Interactive Design

Foundations of Animation and Interaction Design

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Course overview and setup

Interactive Design: Foundations of Animation and Interaction Design is a one-semester, project-based curriculum that teaches digital communication skills in the context of the professional animation and interaction design process, using Adobe web tools. *Interactive Design* develops four key skill areas:

- Project management and collaboration

- Design

- Research and communication

- Professional interactive media authoring tools

Students develop these key skills in a spiral—each project adds more challenging skills onto the foundation proficiencies.

Interactive Design addresses each of these areas, using a project-based approach. Each project has phases that follow a design and development process, from project planning to evaluation and launch. To simulate a professional work environment, students gradually migrate their design work from an individual process to a group process. Design and technical work by its very nature is iterative, so the projects contain activities that require students to evaluate and then redesign and rework their communications. Specific attention has been paid to developing concepts and principles for thorough, effective design.

The following diagram shows the sequence and flow of the projects:

Semester: Animation and Game design and development

Animation basics

Game design & planning

Building a Flash game

Portfolios

Projects

Interactive Design projects develop skills that lay the foundation for producing web and app-ready communications: design principles, design documents, storyboards, game development, shared project management skills such as interviewing and project scheduling, peer review, and redesign. Project activities focus on developing effective communications that can be deployed on the web or via app stores. Students create a simple animation, a variety of graphic content for animations, a client game, and a portfolio. A great deal of flexibility is implied in the curriculum.

The key skills emphasized in this semester are:

- "Soft" skills such as interviewing and responding to feedback

- Designing a game for clients

- Problem solving that helps support multiple perspectives

- Reflection about the design process and effective communication

- Peer teaching and evaluation in a collaborative environment

- Learning standard web practices and how to implement reusable design

- Technical game development

In the semester, students use Adobe Flash Professional, Adobe Photoshop, and Adobe Illustrator to develop static and interactive graphics. They use Adobe Flash Professional to design and build games. This content prepares students for the Adobe Certified Associate in Interactive Media using Adobe Flash Professional examination.

Alternate methods for utilizing *Interactive Design*

If your circumstances do not allow you to use *Interactive Design* as a yearlong curriculum, there are other ways to structure the content to fit certain time, skill, and course structure limitations.

Activity-based instruction

You can use an activity-based approach that focuses primarily on teaching discreet project management, design, research and communication, and technical skills by taking the activities from the *Interactive Design* curriculum and teaching them individually or grouping them together how you see fit.

You are encouraged to be creative with an activity-based approach while attempting to incorporate a project-based teaching method. In that vein, each activity has a small task within so they can be taught discreetly, or you can incorporate the skills learned from each activity into a larger project, as is done throughout the *Interactive Design* curriculum. You can search for activities by skill on the Digital Careers activities page (http://edex.adobe.com/digital-careers-activities).

Individual projects

Depending on the skill level of students, you can utilize individual projects from the *Interactive Design* curriculum, without completing the other projects in the curriculum sequence. For example, an educator teaching an animation course might only wish to teach the animation basics project. Additionally, you can adapt the instruction and utilize technical guides from previous projects to teach an individual project.

Product-based instruction

You can use a product-based approach that focuses primarily on teaching how to use Adobe Flash Professional. The technical guides included in the *Interactive Design* projects are alternatively packaged

by individual product. For example, download the Learn Flash Professional CC syllabus if you solely plan to teach Flash skills to your students.

Be creative!

You are encouraged to utilize the *Interactive Design* curriculum as a jumping off point to developing your own activities, projects, and curriculums that are customized for your classroom. By utilizing the existing activities and product technical guides, you can formulate complete instructional projects based on particular areas of interest. If you do create your own projects or curriculum, please share them with the community on the Adobe Education Exchange (http://edex.adobe.com) where you can also browse for additional resources that are useful for teaching with the Adobe Creative Cloud.

