,
- Use call numbers representing the major fields that are included in interior design studies: Decorative Arts (NK), retail stores (HF), lighting (TH and TK), decoration and decorative furnishings (TH 8001 – TH 9024) and architecture (NA) to browse,
- Find images within the library in hard copy sources (e.g. *Illustrating fundamentals of visual perception and design*, etc.),
- Find materials on specific interiors and designers,
- Identify and retrieve information on precedents,
- Identify appropriate campus sources (library and non-library) for interior design information on the locale or campus buildings,
- Use discipline-specific vocabulary to effectively conduct database searches,

- Use library and internet resources to locate images in the discipline in sources external to the library,
- Apply copyright guidelines to use of images in paper and web assignments,
- Use image databases (e.g. *ARTstor*, *Bridgeman Art Library*, *SPIRO*) to search for images and create image groups.

Be aware of:

- The different target audiences for interior design magazines and journals: scholarly, popular, trade and professional,
- The major journals in interior design and related fields, such as *Interior Design*, *IS: Interiors & Sources*, *Journal of Interior Design*, *Contract Design*, *Architecture*, *Landscape Architecture*, *Architectural Record*,
- The major associations in interior design and related fields: the American Society of Interior Designers (ASID), Council for Interior Design Accreditation (CIDA), Interior Design Educators Council (IDEC), International Interior Design Association (IIDA), the American Institute of Architects (AIA),
- The value for interior design students in browsing new books and periodicals on a regular basis,
- Basic reference tools in interior design and related fields (e.g. interior design encyclopedias, dictionaries, time-saver standards, codes, materials),
- Sources of guidance on the library web site (e.g. online tutorials, bibliographies on specific topics, selected interior design web resources, etc).

J. Basic skills for museum studies students

Be able to:

- Understand the history and philosophy of museums,
- Define what a “museum” is and what it is not,
- Explain what “museum theory” means,
- Use *Art Full Text* and other indexing databases to locate articles on a specific topic,
- Identify major journals in museum studies and related fields, such as *Curator*, *Daedalus*, *Museum and Society*, *Museum International*, and *Museums Journal*,
- Use print and electronic indexes to find appropriate images of a specific work of art or groups of images related to a specific artist or style or time period,
- Collect and utilize information and data on course-specific or specialized topics according to area of specialization (anthropology, archaeology, history, art, art history, education, law, and the sciences, etc.),
- Identify the basic elements of exhibit design,

- Identify the basic elements of collection management and how they are affected by different discipline-specific approaches (e.g. anthropology, archaeology, history, art, art history, education, law, and the sciences),
- Identify the basic elements of conservation, especially preventive versus treatment,
- Understand methods of evaluation,
- Identify and discuss basic museum ethics principles in a variety of case studies.

Be aware of:

- The role of museums in society and how they are perceived by various groups of people over time,
- The analogous terms “museum studies” (the study of museums) and “museology” (the study of the social, political, economic, and cultural context of museums),
- The interdisciplinary nature of museum studies and how many of its principles are drawn from and can be applied to different areas of study such as anthropology, archaeology, history, art, art history, education, law, and the sciences,
- The primary call number section for museum studies in research collections: AM,
- Major associations related to museums and related fields, such as: American Association of Museums, American Association for State and Local History, International Council of Museums, and National Initiative for a Networked Cultural Heritage,
- Ethical considerations according to a museum’s discipline (e.g. history museums, zoos, etc.),
- Current debates or issues confronting museums.

