



Commission on Accreditation of Allied Health Education Programs

Standards and Guidelines *for the Accreditation of Educational Programs in Medical Illustration*

Essentials/Standards initially adopted in 1987
Revised in 1992, 1998, 2003, 2008, and 2014

Adopted by the
Association of Medical Illustrators
Accreditation Review Committee for the Medical Illustrator
and
Commission on Accreditation of Allied Health Education Programs

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs upon the recommendation of the Accreditation Review Committee for the Medical Illustrator (ARC-MI).

These accreditation **Standards and Guidelines** are the minimum standards of quality used in accrediting programs that prepare individuals to enter the medical illustration profession. Standards are the minimum requirements to which an accredited program is held accountable. Guidelines are descriptions, examples, or recommendations that elaborate on the Standards. Guidelines are not required, but can assist with interpretation of the Standards.

Standards are printed in regular typeface in outline form. *Guidelines* are printed in italic typeface in narrative form.

Preamble

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the Association of Medical Illustrators cooperate to establish, maintain and promote appropriate standards of quality for educational programs in medical illustration and to provide recognition for educational programs that meet or exceed the minimum standards outlined in these accreditation Standards and Guidelines. Lists of accredited programs are published for the information of students, employers, educational institutions and agencies, and the public.

These Standards and Guidelines are to be used for the development, evaluation, and self-analysis of medical illustration programs. On-site review teams assist in the evaluation of a program's relative compliance with the accreditation Standards.

Description of the Profession

Medical illustrators specialize in the creation, interpretation, and communication of scientific information in a visual form. Their graduate level training in science, art and communications enables them to understand and visualize scientific data and concepts. They design and create media and communication tools to teach medical and allied health professionals, as well as the general public. Students are prepared for careers in academic and research health science centers, industry, and consulting. As members of the health career profession with strong communication skills, medical illustrators work closely with clients to interpret their needs and to create effective visual solutions.

I. Sponsorship

A. Sponsoring Educational Institution

A sponsoring institution must be at least one of the following:

1. A post-secondary academic institution accredited by an institutional accrediting agency that is recognized by the U.S. Department of Education, and authorized under applicable law or other acceptable authority to provide a post-secondary program, which awards a minimum of a master's degree upon completion of the program.

2. A foreign post-secondary academic institution acceptable to CAAHEP that is authorized under applicable law or other acceptable authority to provide a post-secondary program, which awards a minimum of a master's degree or equivalent upon completion of the program.

B. Consortium Sponsor

1. A consortium sponsor is an entity consisting of two or more members that exists for the purpose of operating an educational program. In such instances, at least one of the members of the consortium must meet the requirements of a sponsoring educational institution as described in I.A.
2. The responsibilities of each member of the consortium must be clearly documented in a formal affiliation agreement or memorandum of understanding, which includes governance and lines of authority.

C. Responsibilities of the Sponsor

The Sponsor must assure that the provisions of these Standards and Guidelines are met.

II. Program Goals

A. Program Goals and Outcomes

There must be a written statement of the program's goals and learning domains consistent with and responsive to the demonstrated needs and expectations of the various communities of interest served by the educational program. The communities of interest that are served by the program must include, but are not limited to, students, graduates, faculty, sponsor administration, employers, physicians/scientists, and the public.

Program-specific statements of goals and learning domains provide the basis for program planning, implementation, and evaluation. Such goals and learning domains must be compatible with both the mission of the sponsoring institution(s), the expectations of the communities of interest, and nationally accepted standards of roles and functions. Goals and learning domains are based upon the substantiated needs of health care providers and employers, and the educational needs of the students served by the educational program.

B. Appropriateness of Goals and Learning Domains

The program must regularly assess its goals and learning domains. Program personnel must identify and respond to changes in the needs and/or expectations of its communities of interest.