Interactive Design skills matrix

	Project management	Design	Research and communication	Technical
Project 1: Animation basics *Focus:* • Understand the basic principles of animation • Principles of good design • Creating an original animated sequence • Evaluating and comparing interactive media *Time:* 12-22 hours (3–4 weeks)	• Defining purpose, goal, and audience • Synthesizing and recommending changes during design process	• Designing a custom experience • Applying design principles • Applying design aspects such as color, design, layout, contrast, and composition • Integrating images and text • Planning images and graphics based on needs of the project • Understanding the role and purpose of usability	• Researching examples of interactive media • Analyzing and evaluating various interactive media • Understanding the role, purpose and use cases for interactive media • Researching, evaluating and analyzing the use of Flash • Understanding copyright issues and fair-use guidelines • Advocating and practicing legal use of images • Participating in peer review • Communicating and presenting design decisions • Giving feedback on a project	*Flash* • Understanding the Flash Professional workspace • Customize the layout of the workspace • Define the tools and features in the workspace • Work with rulers and guides • Understanding file types • Using drawing tools • Working with graphic files • Creating and modifying text • Working with text and text effects • Working with layers • Organizing layers and libraries • Creating folders and labels • Creating and working with symbols • Creating and working with instances • Creating interactive buttons • Importing images • Optimizing images • Using Trace Bitmap • Using animation methods • Working with frames and keyframes • Working with eases and tweens • Creating motion tweens • Creating Timeline effects • Creating transparent buttons • Testing movies • Publishing Flash documents

	Project management	Design	Research and communication	Technical
Project 2: Game design & planning *Focus:* • Game design process • Using design documents to guide a progressive design process • Designing for a client • Design-team process for game development • Team-client interaction and communication *Time:* 12–20 hours (3–5 weeks)	• Developing a project plan • Managing and organizing multiple tasks involved in design versus production • Understanding roles and responsibilities • Meeting deliverables • Determining game purpose, audience, and goal • Determining available resources and skill level for game development • Writing a proposal for the game, with attention to scenarios and audience characterization	• Designing a custom experience • Making screen sketches for interactive experiences • Providing multiple design ideas • Synthesizing information from design review meetings • Creating flowcharts • Creating design comps • Creating storyboards • Designing for a specific audience and purpose	• Researching, evaluating and analyzing the use of Flash in online gaming • Evaluating and analyzing various game types • Researching audience and overall gaming landscape • Researching currently available games • Researching appropriate uses of multimedia in gaming • Communicating purpose and goal • Communicating and presenting design decisions • Understanding scripts and user scenarios • Giving feedback on a project • Asking questions to focus and clarify • Listening and interpreting feedback • Understanding and addressing client design issues • Finalizing design with a client	*None*

	Project management	Design	Research and communication	Technical
Project 3: Building a Flash game *Focus:* • Effective team collaboration • Designing for a client • Developing reusable content • Conducting technical and usability testing • Review and redesign process • Presenting to a client *Time:* 18–28 hours (4–6 weeks)	• Following and executing a project plan • Following and executing a design comp and storyboard • Following up and following through on roles and responsibilities • Defining and prioritizing tasks • Producing deliverables and meeting deadlines • Executing a review and redesign cycle • Executing technical tests	• Providing consistency and accessibility • Creating templates and reusable designs • Adapting content for readability and emphasis • Designing for multiple screens and outputs • Considering screen size and device requirements • Designing a usability test	• Communicating ideas clearly • Presenting a game to a group • Connecting goals of the game with user interaction and experience • Assessing team's technological developer skill level • Critiquing designs • Providing meaningful but not overly critical feedback • Listening and interpreting information and feedback • Demonstrating the realization of redesign goals • Conducting usability analysis • Creating technical tests	*Flash* • Using drawing tools • Working with graphic files • Understanding file types • Working with graphic files • Working with layers • Organizing layers and libraries • Creating folders and labels • Creating and working with symbols • Creating and working with instances • Creating interactive and transparent buttons • Importing and compressing audio • Importing images • Optimizing images • Using Trace Bitmap • Producing Flash video • Creating templates • Using basic ActionScript • Writing ActionScript • Using Code Snippets • Identifying function, event handlers, and listeners • Using animation methods • Creating Timeline effects • Creating character animations • Using sprite sheets • Using motion presets • Saving and using motion presets • Testing movies • Creating accessible Flash content • Resizing and re-scaling Flash content • Using the Device Simulator