3. INTERMEDIATE SKILLS, KNOWLEDGE, AND AFFECTIVE COMPETENCIES

Version 3, July 2007

A. Intermediate skills for all design students

Be able to:

- Find multiple sources, and multiple types of sources, using appropriate research tools,
- Chose and formulate a research topic,
- Refine the search strategy as necessary,
- Employ complex search strategies to retrieve specific information,
- Develop a research plan appropriate to the investigative method,
- Use visual and print information to support one's own point of view,
- Identify specific issues related to the documentation and copyright of visual material,
- Identify faculty, librarians, and other persons or agencies who can be approached for advice and information on a project,
- Use materials and techniques appropriate to a long term project (such as extensive use of interlibrary loan, communication with scholars in the field, research logs or journals etc.),
- Plan, record, and refine search strategies in order to complete a semester-length project,
- Generalize acquired information and research skills to new situations and contexts,
- Apply ethical and legal principles to the use of information in all formats and contexts,
- Employ complex search strategies to retrieve specific information using Boolean operators and other strategies,
- Browse new books and periodicals on a regular basis; seek out the new book shelf,
- Organize information in a cohesive manner,
- Use other library and/or national/international catalogs such as WorldCat to search for additional sources,
- Determine whether it is cost effective to recall, place a hold, or submit an Interlibrary Loan request for a specific title,
- Describe the search process for a particular project, and specify successful and unsuccessful methods and strategies,
- Follow citations and cited references to obtain additional pertinent articles,
- Search relevant resources diligently and with increasing accuracy and self-confidence,
- Realistically determine the amount of time needed to research and produce a product,
- Analyze the context of information and how the context shapes the information and its interpretation.

Be aware of:

- The proper types of sources for the topic, and how format may affect usefulness,
- The conventions of requesting permission to publish visual documentation,
- Campus policies relating to computer use and information access.

B. Intermediate skills for architecture students

Be able to

- Collect information and data on course-specific or specialized topics such as:
 - Sustainable and energy efficient materials.
 - Sustainable design.
 - Socially responsible design.
 - New urbanism.
 - Traffic calming.
- Identify experts such as city or county officials, practicing architects, specialized associations, and others who can be approached for advice and information on a project,
- Find government materials documenting or describing a site or building,
- Effectively use various types of maps, atlases, and online geographic systems like GIS for site analysis,
- Identify organizations like HUD, the International Code Council, and the Building Officials and Code Administrators to locate appropriate model, local, state and international housing, building, construction and mechanical codes,
- Use handbooks on materials and systems as well as reference manuals produced by professional organizations (e.g., the American Institute of Timber Construction, the American Concrete Institute and the American Institute of Steel Construction) to gather general design data and recommended engineering practices for building materials,
- Consult appropriate reference works in the *Time Saver Standards* series as necessary to better understand site planning, building types, urban design and landscape architecture,
- Locate product information using the *Thomas Register* and *Sweet's Catalogs*, along with specific manufacturer's print and online publications,
- Locate and search appropriate reference works and databases for industry and government standards and specifications produced by organizations such as the National Technical Information Service, the American National Standards Institute, the American Society for Testing Materials and the International Standards Organization,
- Navigate the appropriate volumes of the *ASHRAE Handbook* to better understand heating, ventilation and air conditioning fundamentals, applications, systems and equipment,
- Use standards including appropriate building and housing codes, the *National Fire Codes*, the *National Electrical Code*, the *Life Safety Code*, and recommendations of

Underwriters Laboratories to determine appropriate methods, materials and means of fire protection, egress and general building safety,

- Locate handbooks as well as various industry and government recommendations for better understanding building operations and security design,
- Locate and utilize online and print cost calculators (e.g. *R.S. Means*) and estimating guides to select and specify appropriate building materials,
- Apply daylighting and energy conservation strategies in building design through the consultation of textbooks, reference works and databases on topics like solar radiation, solar design, shading and bioclimatic design,
- Practice access by design by consulting reference tools like Deborah Kearney's books on complying with the Americans with Disabilities Act, Wolfgang Preiser's *Universal Design Handbook* as well as reviewing texts on barrier-free environments, inclusive design and related topics such as senior living,
- Address sustainability issues by consulting texts and appropriate web sites on green building and investigating ways in which different materials like strawbale are being employed in design,
- Retrieve case studies relevant to assigned projects,
- Retrieve architecture and design materials by style, location, era,
- Draw on the literature of psychology and environment to retrieve materials relating to the connection between human behavior and physical environment,
- Distinguish among facts, points of view, and opinion – especially on controversial topics such as sprawl,
- Make use of discipline-specific guides for finding resources,
- Identify the intended audience(s) of an outlet for architectural information (e.g. a book, a scholarly or professional journal, a web site, a reference tool),
- Select the appropriate type of architectural publication for the information needed, or at least the best starting place,
- Test a theory or hypothesis using discipline-appropriate techniques (e.g. design drawing, peer and instructor feedback, interviews),
- Recognize that learning about information gathering is an ongoing process as the source, format, software requirements, and delivery of information changes and evolves with time,
- Transfer information access skills to new subject areas outside of architecture and related disciplines.

