

DIGITAL MULTIMEDIA DESIGN

CAPSTONE



Table of Contents

About	1.1
Introduction	1.2
Assessment	1.3
Concept development	1.4
Capstone project	1.5
1. Project proposal	1.5.1
2. Project agreement form	1.5.2
3. Proof of ability	1.5.3
3. Research	1.5.4
4. Production reports	1.5.5
5. Production report discussions	1.5.6
6. Midterm video	1.5.7
7. Exhibition statement	1.5.8
8. Project document	1.5.9
9. Explainer video	1.5.10
10. Capstone project exhibition	1.5.11
Project categories	1.6
License	1.7

DMD 400: Digital Multimedia Design Capstone

DMD 400 is the third of three spine courses in the Bachelor of Design in Digital Multimedia Design (DMD) program at Penn State University. This program is the first entirely online multi-college undergraduate bachelor's degree program offered at Penn State.

Visit the [DMD Program Hub](#) for more details.

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License

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Contributing

Anyone can recommend additions or alterations. Please, submit a [pull request on github.com](#) or file an issue in the [issue queue](#).

Introduction

This course follows [DMD 300: Digital Multimedia Design Studio](#). In that course, students participated in a group design project, and developed their own independent project using digital formats and tools of their choosing. In DMD 400: Digital Multimedia Design Capstone, students will have the opportunity to develop a focused capstone project.

Course description

In this capstone, students develop portfolio projects by applying creative production concepts, tools, and approaches to a contemporary issue. DMD 400 Digital Multimedia Design Capstone is an advanced, senior-level capstone experience, students will synthesize the concepts, tools, and approaches learned throughout their studies and demonstrate competencies in creative and technical production in an applied human-centered thesis project. Students will work as change agents to address a critical, real-world, local or global issue or challenge and work through the design process to complete a capstone project. Students will explore processes in interdisciplinary problem spaces and connect to broader context of design decisions promoting agency over project outcomes, applications, deliverables, and knowledge-sharing.

Student projects will include design proposals and/or implementations for digital or physical products and systems. To examine their understanding of design leadership, students will practice design thinking and production methods to generate project ideas, discover opportunities, and communicate intent; practice systems thinking to define the boundaries and impact of a problem space; and practice critical thinking to evaluate research issues, develop meaning, and inspire creative output. Students will be able to deploy project management skills to ensure on-time delivery of final project, communicate project concepts through visual models, and will leverage a variety of digital resources and methods to disseminate work in online contexts including social media, websites, and others.

Assessment

See Canvas for the course schedule.

Students in DMD-400 are assessed on their ability to synthesize a feasible design project, produce deliverables on time, and engage with a design process they outlined for the project.

To pass the course, students must meet the capstone requirements indicated in the capstone project section. Students will spend the entire course developing a single capstone project, including check-ins and development stages.

Final Project

By taking this course you are not guaranteed to pass it simply by turning in a final project and completing production reports and other projects. Your final project must incorporate feedback from your professor, external reviewers, and peers. You must document and show your efforts to explore feedback in your work and production reports.

At the midterm and final review, your work will be reviewed by external reviewers. If your project is not meeting the DMD program requirements you will be given a warning at midterm. If this warning is not acted upon and you ignore your professor's feedback leading up to your final you could fail the course and need to retake it. Your final project, once reviewed by external reviewers, will be deemed viable or not viable by the DMD program faculty. If your final project does not meet the requirements of the DMD program you will not pass the course.

In order to pass this course you must earn a C or better. In order for your final project to be included in the exhibition your actual final project must earn a C or better.

Production Reports

Students will be required to post regular updates on a blog or similar online platform to document their research and progress throughout the semester. The points for these reports are not guaranteed and will not be awarded if your report does not meet the criteria.

Incremental Process Assignment

These include miscellaneous check-ins, drafts of writing, and required Zoom meetings with the instructor. The points for these assignments are not guaranteed and will not be awarded if your assignment does not meet the criteria.

Concept development

A concept is a core idea (or set of ideas) that signify basic values, motivations and practices inherent in a project. A project lacking strong concept development tends to be shallow and without regard for cultural and community contexts, which will become apparent during discussion and critique. There are two typical concept development approaches. The *directed concept approach* refers to when a concept is established and defined at the beginning stages of project development, and the *emerging concept approach* is where the concept is allowed to emerge and evolve during the production of a project.