				• Publishing Flash documents
				• Publishing mobile applications
				Photoshop
				• Resizing, rotating, and cropping images
				Illustrator
				• Creating vector artwork
				• Using Image Trace to convert photos to vector artwork
				• Comparing vector and bitmapped images

	Project Management	Design	Research and communication	*Technical*

Project 4: Portfolios
 	
Focus:
• Portfolio design
• Presentation of skills
• Career research and development
 	
Time: 10–20 hours (2–4 weeks)
	• Planning and creating a portfolio
	• Organizing and managing content
	• Conducting a review and redesign
	• Identifying the purpose and audience for a portfolio
	• Creating flowcharts
		• Designing for a specific audience and purpose
		• Selecting appropriate content
		• Providing consistency and accessibility
		• Providing universal navigation
		• Adapting content for readability and emphasis
			• Planning and conducting research strategies
			• Understanding and practicing lifelong career skills:
			  • Job research skills
			  • Presenting skills
			• Communicating information to particular audiences
			• Defining the goals and uses of a portfolio
			• Soliciting and providing feedback
			• Writing and editing portfolio content
				General skills
				• *Building a portfolio*
				• *Formatting and adding portfolio content*
				• *Updating a portfolio*
				• *Testing a portfolio*

Classroom computer setup

We've included the technical information you will need to get your computer lab or classroom ready to implement the *Interactive Design* curriculum.

Adobe Flash Professional CC

Install Flash on all workstations. System requirements are noted below and installation procedures are included with the software. For updates to system requirements, visit:
www.adobe.com/go/flash_systemreqs

Adobe Photoshop CC

Install Photoshop CC on all workstations. System requirements and installation procedures are included with the software. For updates to system requirements, visit: www.adobe.com/go/photoshop_systemreqs

Adobe Illustrator CC

Install Illustrator CC on all workstations. System requirements and installation procedures are included with the software. For updates to system requirements, visit: www.adobe.com/go/illustrator_systemreqs

Classroom enrichment

Many techniques can help enhance students' experience as they engage in these projects and also help you manage the content and technology. When you set up your computer lab or classroom for working on technology-based projects, the suggestions below can help create a successful learning experience for your design students.

Acceptable use policies

To promote good digital citizenship and to help students feel ownership of the technology and tools they use, discuss acceptable use policies with students. Your institution might already have a policy, but discuss with students appropriate use of the Internet and technology tools and have them apply their understanding to various misuse scenarios to determine consequences. Work with students to create a class policy to protect the rights and privileges of fellow students and class hardware/software. Propose rules for good team dynamics and peer critiques.

File Management

To save time in assessing student work, make sure all classroom materials and student work are properly saved and posted (preferably on a school server). The following guidelines will help:

- *Student folders:* All students should have a folder for all of their work. Folder names might include student's last name, first initial, and class period (such as "per7_m_smith").

- *Backups:* Students might want to keep flash drives, local copies, or school backup server copies of their folders or backup their files to the cloud.

- *Working from home:* Students can work from home, but make sure they find a way to transfer their work to the school computers (such as FTP, e-mail, flash drive, cloud storage, or school server).

- *Turning in work:* If students work from home by e-mail, make sure you have effective file virus protection and that all work is clearly labeled for ease of identification and organization (for example, per7_logo_m_smith).

- *Legal issues:* If you plan to publish student work on the web, check into your school's rules about putting pictures or names of students on the web. It might be appropriate for students not to include their full names or e-mail addresses.

Classroom environment

Using technology as part of any lesson in the classroom can lead to management issues unrelated to the content being covered. Here are some tips and techniques that can help you manage the technology while reinforcing key concepts:

- *Good design posters:* Because the course focuses on good design techniques, you might want to print and laminate examples of well-designed websites and post them throughout the classroom. A variation might be to post examples of "good" and "bad" site designs on opposite sides of the classroom. The good and bad design examples should include both HTML sites and Adobe Flash sites. You might also have students compile a list of good design criteria throughout the course and post it in the classroom.

- *Help center:* Create a library of print materials for software and design techniques in a corner of the classroom where students can browse for answers to challenging questions.

- *Running questions list:* List technical questions for student research on a large piece of paper or chalkboard in the classroom. As the questions are answered, write the answers below them.