Be aware of:

- The variety of print and online reference tools available for architecture studies,
- Situations related to building projects in which individuals, including librarians or library staff, are the best source of information,
- Governmental bodies in the geographic area, with the range of information they provide and the means they use to distribute that information,
- Major sources for visual information, for site plans, elevations, floor plans, maps, etc.,
- The types of information needed for site analysis and programming, e.g. sun angles, topographical maps, zoning information, etc.,
- The existence of specialized sources for topics outside of architecture.

C. Intermediate skills for architecture history students

Be able to:

- Identify, locate and analyze scholarly materials in history of architecture and urban design,
- Locate materials for studying the development of architecture throughout history (changes in ideas, stylistic expression, building typology, building technique, etc.),
- Find materials to support analysis of a particular theoretical position in the course of architectural history,
- Understand the scope and limitations of various resources,
- Use general, historical, and art history indexes (*New York Times Historical*, *Historical Abstracts*, *America History and Life*, *Index to 19th Century American Art Periodicals*, *ArtBibliographies Modern*, etc.) to find information on a specific subject in architectural history,
- Collect visual and written documentation for detailed analysis of building systems by using print and web-based resources,
- Use print and online archival resources (*HABS/HAER*, historical maps, photographic collections, etc.) to find visual materials and data on existing architecture, visionary plans and unrealized proposals,
- Identify sources to analyze architectural monuments in a particular physical and cultural historical context,
- Collect visual and written documentation to provide detailed analysis of a specific historical building or a group of buildings by using print and web-based resources,
- Find primary source materials, either published or unpublished,
- Find government documents related to the history of architecture, urban planning, etc.

Be aware of:

- Existence of materials in languages other than English,
- Resources in related disciplines (history of art, religion, technology, society, public and private life, etc.).

D. Intermediate skills for landscape architecture students

Be able to:

- Use state and local government websites that offer various types of maps, contour, site, parcel, etc.,

- Identify experts in the field and practicing professionals for advice and information on a project,
- Find codes, such as accessibility guidelines,
- Find government materials in print documenting or prescribing a site and/or building,
- Access government documents that may exist on your project and where these are located; for example, where does one find environmental impact reports?
- Retrieve case studies relevant to assigned projects,
- Develop a vocabulary for online searches based on appreciation and knowledge of the history of landscape architecture,
- Draw on the literature of psychology and environment to retrieve materials relating to the connection between human behavior and landscape settings,
- Identify leading books aimed at helping landscape architects pass licensing exams.

Be aware of:

- The most useful state and local government websites governing statistics, codes and regulations,
- Meetings of local landscape architecture professional groups,
- The value of a research and ideas notebook,
- The basics of surveying,
- State websites that contain information on professional licensing and registration,
- The impact of local weather conditions on the region's landscape.

E. Intermediate skills for art history students

Be able to:

- Identify appropriate investigative methods in art history,
- Recognize sources associated with specific theoretical and critical perspectives in art history,
- Identify and use specialized reference sources in art history, e.g., subject dictionaries, Select controlled vocabulary specific to the discipline,
- Use appropriate subject-based style manuals and/or citation style formatting software,
- Use research collections beyond the local library when needed (e.g., special libraries and archives),
- Explore general information sources in related disciplines such as theology, history, anthropology,
- Use special features of subject databases, e.g., citation searching of art works in *Arts & Humanities Citation Index*,
- Perform cited reference searches in order to follow a research topic forward and backward in time,
- Conduct a comprehensive literature review for papers/projects, including books, journal articles, dissertations, non-print media, etc.,

- Analyze a body of research literature, drawing conclusions and developing new insights, Develop and be able to articulate one’s own interpretative strategy.