An advisory committee, which is representative of at least each of the communities of interest named in these Standards, must be designated and charged with the responsibility of meeting at least annually, to assist program and sponsor personnel in formulating and periodically revising appropriate goals and learning domains, monitoring needs and expectations, and ensuring program responsiveness to change.

The annual advisory committee meeting need not be face-to-face, but can include participation by synchronous electronic means.

C. Minimum Expectations

The program must have the following goal defining minimum expectations: "To prepare competent entry-level medical illustrators in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains."

Programs adopting educational goals beyond entry-level competence must clearly delineate this intent and provide evidence that all students have achieved the identified basic competencies prior to entry into the field.

Nothing in this standard restricts programs from formulating goals beyond entry-level competence.

III. Resources

A. Type and Amount

Program resources must be sufficient to ensure the achievement of the program's goals and outcomes. Resources must include, but are not limited to: faculty; clerical and support staff; curriculum; finances; offices; classroom, laboratory, and ancillary student facilities; clinical affiliates; equipment; supplies; computer resources; instructional reference materials; and faculty/staff continuing education.

B. Personnel

The sponsor must appoint sufficient faculty and staff with the necessary qualifications to perform the functions identified in documented job descriptions and to achieve the program's stated goals and outcomes.

1. Program Director

The program director must have a full time academic appointment.

a. Responsibilities

The director must be responsible for the organization, administration, continuous review, planning, development, and general effectiveness of the program.

b. Qualifications

The director must possess a master's degree and must be a certified medical illustrator. The director must have appropriate experience in education.

It is desirable that the director has a doctoral degree.

2. Didactic faculty (full- and part-time)

a. Responsibilities

Didactic faculty must be responsible for teaching each course assigned by the program director, evaluating students and reporting their progress as required by the sponsoring institution, and cooperating with the program director in periodic review and revision of course materials. Didactic faculty must maintain appropriate expertise and competencies through continuing professional development.

b. Qualifications

Didactic faculty must be knowledgeable in course content and effective in teaching their assigned subjects.

3. Clinical faculty (if applicable)

a. Responsibilities

Clinical faculty must be knowledgeable of the program goals, clinical objectives, and clinical evaluation system. Clinical faculty must provide students with appropriate and adequate clinical supervision and must evaluate student clinical competence.

b. Qualifications

Clinical faculty must be knowledgeable and effective in teaching the subjects assigned.

C. Curriculum

The curriculum must ensure the achievement of program goals and learning domains. Instruction must be an appropriate sequence of classroom, laboratory, and clinical activities. Instruction must be based on clearly written course syllabi that include course description, course objectives, methods of evaluation, topic outline, and competencies required for graduation.

The curriculum must demonstrate compliance with the latest edition of the Entry-Level Competencies for the Medical Illustrator (see Appendix B).

D. Resource Assessment

The program must, at least annually, assess the appropriateness and effectiveness of the resources described in these Standards. The results of resource assessment must be the basis for ongoing planning and appropriate change. An action plan must be developed when deficiencies are identified in the program resources. Implementation of the action plan must be documented and results measured by ongoing resource assessment.

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IV. Student and Graduate Evaluation/Assessment

A. Student Evaluation

1. Frequency and Purpose

Evaluation of students must be conducted on a recurrent basis and with sufficient frequency to provide both the students and program faculty with valid and timely indications of the students' progress toward and achievement of the competencies and learning domains stated in the curriculum.

2. Documentation

Records of student evaluations must be maintained in sufficient detail to document learning progress and achievements.

B. Outcomes

1. Outcomes Assessment

The program must periodically assess its effectiveness in achieving its stated goals and learning domains. The results of this evaluation must be reflected in the review and timely revision of the program.

Outcomes assessments must include, but are not limited to: professional credentialing examination(s) success, programmatic retention/attrition, graduate satisfaction, employer satisfaction, job (positive) placement, and programmatic summative measures. The program must meet the outcomes assessment thresholds.

"Positive Placement" means that the graduate is employed full or part-time in a related field, and/or continuing his/her education, and/or serving in the military.