- *Student leaders:* Designate lead students with strong technical skills to be the first person contacted for software or hardware questions and issues so students do not break up the lesson time with technology questions. You might rotate this role among different sets of students, empowering them to take more initiative with their learning.

- *Questioning process:* You might face some running around when students have open time to work on projects. To alleviate this, urge students to try to find the answer themselves first and rely on the teacher second and to continue working without waiting for an answer. For example, you might request students to look in the help system first and ask their neighboring peers before they ask the teacher. You might also provide students with props to place on their monitors as a silent signal that they want help.

- *Technology extension:* As students work on their projects, some will come across techniques that have not been demonstrated to the class. When student groups learn a new technique on their own, ask them to present it to the class. The group should show the resulting product, share step-by-step how they completed it, and have the class complete the same steps while group members walk around to help others learn the technique.

- *Using constructive comments:* Working in teams requires students to become better communicators. During the web design process, students will sometimes need to critique each others' work. Giving feedback requires students to be sensitive to the feelings of others. To help students become better communicators, you might spend some time brainstorming with the class to identify constructive comments and words. You can use the *Peer review* activity as a guideline to create a class-generated list can be posted as a reminder for everyone when giving a critique of a fellow student's work.

Ethical content use and production

In many projects students will gather, manipulate, and create images and websites. Emphasize the social responsibility students have to each other and their audience to help them build good practices as they take these skills to future programs and jobs. Some areas to focus on include:

- *Content validity:* As students research content online, have them continually consider and evaluate content bias, currency, and source corroborating. You can use the *Research and writing for design projects* activity to help students understand how to assess online content. Or you might cover some search techniques such as those provided by November Learning: http://novemberlearning.com/resources/information-literacy-resources/.

- *Copyright:* Emphasize the need to gain permission to use graphics, images, video, and audio produced by others and to copyright their own original work. Use the *Copyright and fair use* activity to help your students learn how to correctly identify and site sources.

Limited resources (digital cameras, video cameras, etc):

- Consider having students work in groups instead of individually.

- Consider connecting all computers into a local network to encourage collaborative learning.

- You might divide computers into learning stations, perhaps grouped by subject areas or activities (digital media center, web research center, etc.).

- You might consider splitting up the activities associated with the project. Have some students use the equipment to gather their data while others spend time researching the topic at hand, planning their time with the equipment for what they might capture, or building an aspect of the project. Rotate groups to ensure all students are occupied at all times.

Professional skills

This course is designed to introduce students to professional experiences. You can reinforce the ideas around professional behavior and work in a few ways.

- *Soft skills:* When communicating with clients, students need soft skills to help them interview and review their work with clients. You might have students practice interviewing each other or conduct practice interviews with you as they develop skills for speaking with clients. The *Working with clients* activity covers many of these skills.

- *Project tracking:* Reinforce the need to plan appropriate schedules and manage time. You might consider having students give brief daily status reports of how they are doing on time per task. Guide students in reprioritizing and updating their project plans when needed. The *Planning design projects* activity provides details and a project plan worksheet to help your students learn these skills.

- *Team-work:* Helping students develop individually and as productive team members is a challenging task. You might reinforce the importance of both types of development by evaluating their individual performance as well as the ways they contribute to team goals, work to solve any team conflicts, and collaborate with other teams to adopt successful practices. Use the *Introduction to project planning, project management, and teamwork* activity to help students learn how to manage projects and work in teams.

Professional environment: To prepare students to work with clients and help them develop professional attitudes, you might want to give them weekly points for displaying professional attitudes and skills, such as the following:

- Punctuality

- Dressing well when interviewing peers and clients

- Promptly replying to peers and clients

- Listening to suggestions and working well in groups

Professional designers: Students can benefit greatly from speaking with a professional animator, game designer, or developer. You could arrange a field trip to a design studio or ask a designer to visit your classroom. Key topics to address with the designer

- Teamwork and collaboration

- Effective design

- Samples of the designer's work and the challenges they presented

- Use of professional software, such as Adobe products, in the interactive media fields

- Critique of student work

Teaching across disciplines

You could team-teach some projects with teachers from other departments to help traditional content area teachers integrate technology into their courses while helping students develop skills in academic areas such as writing, reading, math, and science. You can have students go into the other teacher's classroom for a change of atmosphere, or bring the other teacher into your classroom. This is especially helpful with the following topics:

Graphic design: An art teacher can address topics such as line, rule of thirds, and typography.