Be aware of:

- The variety of reference tools available for art history studies,
- Situations related to projects in which individuals—including librarians or library staff—are the best source of information,
- How art history research literature is generated and disseminated,
- Guidelines, ethics and standards endorsed by professional art historians,
- A variety of sources for visual information such as art reproductions, original art works, site plans, elevations, floor plans, maps, etc.

F. Intermediate skills for studio arts students

Be able to:

- Understand the interdisciplinary nature of art research (materials, marketing, etc.),
- Use interdisciplinary databases to explore topics,
- Search and evaluate resources from the *Design and Applied Arts Index*,
- Understand and use appropriate resources to contact artists, dealers, galleries, etc.

Be aware of:

- Artist’s books,
- Catalogues raisonnés,
- Auction catalogs,
- Arts councils and arts information centers,
- Museum directories.

G. Intermediate skills for planning students

Be able to:

- Acquire information from business and financial resources to support: fiscal impact analysis projects, study demographic/economic development, revitalization planning and preparation of budgets.

Be aware of:

- Various research skills methodologies in the social sciences, including a review of resources that provide information on data collection, organization of information, interview techniques, as well as the analysis of information,
- Bibliographic management software (e.g. RefWorks, Endnote),
- Various statistical resources including census data,
- Government resources at the national, regional and local level (geared to a specific geographic area) and understanding of their political and legal importance and their application to the planning process,
- GIS resources and their applications/use in planning,
- Key indexes and databases/reference resources with increased focus on economic development and global/regional planning and development (e.g., publications of the United Nations, World Bank, and various national agencies focused on planning efforts).

H. Intermediate skills for fashion students

Be able to:

- Locate and utilize industry information. Building on the information from key business databases and indexes, as well as reference resources, students should be able to effectively utilize market and economic information and relate it to the fashion industry.

Be aware of:

- Forecasting resources that include: style and design, retail and market, as well as color trends. Students should understand the nature of forecasting publications and trend information in both print and electronic formats,
- Industry publications focused at specific segments such as *Womenswear*, *Menswear*, *Childrenswear*, *Merchandising and Accessories*,
- Textile information resources,
- Tools and charts used in apparel manufacturing and pattern construction.

I. Intermediate skills for interior design students

Be able to:

- Collect information and data on course-specific or specialized topics such as
 - Sustainable and energy efficient materials.
 - Sustainable design.

- Socially responsible design.
- Current trends in design.
- Color.
- Lighting.
- Identify individuals such as city or county officials, practicing designers, and other persons who can be approached for advice and information on a project,
- Find government materials documenting or describing a site or building,
- Retrieve the legal documentation to support a project (e.g. codes provisions),
- Retrieve case studies relevant to assigned projects,
- Retrieve interior design and architecture materials by style, location, era,
- Draw on the literature of psychology and environment to retrieve materials relating to the connection between human behavior and physical environment,
- Use handbooks like McGowan's *Specifying Interiors* and *Interior Graphic Standards*, Panero's *Human Dimensions & Interior Space*, and Reznifoff's *Interior Graphic and Design Standards*.

Be aware of:

- Fire and building codes and accessibility guidelines,
- The variety of reference tools available for interior design studies,
- Situations related to interior projects in which individuals, including librarians or library staff, are the best source of information,
- Local governmental bodies; the range of government information relating to the field; and how these bodies distribute building information
- Major sources for visual information, elevations, floor plans, maps, etc.,
- The types of information needed for programming (e.g. sun angles, zoning information, etc.),
- The existence of specialized sources for topics outside of interior design,
- The primary internet resources for interior design studies.