Situating (Directed concept approach):

- "Top-down" approach
- Process of deduction
- Theory » Hypothesis » Observation » Confirmation

Concepts are directed through a mapping process either before or in the beginning stages of a project. An interpretation of outcomes of an inquiry will depend in part on the frame of reference of existing knowledge. What is known helps identify what is not. Situating is a method that opens up lines of inquiry commonly used to review literature and information sources in the public domain. Situating is a curatorial process for looking at existing things in new ways.

Revealing (Emerging concept approach):

- "Bottom-up" approach
- Process of induction
- Observations » Pattern » Hypothesis » Theory

Concepts emerge over the course of the project through an ongoing discovery process. A core purpose of inquiry is to discover new knowledge or the possibility of thinking about things in new, innovative ways. To reveal something relies on others experiencing a change of awareness or understanding. Revealing, therefore is not only a method of discovery, but requires multiple ways of communicating to target groups and others.

A project concept is always in support of an overarching theme or purpose. A well developed concept can help the artist or designer to ask questions in novel or provocative ways or to find new approaches to solving problems or eliciting emotional responses. Once you have the concept, all decisions are for the purpose of expressing it as effectively as possible. Depending on your interests, you don't always have to develop the core theme or issue. Design competitions and festivals are a good place to start if you are unsure of where to begin:

UX, product, service and social design:

- [AIGA Design for Good competition](#)
- [Open IDEO](#)
- [UX Design Awards](#)
- [UX Design Contest](#)
- [alistofawards.com](#)

Graphic design and packaging:

- [Designboom.com](#)
- [Dexigner.com](#)
- https://jba_en.submit.to/landing/award
- <https://www.rgd.ca/programs/sogood-awards> <https://type-competition.tdc.org/communication-entries> <https://www.penguin.co.uk/company/work-with-us/student-design-award/student-design-award.html>
- <https://www.thersa.org/action-and-research/rsa-projects/design/student-design-awards>
- <https://young-package.com/en/>

Game design:

- [Wikipedia List](#)
- [Games for Change](#)
- [Independent Games Festival](#)
- [STEM Challenge](#)
- [CHI Play](#)
- [The Game Crafter](#)
- [Change the Game Design Challenge](#)
- [A'Design Award Competition](#)
- [Board Game Design Lab](#)

Animation

- [Animation World Competition](#)
- [The Rookies](#)

New Media Art

- [Ars Electronica](#)
- [Transmediale](#)
- [SXSW](#) (sound, film, art, games, VR)
- [Rhizome](#) (net art)

How to develop a good concept

Creative thinking methods are helpful for identifying a concept. However, more often than not, everyday observations are enough to spark an idea. It is helpful to keep around a small notebook or store a running list of ideas on a mobile device.

Key features of a good concept:

1. Feasible to accomplish in the given timeframe
2. Invention and/or unexpected combinations to produce novelty
3. Links to relevant cultural, historical, social contexts
4. Explores moral and ethical issues or quandaries
5. Aesthetic and theoretical explorations

In DMD 100, students are guided through the entire production of three projects through a careful orchestration of design thinking exercises and a set of rules or criteria that bounded the scope. The rules set in place made it so that the student could concentrate on the content of the project, rather than finding an appropriate scale and bounds for the project. In a capstone project, students are responsible for establishing these rules for themselves, an often difficult task that takes practice to master.

Capstone project

A capstone project represents the culmination of your interests and skills developed throughout your studies. Capstone's are typically individual projects, though you have the option to enlist the help of peer DMD students who may have complimentary skills to help bring your project to fruition. The capstone project must include a major research component, demonstrated media production skills and techniques, and participation in the online capstone project exhibition. Capstone projects must be able to be completed within the duration of the capstone experience. In order to successfully complete the capstone project, a good understanding of media, production workflows, and project scope will be needed. You will produce documentation, meet deliverable and milestone deadlines, introduce relevant theory and analysis, and participate in the capstone project online exhibition.

Project deliverables

The capstone project is broken down into the following deliverable categories. See each category for more information about deliverable requirements:

1. [Proposal](#)
2. [Agreement form](#)
3. [Evidence of ability](#)
4. [Research](#)
5. [Progress reports](#)
6. [Statement](#)
7. [Project document](#)
8. [Project explainer video](#)
9. [Capstone project exhibition](#)

Expectations

Each project should demonstrate a minimum of entry-level skills for their chosen field.