Interactive design: An art teacher can address topics such as composition, color, and shape.

Interactive media design and production: A business or career exploration teacher can discuss the qualifications, salary, and skills required for working in the interactive media design field. A marketing teacher can enhance the discussion around audience and purpose.

Interactive media content: A literature teacher could emphasize writing for different audiences as students engage in projects that include different clients.

Game development: A science, math, or history teacher could have students design a game teaching a specific topic.

Skills overview rubric

This general skills rubric is a tool for assessing various aspects of major interactive media projects. Although each activity has its own rubric, you might use the following to help you assess particular aspects of projects further. Select the items that apply to a particular project.

Design skills

Category	Does not meet expectations	Meets expectations	Exceeds expectations
Composition	There is no use of white space, symmetry, and focal point. Application interface (and elements within application) is cut off inappropriately at its borders or are surrounded by excessive white space.	There is some use of white space, symmetry, and focal point. Application interface (and elements within pages) usually fit appropriately within its borders.	White space, symmetry, and focal point are used effectively. Application interface (and elements within pages) fit within its borders in a pleasing manner.
Color	Colors clash and do little for the theme of the design. Background color interferes with text and images. Colors make text less readable.	Colors are somewhat complementary. Background color coordinates with images and text design. Colors do not interfere with readability.	Colors work together, reinforcing the theme of the design. Background color enhances images and text design. Colors strongly support readability.
Typography	Text is not easily readable. White space is not used effectively. Fonts and text effects interfere with the design and readability.	Text is readable. Type sizes communicate information and are compatible with the overall design. White space around text supports readability and design. Fonts and text effects are compatible with the design and readability.	Text is readable, and selected fonts support design goals. Type sizes reflect desired emphasis. White space around text strongly supports readability and design. Fonts and text effects add to mood and tone. Fonts enhance readability through color, size, and contrast.
Usability	Application navigation appears in some areas, and not all links or buttons function properly. Navigation does not allow users access to all content and is not intuitive to use. The application takes a noticeable time to load, and the delays are caused by irrelevant elements.	Application navigation appears in all areas, and all links and/or buttons function properly. Navigation gives users access to most of the content and is intuitive to use. Some parts of the application take a noticeable time to load, but most delays are worth the wait.	Consistent navigation appears across the application, and all links and/or buttons function properly. Navigation gives users access to all of the content and is intuitive to use. Application loads in a reasonable time, and any noticeable delays are worth the wait.

Category	Does not meet expectations	Meets expectations	Exceeds expectations
Use of technical elements (Photoshop, Illustrator, or Flash)	Use of technical elements and effects does not enhance the user's experience or consistently support the overall goals and message of the site.	Use of technical elements and effects consistently supports the overall goals and message of the application but does not enhance the user's experience. Use of such elements or effects is not excessive or distracting.	Use of technical elements and effects adds to the overall design of the application by enhancing the user's experience and supporting the goals and message. Use of such elements or effects is not excessive or distracting.
Storyboard	Storyboard provides incomplete or contradictory production information.	Storyboard is complete but somewhat difficult to interpret.	Storyboard is thorough, complete, and very clear.