Performance measures may also include comprehensive examinations, evaluations by clinical faculty, student portfolios and projects, and graduate scholarly output and professional achievements. Programmatic summative measures (thesis, masters research project, comprehensive exam), if used, should contribute to assessing effectiveness in specific learning domains.

2. Outcomes Reporting

The program must periodically submit to the ARC-MI the program goal(s), learning domains, evaluation systems (including type, cut score, and appropriateness), outcomes, its analysis of the outcomes, and an appropriate action plan based on the analysis.

Programs not meeting the established thresholds must begin a dialogue with the ARC-MI to develop an appropriate plan of action to respond to the identified shortcomings.

V. Fair Practices

A. Publications and Disclosure

1. Announcements, catalogs, publications, and advertising must accurately reflect the program offered.
2. At least the following shall be made known to all applicants and students: the sponsor's institutional and programmatic accreditation status as well as the name, mailing address, web site address, and phone number of the accrediting agencies; admissions policies and practices including technical standards (when used); policies on advanced placement, transfer of credits, and credits for experiential learning; number of credits required for

completion of the program; tuition/fees and other costs required to complete the program; policies and processes for withdrawal and for refunds of tuition/fees.

3. At least the following must be made known to all students: academic calendar, student grievance procedure, criteria for successful completion of each segment of the curriculum and for graduation, and policies and processes by which students may perform clinical work while enrolled in the program.
4. The sponsor must maintain, and make available to the public, current and consistent summary information about student/graduate achievement that includes the results of one or more of the outcomes assessments required in these Standards.

The sponsor should develop a suitable means of communicating to the communities of interest the achievement of students/graduates (e.g. through a website or electronic or printed documents).

B. Lawful and Non-discriminatory Practices

All activities associated with the program, including student and faculty recruitment, student admission, and faculty employment practices, must be non-discriminatory and in accord with federal and state statutes, rules, and regulations. There must be a faculty grievance procedure made known to all paid faculty.

C. Safeguards

The health and safety of patients, students, and faculty associated with the educational activities of the students must be adequately safeguarded.

*For example, the program **should** ensure adequate ventilation, ergonomic equipment, and appropriate immunizations to protect from exposure to pathogens.*

All activities required in the program must be educational and students must not substitute for staff.

D. Student Records

Complete records must be maintained for student admission, advisement, counseling, and evaluation. Grades and credits for courses must be recorded on the student transcript and permanently maintained by the sponsor in a safe and accessible location.

E. Substantive Change

The sponsor must report substantive change(s) as described in Appendix A in a timely manner. Additional substantive changes to be reported to the ARC-MI within the time limits prescribed include:

- 1) Program resources, including budget/soft funds, scholarship support, personnel, resources, and space;
- 2) Degree granted at completion of program;
- 3) Admission process and procedures;
- 4) Admission target number or admission rate;
- 5) Curriculum of the medical illustration program, including department-wide changes made in other departments;
- 6) Mechanisms for communicating student standing within the program.

F. Agreements

There must be a formal affiliation agreement or memorandum of understanding between the sponsor and all other entities that participate in the education of the students describing the relationship, roles, and responsibilities between the sponsor and that entity.

APPENDIX A

Application, Maintenance and Administration of Accreditation

A. Program and Sponsor Responsibilities

1. Applying for Initial Accreditation

- a. The chief executive officer or an officially designated representative of the sponsor completes a “Request for Accreditation Services” form and returns it electronically or by mail to:

Accreditation Review Committee for the Medical Illustrator

9355 - 113th St. N, #7709
Seminole, FL 33775

The “Request for Accreditation Services” form can be obtained from the CAAHEP website at <https://www.cognitofrms.com/CAAHEP2/RequestForAccreditationServices>.

Note: There is **no** CAAHEP fee when applying for accreditation services; however, individual committees on accreditation may have an application fee.