J. Intermediate skills for museum studies students

Be able to:

- Regularly scan museum studies periodical literature for relevant information,
- Retrieve case studies relevant to assigned projects,
- Cite relevant works by museum theorists and in chosen specialty using appropriate subject-based style manuals and/or citation style formatting software (e.g. RefWorks, ProCite, etc.),
- Identify experts such as museum professionals, specialized associations, artists, galleries, and others who can be approached for advice and information on a project,
- Identify established standards for designing exhibit labels,
- Identify and understand the basic physical and chemical properties of a wide variety of

- material types and how they affect preservation of museum objects and specimens,
- Identify the basic agents of deterioration,
 - Create and design effective web pages for potential use by museums.

Be aware of:

- Meetings of local and state level museum associations, arts councils, and professional groups,
- Leading writers and theoretical thinkers in the field of museology and subject-specific disciplines,
- Retrieve case studies relevant to assigned projects,
- Emergent resources and databases in related disciplines (anthropology, archaeology, history, art, art history, education, law, and the sciences, etc.),
- The importance of the use of the web in museums and for museums,
- The variety of collection management software programs available and what features are most desirable according to a museum's needs.

4. ADVANCED SKILLS, KNOWLEDGE, AND AFFECTIVE COMPETENCIES

Version 3, July 2007

A. Advanced skills for all design students

Be able to:

- Effectively use advanced research sources to locate materials such as doctoral dissertations, unpublished research, artifacts, and primary documents,
- Search the Internet in a targeted way,
- Locate information on various sides of an issue and assess its credibility,
- Analyze a scenario or topic (respond to an information need) by identifying the type of information needed, choosing the appropriate sources to search, accessing relevant information, evaluating the findings and selecting the most reliable information, and applying the findings to meet the need,
- Select an index appropriate for the topic,
- Present a cogent argument as to the value and reliability of sources used,
- Identify and access all reasonably available sources appropriate to a research topic,
- Distinguish one's own new interpretation or original contribution from the writings of others,
- Identify information and interpretation issues that remain after completion of the project,
- Identify original or copyrighted materials appropriate to the project, successfully obtain legal access to all text and visual materials (quotations, photographs, original artwork, etc.), appropriately indicate permissions granted,
- Use complex strategies to retrieve information from a variety of sources, depending on the research topic,
- Apply principles of copyright,
- Collect a broad spectrum of data on an issue to develop multiple perspectives on a solution,
- Analyze the structure and logic of supporting arguments or methods,
- Accurately portray pertinent knowledge/information, even if it impacts the individual's value system or counters a thesis argument.

Be aware of:

- Institutional policies related to research, such as the requirements for approval for research involving human subjects.

B. Advanced skills for architecture students

Be able to:

- Effectively select and use sources specific to the field (e.g. codes, product literature, graphic standards, time-saver standards, *LEED Manual*),
- Determine the kind of statistical and economic data needed to support an assigned project and find that data (demographics, market research),
- Identify means of keeping aware of trends and significant developments in the profession (ethical, philosophical, practice oriented, financial, legal etc.),
- Determine the sources for project elements such as images, sound clips, etc.
- Access information for professional needs (job searches, company information, etc.),
- Identify architectural or building consultants, experts in the field, and other persons who can be approached for advice and information on a project,
- Identify sources for project-specific information (e.g. site plans, management information, traffic, climate, soil data),
- Analyze how precedent and designs of others have been used to create new designs/approaches/insights,
- Organize and present information in a way designed to appeal to the audience – visually, orally, and/or in written format – so that it communicates clearly,
- Use team skills to efficiently and effectively research a topic,
- Describe how architectural information is formally and informally produced, organized and disseminated,
- Use knowledge that the discipline-of-origin for information influences how it is accessed, and its applicability,
- Identify other disciplines pertinent to a specific project,
- Judge whether the investigation undertaken is sufficient for the information needed, both in terms of quantity, and in terms of the areas investigated,
- Recognize that as a professional in the field it will be necessary to keep up with new developments that are published in the literature of the field,
- Set up a personal current awareness system, including online table of contents scanning, regular examination of review articles, etc.