Technical skills

Category	Does not meet expectations	Meets expectations	Exceeds expectations
Accessibility	Very few elements, such as text, images and buttons, can be read by a screen reader. Users cannot navigate the application using only the keyboard.	Some elements, such as text, images and buttons, can be read by a screen reader. Most of the application can be navigated by using only the keyboard.	All elements, such as text, images and buttons, can be read by a screen reader. The entire application can be navigated by using only the keyboard.
Drawing	Illustrations and buttons are poorly drawn, not always using appropriate drawing and effects tools.	Illustrations and buttons are drawn in a sufficient manner, using a range of drawing and effects tools.	Illustrations and buttons are cleanly and clearly drawn, effectively using the full range of drawing and effects tools.
Color panels	Color is not consistently applied and panels are usually not configured for the web.	Color is consistently applied most of the time, and panels are usually configured for the web.	Color is consistently applied, and panels are configured for the web.
Optimization	The quality of images is not sufficient, or the file size is too large.	Images have a satisfactory balance of quality and file size.	Images have an excellent balance of quality and file size.
Tool use	Student frequently has to ask what tool to use to create desired elements and effects. Does not independently use available information about the tools. Does not use tools efficiently.	Student usually knows what tool to use to create desired elements and effects but sometimes needs to be reminded to use available information about the tools. Uses most tools efficiently.	Student knows what tool to use to create desired elements and effects or uses resources effectively and independently to find out. Uses tools efficiently.

Research and communication skills

Category	Does not meet expectations	Meets expectations	Exceeds expectations
Design process	The design process does not include all appropriate elements, such as sketches, storyboard, and review comments. The final product does not completely reflect the storyboard and feedback.	The design process includes elements such as sketches, storyboard, and review comments. The final product reflects the storyboard, with some revisions based on feedback.	The design process includes all appropriate elements, such as sketches, storyboard, and review comments. The final product accurately reflects the storyboard, including storyboard revisions based on feedback and thoughtful design decisions made during production.
Feedback	Reviews of other students' designs do not adequately address content and design. Feedback does not use informative vocabulary and is often not constructive.	Reviews of other students' designs provide some analysis of content and design. Feedback uses some informative vocabulary and connects comments to design and content. Feedback is not always constructive.	Reviews of other students' designs provide thorough and insightful analysis of content and design. Feedback uses clear and informative vocabulary and connects comments to design and content. Feedback is always constructive.
Presentation	Design presentations provide little information on the goals, design concepts, and requirements of a project.	Design presentations cover the goals, design concepts, and requirements of a project.	Design presentations clearly and completely state the goals, design concepts, and requirements of a project.
Team collaboration	Student does not collaborate with other students to provide feedback or assistance. Fulfills assigned team roles but does not contribute equally to project work. Does not consult with other team members before making major project decisions. Does not help others build skills.	Student collaborates with other students as required to provide feedback or assistance. Fulfills assigned team roles and contributes equally to project work. Sometimes consults with other team members on major project decisions but makes minimal effort to help others build skills.	Student collaborates freely with other students to provide feedback or assistance. Fulfills assigned team roles and contributes equally to project work. Consults with other team members on major project decisions and voluntarily helps others build skills to complete the project.

Project management skills

Category	Does not meet expectations	Meets expectations	Exceeds expectations
Progressive design	Student does not use a design document or peer feedback.	Student uses design documents to guide the design process. Inconsistently uses peer feedback to guide the redesign process.	Student consistently uses design documents to guide the design and development process. Thoughtfully uses peer feedback to guide the redesign process.
File management	Student files and folders are inconsistently named and not logically organized. File organization is not seen as an important task.	Most student files and folders are named and organized logically on both local and remote drives. File organization evolves as project work progresses.	Student files and folders are consistently named and logically organized on both local and remote drives. File organization is created at the start of a project.
Task review	Student does not respond to feedback, or student redesigns without deciding whether the feedback improves the content and design of the project.	Student responds to feedback, deciding which feedback improves the content and design of the project. Incorporates some of this feedback into redesign.	Student responds thoughtfully and completely to feedback, deciding which feedback most effectively improves the content and design of the project. Incorporates this feedback into redesign of a project.
Time management	Student does not effectively allot time for the phases of the design and development process. Completes few phases on schedule.	Student allots time for each phase of the design and development process through a project plan. Completes most phases on schedule.	Student thoughtfully and effectively allots time for each phase of the design and development process through a project plan. Completes all phases on schedule.

ISTE NETS*S Standards for Students

The International Society for Technology in Education (ISTE) is the trusted source for professional development, knowledge generation, advocacy, and leadership for innovation. These standards, identified throughout the *Interactive Design* curriculum, are integrated into the various activities students engage in during each project.