1. Define a project proposal
 - i. Outcomes
 - ii. Context and impact
 - iii. Themes
 - iv. Scope: What can you do in 1 semester?
 - v. Identify a production process and timeline
 - vi. Identify faculty or industry mentor
 - vii. If a group project, what roles and workload must be defined.
2. Minimum of three (3) Check-ins with advisor, mentor, or client.
 - i. Notes or takeaways from meeting
 - ii. Student facilitates meeting by being prepared to show progress, prepare questions ahead of time, and schedule meetings.
3. Account for faculty reviewer feedback. Failure to consider reviewer feedback can result in a lower overall project grade, particularly if the project outcomes suffered as a result of ignoring advice or analysis.
4. Project deliverables
 - i. Project should either be based on a clearly defined career intention or a well defined concept and theme. Expressive projects must be well articulated in the project statement.
5. Deliver a final presentation and contribution for student exhibition of work.

Types

While project types may overlap, in general, they can be broken down into a few types. You can map [project categories](#) to the following:

- Client-based project
 - This project is based on fulfilling stakeholder needs and requirements.
- Experimental and experiential art or design
 - This type refers to creative projects that feature aesthetic explorations often based on new or existing theory and practices.
 - Often the purpose of experimental work is to create new knowledge, explore meaning, and phenomenology.
- Story-driven
 - Story driven projects comprise of fictional or non-fictional stories told through digital narrative media. These stories can be either new or reimagined existing stories.

Capstone Project Proposal

The capstone project proposal is the first step in producing a capstone project for the Digital Multimedia Design degree program. It asks you to think through the entire production process of the upcoming project, and helps you identify what research you'll need to conduct.

The following must be included in the proposal:

1. Title page

- i. Project Title
- ii. "DMD Capstone Project Proposal"
- iii. Name
- iv. Date
- v. "DMD 400: Digital Multimedia Design Capstone"

2. Bio

- Here you will list what you know, and what you are interested in. This should be related to the project concept. (IE - if you are skilled and interested in web development, it would be confusing to then propose an animation project.)
- List existing digital media skills and other relevant skills.
- List any skills you hope to obtain during this project.

3. Concept

- Concise description of the project ideas.
- What design methods will be used?
- What production tools will be used?
- What topics and theory need to be researched?
- Who is the intended audience?

4. Advisor

- Project advisor name and job title
- Advisor area of expertise
 - The advisor should not be a project client you are working with to develop the project. Find an industry professional that you will have at least three meetings with in order to facilitate the development of your project. This should be someone who is expert in the technical area of your project. If your project includes field specific knowledge outside of the digital arts, you may also want to find an expert in this field (IE – if your project attempts to teach about).
- Contact email address for advisor, mentor or client
- Background or qualifications for advisor, mentor or client

5. Production scope

- What are the deliverables to be completed or produced? (IE - storyboards, interviews, web application, website, wireframes, animatics, character designs, scripts, game executable, video, etc.)
- What is the culmination of the production? (EG - Animated video, interactive app prototype, video documentation of an installation, etc.)

6. Production pipeline

- What tools will be used?
- What design processes and methods will be used?
- Who will be involved (list any collaborators, advisors, etc.)?
- Will you use management tools to keep on track?

7. Capabilities

- **Necessary capabilities and skills**
 - Describe all capabilities and skills necessary to complete the project?
- **Existing capabilities and skills**
 - **Show** and **describe** past work that demonstrates your existing capabilities as related to the project concept. Use figures and appendices where necessary.
- **Needed capabilities and skills**
 - What required capabilities and skills do you not currently possess that are needed to complete the project.

- Explain how you will get up to speed in time.

8. Timeline

- List all steps anticipated in the production of the project and assign them to a due date. The timeline can be graphic in nature so long as it is readable.
- Ensure the timeline is feasible.

9. Research

- What areas of research do you intend to pursue during the production of this project? Examples include any technical or craft aspects of the project, required visual research, user research, design thinking or methods research, and others. Please see the [research](#) page for more details.
 - Your project should either include a contemporary critical issue, explore critical theory, or relate the project to design methods and principles.
- What research resources available to you?

10. Questions for your proposal reviewers

- List three questions that might help you better some aspect of the project. Avoid vague questions such as, “*Is this a good project?*” or “*What should I do?*”. Instead focus your questions on the specific areas of your project that could benefit from feedback.