- b. The program undergoes a comprehensive review, which includes a written self-study report and an on-site review.

The self-study instructions and report form are available from the Accreditation Review Committee for the Medical Illustrator. The on-site review will be scheduled in cooperation with the program and Accreditation Review Committee for the Medical Illustrator once the self-study report has been completed, submitted, and accepted by the Accreditation Review Committee for the Medical Illustrator.

2. Applying for Continuing Accreditation

- a. Upon written notice from the Accreditation Review Committee for the Medical Illustrator, the chief executive officer or an officially designated representative of the sponsor completes a “Request for Accreditation Services” form, and returns it electronically or by mail to:

Accreditation Review Committee for the Medical Illustrator

9355 - 113th St. N, #7709
Seminole, FL 33775

The “Request for Accreditation Services” form can be obtained from the CAAHEP website at <https://www.cognitofrms.com/CAAHEP2/RequestForAccreditationServices>.

- b. The program may undergo a comprehensive review in accordance with the policies and procedures of the Accreditation Review Committee for the Medical Illustrator.

If it is determined that there were significant concerns with the conduct of the on-site review, the sponsor may request a second site visit with a different team.

After the on-site review team submits a report of its findings, the sponsor is provided the opportunity to comment in writing and to correct factual errors prior to the Accreditation Review Committee for the Medical Illustrator forwarding a recommendation to CAAHEP.

3. Administrative Requirements for Maintaining Accreditation

- a. The program must inform the Accreditation Review Committee for the Medical Illustrator and CAAHEP within a reasonable period of time (as defined by the committee on accreditation and CAAHEP policies) of changes in chief executive officer, dean of health professions or equivalent position, and required program personnel (Refer to Standard III.B.).
- b. The sponsor must inform CAAHEP and the Accreditation Review Committee for the Medical Illustrator of its intent to transfer program sponsorship. To begin the process for a Transfer of Sponsorship, the current sponsor must submit a letter (signed by the CEO or designated individual) to CAAHEP and the Accreditation Review Committee for the Medical Illustrator that it is relinquishing its sponsorship of the program. Additionally, the new sponsor must submit a “Request for Transfer of Sponsorship Services” form. The Accreditation Review Committee for the Medical Illustrator has the discretion of requesting a new self-study report with or without an on-site review. Applying for a transfer of sponsorship does not guarantee that the transfer will be granted.
- c. The sponsor must promptly inform CAAHEP and the Accreditation Review Committee for the Medical Illustrator of any adverse decision affecting its accreditation by recognized institutional accrediting agencies and/or state agencies (or their equivalent).
- d. Comprehensive reviews are scheduled by the Accreditation Review Committee for the Medical Illustrator in accordance with its policies and procedures. The time between comprehensive reviews is determined by the Accreditation Review Committee for the Medical Illustrator and based on the program’s on-going compliance with the Standards, however, all programs must undergo a comprehensive review at least once every ten years.
- e. The program and the sponsor must pay Accreditation Review Committee for the Medical Illustrator and CAAHEP fees within a reasonable period of time, as determined by the Accreditation Review Committee for the Medical Illustrator and CAAHEP respectively.
- f. The sponsor must file all reports in a timely manner (self-study report, progress reports, probation reports, annual reports, etc.) in accordance with Accreditation Review Committee for the Medical Illustrator policy.
- g. The sponsor must agree to a reasonable on-site review date that provides sufficient time for CAAHEP to act on a Accreditation Review Committee for the Medical Illustrator accreditation recommendation prior to the “next comprehensive review” period, which was designated by CAAHEP at the time of its last accreditation action, or a reasonable date otherwise designated by the Accreditation Review Committee for the Medical Illustrator.

Failure to meet any of the aforementioned administrative requirements may lead to administrative probation and ultimately to the withdrawal of accreditation. CAAHEP will immediately rescind administrative probation once all administrative deficiencies have been rectified.