Be aware of:

- Associations, organizations and other sources of research in the field (e.g. EDRA),
- Range of journals in the field and how materials get published,
- Most important Internet sites in the field,
- Principles of copyright and how they impact their work (both in research and in design),
- Unpublished sources on the locale and the surrounding area related to building and architecture,
- Role of architecture in society and how it is portrayed in various types of publications,
- The existence of propriety data and restrictions on its use,
- The importance of archiving information so that it will survive company mergers, outdated access technologies, personnel departures, etc.,
- The connections between other disciplines and architecture,

- Impact of media on the perception of a site, of the city – and its impact on the architect’s conceptualization,
- The value of broad reading to inform design thinking.

C. Advanced skills for architecture history students

Be able to:

- Use complex strategies to identify, locate and analyze scholarly materials for research in history of architecture and urban design,
- Identify and locate resources in related disciplines (history of art, music, religion, aesthetics, technology, economic, society, public and private life, etc.),
- Select appropriate print and electronic sources including both primary and secondary materials,
- Keep abreast of current research by finding book reviews, searching databases for new articles, locating dissertations and conference proceedings, etc.,
- Access publications of associations which conduct research in the field,
- Find and analyze materials for a particular topic in interdisciplinary context or area studies.

Be aware of:

- International books in print, catalogs of national libraries and professional information portals.

D. Advanced skills for landscape architecture students

Be able to:

- Effectively use reference sources specific to the field; research useful reference sources used in the past,
- Quickly determine the kind of statistical and economic data needed to support an assigned project and find that data, such as demographic data or market research,
- Assess environmental conditions using a variety of measures—density, infrastructure, transportation, pollution, and other aspects of urban planning,
- Analyze research databases in your area, particularly the *Avery Index to Architectural Periodicals*; what do they index, how far back do they reach, and what capabilities do the search interfaces have?,
- Determine the sources for project elements such as images, sound clips, etc. and properly cite them,

- Access information for professional needs (job searches, funding sources, etc.).

Be aware of:

- Value of reading current journals in landscape architecture twice a week,
- Groups doing research in areas directly related to landscape architecture, such as horticultural research organizations,
- Value of keeping a research and ideas notebook,
- Public perceptions (or lack thereof) of the landscape architect,
- The history of landscape architecture in other cultures,
- Leading web portals in the field,
- The basics of how copyright pertains to landscape architecture,
- Non-library sources of information such as local nurseries,
- Information on local and regional plant materials, including native plants and invasive species,
- Information on the impacts of microclimates on landscapes in the region,
- Observation as a source of information, e.g. observation of garden buildings and structures for color, texture and form,
- The methodological or aesthetic biases of professors or institutions,
- How articles in professional journals get published,
- State websites that contain information on professional licensing and registration,
- Leading books aimed at helping landscape architects pass licensing exams,
- The value of ASLA or other professional groups in understanding the approaches and work of individual firms.

E. Advanced skills for art history students

Be able to:

- Effectively use specialized sources specific to the field (e.g. auction records, *Getty Provenance Index*),
- Identify means of keeping aware of trends and significant developments in the profession (ethical, philosophical, practice oriented, financial, legal etc.),
- Identify experts in the field, and other persons who can be approached for advice and information on a project.

Be aware of:

- Associations, organizations and other sources of research in the field (e.g. CAA),
- Most important Internet sites in the field,
- Principles of intellectual property, copyright and fair use, and how they impact both art works and art-historical writing and publication,
- Role of art and art history in society.

F. Advanced skills for studio arts students (5th year, MFA)

Be able to:

- Identify experts in the field and others for advice,
- Present their work to specific audiences,
- Access people and information for professional needs,
- Understand copyright as it relates to their work.

Be aware of:

- The role of art in contemporary society,
- Current trends in the art world,
- The role of the internet in promoting art.

G. Advanced skills for planning students

Be able to:

- Conduct research and study in one of the following core knowledge areas as endorsed by the APA: natural resources and environmental quality, land use, infrastructure, energy, public services, transportation, recreation, economic development and revitalization plans, historic preservation, urban design, housing neighborhood issues or rural and small town planning,
- Access information for professional needs (job searches, funding sources, etc.),
- Locate documents relevant to the ethics of the planning profession such as the AICP Code of Ethics.