Submission details

Does the proposal include all specified sections? Are all sections thoughtfully considered and fully developed? Is this proposal free from spelling and grammar errors? If so, submit the following:

1. See submission format in canvas

Agreement form

Please fill out the form link in Canvas.

Grading Rubric

This assignment is pass/fail.

Passing: In order to get a passing mark, you will need to complete the agreement form.

Failing: A failing mark indicates that you have not submitted the agreement form.

Evidence of ability

A proof of ability is a small demonstration of a skill or capability that is indicative of your ability to complete a larger work using the same tools and techniques. If you struggle to complete a proof of ability for your intended project, you may need to rethink the scope of your work, or reduce the need for complex technical skills. You can still convey a compelling project idea by being resourceful and adaptable in the production approach when faced with insurmountable technical obstacles.

The proof itself depends on the type of project and media being used. However, there are standard ways of showing competency in a given craft. For specific recommendations for the project proof of ability, see the proof of concept sections at the bottom of the [project categories](#) pages.

Submission details

You will be creating and submitting a **PDF presentation** document which can be exported from either MS Word or PowerPoint, or the equivalent Google products with the following:

1. Include an example of **past work** that is related to your project.
 - Include a paragraph describing what you have learned since producing this work, and/or what you hope to improve upon for the upcoming project.
2. Include **new work** that is representative of the skills and knowledge needed to complete the project.
 - Include a paragraph describing what you already feel comfortable producing, and what knowledge of skills will need to be acquired to produce the capstone project as it is proposed.
 - The new work should address the newest, most relevant, least familiar, or most difficult aspect of the project to demonstrate that you will be able to have success in completing the capstone project.
 - **Examples:** See [project categories](#) pages **Proof of Concept** sections.
3. Name the document **lastname-proof-of-ability.pdf** and include images, screenshots, and paragraph descriptions from step 1 and 2 by the due dates indicated on Canvas.
 - **Note:** Do not submit a ZIP file with multiple files, rather compile your work into a single PDF presentation. You can include a screenshot and link to a single video reel compiling the work you wish to show if the work is time based, or screenshots and links to multiple videos. If your work is interactive, create a screenrecording video to document the function of the interaction with accompanying screenshot and link. All links should be accompanied by screenshots or images that act as a preview of the work.

Project research expectations

Research expectations can differ between projects. For the Digital Multimedia Design Capstone course, students can select from a variety of media types that correspond to their fields of interest. Research is integral to the design process that you will be using for the capstone project, and therefore, everyone will incorporate appropriate research methods into their production timelines. The importance of conducting research can be summed up by the following:

Research...

1. Contextualizes your work within the broader landscape of work;
2. Helps to base your design work on current standards and the latest thinking in the discipline;
3. Drives your design decisions based on credible ideas, facts, and data — communicating the rationale of your design decisions;
4. Eliminates as much harmful bias as possible. Everyone will inevitably bring bias to the design process;
5. A well researched project leads to a credible, unique, and a well designed project .

Discipline specific

Choose the research that best suits your project's intended outcomes. If you are creating products or services, you may do research into existing ones to better understand what has been done and how your project will stand out. You may conduct visual research for interface design, or use a variety methods to better understand how users might use your design. If you are creating a video game, you may need to research certain relevant history, game theory, or various design research related to developing characters and props in your game. The research that you conduct depends of the scope of work and the main focus of your work. If you are creating a graphic design project, you may start by researching case studies of similar projects, look into the history or context of the subject matter you are designing for, and get a better understanding of client or business goals through a variety of research methods. If you are doing video or photography, perhaps you will do research into other artists, films, or work that you may try to emulate.

Not sure where to start? The [DMD Art and Design Course Resources](#) offers a good starting point for many project types.

Universal requirements

1. All projects will likely include research into the techniques and tools that may be best suited to completing the project.
2. Most projects are visual in nature, and will likely include visual research of some kind.
3. When working with sensitive or discipline specific subjects outside of your expertise such as health, social issues, politics, the environment, etc., you will need to rely on experts or scholarly publications as your source for data.

Capstone project production reports

A production report is a comprehensive update about what progress has been made. A report can consist of any visual or text description and may include screenshot images, photographs of prototypes, video of working functionality, code snippets, production artwork, concept maps, research findings, work inspiration, storyboards and scripts, etc.