4. Voluntary Withdrawal of a CAAHEP- Accredited Program

Notification of voluntary withdrawal of accreditation from CAAHEP must be made by the Chief Executive Officer or an officially designated representative of the sponsor by writing to CAAHEP indicating: the desired effective date of the voluntary withdrawal, and the location where all records will be kept for students who have completed the program.

5. Requesting Inactive Status of a CAAHEP- Accredited Program

Inactive status for any accredited program other than one holding Initial Accreditation may be requested from CAAHEP at any time by the Chief Executive Officer or an officially designated representative of the sponsor writing to CAAHEP indicating the desired date to become inactive. No students can be enrolled or matriculated in the

program at any time during the time period in which the program is on inactive status. The maximum period for inactive status is two years. The sponsor must continue to pay all required fees to the Accreditation Review Committee for the Medical Illustrator and CAAHEP to maintain its accreditation status.

To reactivate the program the Chief Executive Officer or an officially designated representative of the sponsor must provide notice of its intent to do so in writing to both CAAHEP and the Accreditation Review Committee for the Medical Illustrator. The sponsor will be notified by the Accreditation Review Committee for the Medical Illustrator of additional requirements, if any, that must be met to restore active status.

If the sponsor has not notified CAAHEP of its intent to re-activate a program by the end of the two-year period, CAAHEP will consider this a “Voluntary Withdrawal of Accreditation.”

B. CAAHEP and Committee on Accreditation Responsibilities – Accreditation Recommendation Process

1. After a program has had the opportunity to comment in writing and to correct factual errors on the on-site review report, the Accreditation Review Committee for the Medical Illustrator forwards a status of public recognition recommendation to the CAAHEP Board of Directors. The recommendation may be for any of the following statuses: initial accreditation, continuing accreditation, transfer of sponsorship, probationary accreditation, withhold of accreditation, or withdrawal of accreditation.

The decision of the CAAHEP Board of Directors is provided in writing to the sponsor immediately following the CAAHEP meeting at which the program was reviewed and voted upon.

2. Before the Accreditation Review Committee for the Medical Illustrator forwards a recommendation to CAAHEP that a program be placed on probationary accreditation, the sponsor must have the opportunity to request reconsideration of that recommendation or to request voluntary withdrawal of accreditation. The Accreditation Review Committee for the Medical Illustrator’s reconsideration of a recommendation for probationary accreditation must be based on conditions existing both when the committee arrived at its recommendation as well as on subsequent documented evidence of corrected deficiencies provided by the sponsor.

The CAAHEP Board of Directors’ decision to confer probationary accreditation is not subject to appeal.

3. Before the Accreditation Review Committee for the Medical Illustrator forwards a recommendation to CAAHEP that a program’s accreditation be withdrawn or that accreditation be withheld, the sponsor must have the opportunity to request reconsideration of the recommendation, or to request voluntary withdrawal of accreditation or withdrawal of the accreditation application, whichever is applicable. The Accreditation Review Committee for the Medical Illustrator’s reconsideration of a recommendation of withdraw or withhold accreditation must be based on conditions existing both when the Accreditation Review Committee for the Medical Illustrator arrived at its recommendation as well as on subsequent documented evidence of corrected deficiencies provided by the sponsor.

The CAAHEP Board of Directors’ decision to withdraw or withhold accreditation may be appealed. A copy of the CAAHEP “Appeal of Adverse Accreditation Actions” is enclosed with the CAAHEP letter notifying the sponsor of either of these actions.

At the completion of due process, when accreditation is withheld or withdrawn, the sponsor’s Chief Executive Officer is provided with a statement of each deficiency. Programs are eligible to re-apply for accreditation once the sponsor believes that the program is in compliance with the accreditation Standards.

Note: Any student who completes a program that was accredited by CAAHEP at any time during his/her matriculation is deemed by CAAHEP to be a graduate of a CAAHEP-accredited program.