Be aware of:

- The ethics of the planning profession.

H. Advanced skills for fashion students

Be able to:

- Access information for professional needs (job searches, funding sources, etc.).

Be aware of:

- International fashion markets and resources,
- Business presentation and portfolio skills.

I. Advanced skills for interior design students**Be able to:**

- Effectively use sources specific to the field (e.g. codes, product literature, graphic standards, time-saver standards, *LEED Manual*),
- Determine the kind of statistical and economic data needed to support an assigned project and access that data (demographics, market research),
- Use a variety of sources to follow trends and significant developments in the profession (ethical, philosophical, practice oriented, financial, legal, etc.),
- Monitor trends and developments in design (lighting, color, materials, etc.),
- Determine the sources for project elements such as images, sound clips, etc.,
- Identify consultants, experts in the field, and other persons who can be approached for advice and information on a project,
- Access information for professional needs (job searches, funding sources, etc.).

Be aware of:

- Related sources of research in the field (e.g. EDRA),
- Range of journals in the field and how materials get published,
- The variety of potential internet resources in the interior design field,
- Principles of copyright and how they impact their work (both in research and in design),
- Unpublished sources on the locale and the surrounding area related to building, architecture and interior design,
- Understand the role of interior design in society.

J. Advanced skills for museum studies students**Be able to:**

- Identify original or copyrighted materials appropriate to a project, successfully obtain legal access to all text and visual materials (quotations, photographs, original artwork,

- etc.), appropriately indicate permissions granted,
- Apply principles of copyright,
 - Apply principles of museum ethics,
 - Apply principles of registration/collection management,
 - Apply principles of museum education,
 - Organize and present a museum exhibit in a way designed to appeal and communicate clearly to an appropriate audience,
 - Plan, execute, and evaluate a visitor study for an exhibit,
 - Identify and understand preservation issues for electronic data, including metadata, migration schedules, costs and concerns, and the difference between access and preservation,
 - Effectively plan for emergencies to protect collections from disasters,
 - Manage a museum budget and identify potential fiscal concerns,
 - Apply for grants from public and private resources,
 - Define appropriate and inappropriate materials for storage and display and how they interact with museum objects,
 - Apply preventive conservation principles in collection management.

Be aware of:

- Meetings of national and international level museum associations, arts councils, and professional groups, and attend at least one major conference of one of these associations,
- Which major theoretical issues confronting museums today may have the biggest implications for museums in the future,
- Public and private resources for grants and other sources to fund museum projects,
- State-of-the-art conservation principles and how to contract for conservation services,
- Vendor sources for appropriate archival materials used for collection preservation and exhibition,
- How to stay up-to-date with issues confronting museums and museum professionals.

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6. CREDITS AND FEEDBACK

The above core competencies have been drafted by a group of librarians from the Art Libraries Society of North America (ARLIS/NA) and the Association of Architecture School Librarians over several years. Competencies are freely available for educational use. Use of these competencies in whole or in part should be accompanied by a statement to the effect that the document is based on draft competencies prepared by the Student Information Competencies in the Arts Group. Please note the date of the draft used.

A. Group composition

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* Architectural technology is a term, which, while commonly used in the field of architecture, is not often clearly defined. Broadly speaking, architectural technology is the science of building. It is the study of the principles and practices of building methods, materials, and systems and their application to architectural design. Related terms include architectural science, architectural engineering, building, building construction, building technology, and structural engineering. –Barbara Opar

B. Future development

This is only a first step in developing joint understandings for goals in library instruction in the design disciplines. Future developments might include collection of sample assignments and rubrics for assessing performance on those assignments, with the purpose of determining mastery of core competencies.

C. Feedback

Feedback is requested on the use of these competencies with students in design disciplines. This project is an ongoing one, and feedback will help facilitate future revisions. Assignments and assessment exercises are also solicited. Please contact Jeanne Brown (Jeanne.brown@unlv.edu), with comments, suggestions, and additional material for these disciplines or for those design disciplines not yet addressed.