I. Creativity and Innovation
   Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

   A. apply existing knowledge to generate new ideas, products, or processes.

   B. create original works as a means of personal or group expression

   C. use models and simulations to explore complex systems and issues.

   D. identify trends and forecast possibilities.

II. Communication and Collaboration
   Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:

   A. interact, collaborate, and publish with peers, experts or others employing a variety of digital environments and media.

   B. communicate information and ideas effectively to multiple audiences using a variety of media and formats.

   C. develop cultural understanding and global awareness by engaging with learners of other cultures.

   D. contribute to project teams to produce original works or solve problems.

III. Research and Information Fluency
   Students apply digital tools to gather, evaluate, and use information. Students:

   A. plan strategies to guide inquiry.

   B. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

   C. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.

   D. process data and report results.

IV. Critical Thinking, Problem-Solving & Decision-Making
   Students use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using appropriate digital tools and resources. Students:

   A. identify and define authentic problems and significant questions for investigation.

   B. plan and manage activities to develop a solution or complete a project.

C. collect and analyze data to identify solutions and/or make informed decisions.

D. use multiple processes and diverse perspectives to explore alternative solutions.

V. Digital Citizenship
Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:

A. advocate and practice safe, legal, and responsible use of information and technology.

B. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.

C. demonstrate personal responsibility for lifelong learning.

D. exhibit leadership for digital citizenship.

VI. Technology Operations and Concepts
Students demonstrate a sound understanding of technology concepts, systems and operations. Students:

A. understand and use technology systems.

B. select and use applications effectively and productively.

C. troubleshoot systems and applications.

D. transfer current knowledge to learning of new technologies.

Adobe Certified Associate (ACA) exam

Over the last few years, Adobe conducted research to identify the foundation skills students need to create effective communication using different digital media tools. Adobe met with educators and design professionals and surveyed businesses and educational institutions around the world. The research resulted in objectives that cover design, project planning, communication, and technology. The following set of essential learning objectives are a part of the Adobe Certified Associate exam in Interactive Media and is integrated throughout the *Interactive Design* curriculum.

Adobe Certified Associate in Interactive Media using Adobe Flash Professional exam objectives

Setting project requirements

1.1   Identify the purpose, audience, and audience needs for interactive media content.

1.2   Identify interactive media content that is relevant to the purpose of the media in which it will be used (websites, mobile devices, and so on).

1.3   Understand options for producing accessible interactive media content.

1.4   Demonstrate knowledge of standard copyright rules (related terms, obtaining permission, and citing copyrighted material).

1.5   Understand project management tasks and responsibilities.

1.6   Communicate with others (such as peers and clients) about design and content plans.

Identifying Interactive Media Design Elements

2.1   Identify best practices for designing interactive media content for desktop and mobile browsers, applications, games and HD video.

2.2   Demonstrate knowledge of design elements and principles.

2.3   Identify general techniques to create interactive media elements that are accessible and readable.

2.4   Use a storyboard to design interactive media elements.

2.5   Organize an interactive media design document.

Understanding the Adobe Flash interface

3.1   Identify elements of the Flash interface.

3.2   Use the Property inspector.

3.3   Use the Timeline.

3.4   Adjust document properties.

3.5   Use Flash guides and rulers.

3.6   Use the Motion Editor.

3.7   Understand Flash file types.

3.8   Identify best practices for managing the file size of a published Flash or HTML document.

Building Interactive Media Elements by Using Flash Professional

4.1   Make interactive media content development decisions based on your analysis and interpretation of design specifications.

4.2   Use tools on the Tools panel to select, create, and manipulate graphics and text.

4.3   Import and modify graphics.

4.4   Create text.

4.5   Adjust text properties.

4.6   Create objects and convert them to symbols, including graphics, movie clips, and buttons.

4.7   Understand symbols and the library.

4.8   Edit symbols and instances.

4.9   Create masks.

4.10 Create animations (changes in shape, position, size, color, and transparency).

4.11 Add simple controls through ActionScript 3.0.

4.12 Import and use sound.

4.13 Add and export video.

4.14 Publish and export Flash documents.

4.15 Make a Flash document accessible.

Evaluating Interactive Media Elements by Using Flash Professional

5.1   Conduct basic technical tests.

5.2   Identify techniques for basic usability tests.