APPENDIX B

Entry-Level Competencies for the Medical Illustrator

(Approved in 2014 by the Council on Education, Accreditation Review Committee for the Medical Illustrator, and the Board of Governors of the Association of Medical Illustrators)

1. Basic Science Competencies

Goal: Upon completion of the program, graduates must demonstrate an advanced level of knowledge in the biomedical sciences. To demonstrate the following competencies, upon completion of the program, graduates must have completed an advanced course in human anatomy with cadaver dissection and a minimum of at least four other biomedical science courses from the following list: embryology, histology, neuroanatomy, cell biology, molecular biology, biochemistry, physiology, pathology, immunology, pharmacology, or genetics.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Understand, interpret, visualize, and depict scientific content,
- Access, interpret, and critically assess biomedical research,
- Understand the scientific method and principles of research,
- Recognize the difference between theoretical and hypothetical proposals and established or well-supported science,
- Create accurate and effective visual representations of biomedical science.

2. Cognitive Competencies

a. **Goal:** Upon Completion of the program, graduates must demonstrate visualization skills.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Visualize biological structures and processes, as well as abstract scientific concepts,
- Visually interpret objects in 2-d and 3-d media (real or virtual), including the use of perspective, cross-section, cut-always, sequences, and/or varying viewpoints,
- Create effective visual images from verbal or written description,
- Demonstrate effective visual problem-solving and conceptualization skills (e.g. through concept sketches),
- Apply knowledge of relevant graphic conventions, visual symbols, and other standards of effective communication.

b. **Goal:** Upon completion of the program, graduates must demonstrate conceptual skills.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Identify key messages in complex communication situations,
- Identify relevant analogies, metaphors, or other communication strategies that may help solve a visual communication problem,
- Use appropriate methods to generate solutions to visual communication problems, (e.g. brainstorming, concept sketching/model building, concept mapping, and/or inductive reasoning).

c. **Goal:** Upon completion of the program, graduates must demonstrate analytical skills.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Analyze, prioritize, and define goals and objectives of a communication problem,
- Analyze the strengths and weaknesses of alternative communication approaches,

- Use strategies for implementing the solution to complex communication problems via the appropriate application of visual approach (realistic, schematic, symbolic), format (still, motion, interactive), and media platform (print, network, mobile).

3. Research Competencies

Goal: Upon completion of the program, graduates must demonstrate competency in the academic research process through a graduate research project or thesis.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Review and critically appraise the literature on a topic,
- Formulate meaningful questions,
- Formulate a statement of purpose, research question, and/or hypothesis for a proposed visual research project,
- Apply critical thinking, time management, and organizational skills in the conduct of a visual research project,
- Collect and organize data and resource information,
- Utilize appropriate research methods e.g. focus groups and audience testing where indicated,
- Assess data and evaluate resources,
- Report the research findings in writing using accepted scientific style and/or in an oral presentation.

4. Applied Visual Communication Competencies

a. Goal: Upon completion of the program, graduates must be able to draw and accurately record biomedical subject matter.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Create accurate and effective visual media that satisfy communication goals,
- Integrate and synthesize information from a variety of reference sources and original research,
- Aesthetically apply principles of effective visual presentation (e.g. scale, proportion, perspective, lighting and/or texture),
- Apply theories and methods of color, design, composition and storyboarding.

b. Goal: Upon completion of the program, graduates must be able to organize and graphically design information to facilitate effective communication in educational, commercial, and legal environments.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Design information and a visual approach appropriate to a defined audience or audiences taking into consideration issues of literacy, disability, educational backgrounds and cultural or linguistic context,
- Orient the viewer with graphic devices,
- Direct the viewers' focus via the manipulation of pictorial qualities (e.g. contrast, luminance, scale, sequence, color, and/or placement),
- Combine and order pictorial and textural information into a coherent message or story,
- Use an appropriate motion media and visual approach, to communicate structure-function relationships, mechanisms of action, physiology, or pathology.

c. Goal: Upon completion of the program, graduates must be able to design and produce effective educational materials that satisfy the needs of the learner as well as a client/content expert.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Elicit client and learner needs through written and verbal communication,
- Analyze and define goals and objectives of educational materials,
- Select an appropriate medium, style, and method of delivery,
- Apply relevant research findings from education, communication, and visual perception to visual products,
- Produce effective educational materials,
- Evaluate the effectiveness of the finished project via formal research methods and/or informal reflective analysis.

d. Goal: Upon completion of the program, graduates must utilize a variety of media and production techniques in appropriate applications and understand production processes sufficiently to communicate with other professionals (e.g. art directors and pre-press companies),

Entry-level competency is evidenced by a graduate's knowledge and ability to: (*Competency in italics may not be required in all accredited programs.*)

- Create didactic illustration for print media: books, journals, posters, brochures,
- Create didactic illustration for projection and electronic media,
- Produce digital images at correct resolution for print, presentation, and electronic media,
- Demonstrate familiarity with current forms of visual data storage and delivery,
- Demonstrate basic competence in scripting or programming languages,
- Apply layout and graphic design skills to print and electronic media,
- Create medical-legal illustration for demonstrative evidence,
- Demonstrate content knowledge, organization, and storyboarding skills for motion media,
- Create a professional portfolio or presentation of work,
- *Demonstrate sculpting, mold making, and casting techniques as they apply to models, museum techniques, facial and somato prosthetics, and forensic reconstruction.*

5. Communication Competencies

Goal: Upon completion of the program, graduates must be able to communicate effectively with clients, subject matter experts, co-workers, supervisors, and vendors in oral and written form.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Determine the communication needs of a client,
- Use a process of formative feedback (i.e. consultation followed by modification and revision),
- Consult with subject matter experts to achieve an effective result,
- Work cooperatively with supervisor(s) and other team members,
- Make oral presentations to clients and colleagues,
- Apply appropriate writing skills to business correspondence, contracts, proposals, reports, scripts and/or articles for publication.

6. Professional and Ethical Competencies

Goal: Upon completion of the program, graduates must be aware of professional practices and ethical conduct.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Use professional practices with clients, business partners, and colleagues,
- Use appropriate professional conduct in special situations, (e.g. the operating room, autopsy, dissection, patient examination, hiring, or interviewing),
- Maintain confidentiality as it applies to protected patient health information, clients, business partners, and colleagues,
- Create original imagery and credit others' ideas and imagery when appropriate,
- Be informed of artists' rights and advocate for fair practice,
- Maintain integrity when creating legal exhibits that can unfairly sway a jury.

7. Business and Management Competencies

Goal: Upon completion of the program, graduates must be aware of established business and management practices.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Estimate and manage project costs, time, and resources,
- Understand intellectual property laws and reflect that understanding in professional practice (i.e. copyright registration of creative work),
- Be aware of legal hiring practices,

- Recognize various business models (e.g. a salaried position, sole proprietorship, and partnership),
- Negotiate equitable employment, contracts, and agreements,
- Keep accurate business records,
- Use word processing, spreadsheets, data management software, and the Internet in managing a professional practice,
- Market and promote one's own skills/work and that of a department/business, institution, and profession,
- Understand the role of professional organizations in our profession.

8. Emergency Preparedness & Response Competencies

Goal: Upon completion of the program, graduates must be able to apply their knowledge and skills to emergency situations.

Entry-level competency is evidenced by a graduate's knowledge and ability to:

- Create visual information for the lay public on how to respond to a medical emergency,
- Create didactic images in a restricted time frame and/or under adverse conditions,
- Design medical iconography targeted to a culturally diverse audiences,
- Prepare medical info-graphics /data visualizations for public signage,
- Identify the contributions that can be made by a medical illustrator to an emergency preparedness and response plan.

(Preparation for the above listed competencies could be incorporated through coursework, in-class discussions, theses and/or research projects, etc.)