Each blog post should be a minimum of 500 words long, and include images or other media.

Reports will be due regularly throughout the course to document your progress.

Production blog

The production blog can be hosted anywhere. If you already have a blog created, you may use your existing blog to track progress for this project.

Hosted blog choices include:

- [Medium.com](#)
- [Wix](#)
- [WordPress.com](#)
- [Blogger](#)
- [Tumblr](#)
- [sites.psu.edu](#)
- [Github Pages](#)
- [Squarespace](#)
- [Weebly](#)
- [Adobe Spark](#)

Submission details

Reports take the form of blog posts or post updates, and should be published on the production blog by the due dates indicated on Canvas.

Grading Rubric

These assignments are Pass/Fail.

Passing: In order to get a passing mark, you will need to show significant progress. Significant progress should demonstrate 30 hours of work. The overall project will require 100-130 hours of work.

Failing: A failing mark indicates that you have not achieved confidence from the capstone course instructor that you will be able to complete the capstone project in the current pace of progress. If you have three failing progress reports, you will be asked to withdraw or drop from the capstone course. If you are unable to complete the project to the level indicated in your project proposal, your project will be assessed as incomplete, and you will have to retake the course.

Capstone project production report discussions

Directions:

You will post step 1, and then you may have to return to complete part 2. Try to answer questions from you classmates, as this should be a two-way conversation.

1. **(DUE at due date)** Post a link to your production blog and write simple summary of your project. The summary should include:
 - The type of project you are making
 - Project timeline up to this point if it's not posted in the production blog
 - What you intended to accomplish in the production report
 - How it's going
 - Problems, challenges, opportunities
 - Respond to any questions that you may get from others.
2. **(DUE within 1 week after due date)** Review at least 3 classmates' work and leave feedback. Pay attention to the following:
 - You liking the project is nice, but not particularly helpful feedback. Try to help your classmate improve their work.
 - Use art and design vocabulary where applicable
 - Does the student's project seem like it's on track based on the timeline?
 - Identify artists, designers, or related projects to recommend for inspiration.
 - If there are visuals, or other production assets included in the production report, how well are they working? Do you have any suggestions for improvement?
 - Make recommendations for improving either the work or the production reports. Ask clarifying questions if you are confused or unsure what is happening in the production.

Rubric:

You will be graded based on the completeness of your production report and your feedback and comments on peer work as described in the instructions.

1. Posted a blog link and included the summary requirements on time
2. Commented on at least three peer reports on time. (Please choose another report to comment on if it already has three postings.)

Project midterm video

This video will help reviewers get a comprehensive understanding of your project in a short period of time. Produce a **short** (2 minutes or less) video presentation that explains the project process and outcomes for a general audience unfamiliar with the work.

Structuring the presentation

Please include the following requirements. Where appropriate, use specific examples (avoid vague language):

1. Project title and name screen
2. **Concept:** Short overview statement, typically white, bold text on a black background. Ensure that it is visible on screen long enough to be read by the viewer.
3. **Outcomes:** Explain the final deliverables that will be produced for the end of the semester.
4. **Progress:** Summarize the work completed so far
5. **Remaining production:** What production remains to be completed?
6. **Goals:** Explain how this project links to your future goals and how it will contribute to your portfolio of work.

You can overlay text on top of the images and video to describe the project, along with voice narration whenever possible. Do not leave the images and video up to interpretation.

Creating and exporting the video (recommended)

1. Create a presentation folder on your computer and save everything to this folder.
2. Create a PowerPoint or Google Slides presentation in widescreen aspect ratio
3. Export the slides as images
4. Record an audio narration for each slide using quicktime (should be about 1-3 minutes of audio)
5. Import the images and audio into premiere pro or aftereffects
6. Edit and export using H.264 format. This should be a small file size.

Additional software tutorials

Recording and editing software

- Screen Recording
 - Apple Quicktime
 - [How record your screen with Quicktime](#)
- [Screenflow](#) (free trial)
- [Camtasia](#) (free trial)
 - [LinkedIn Learning](#)
- Zoom
 - [Using Zoom to record a slides presentation](#)
- Video Editors (NLE)
 - Adobe Premiere Pro — Great all purpose editor
 - [Adobe Premiere Pro: Adding text to video](#)
 - [Essential Training](#) (LinkedIn Learning)
 - Adobe AfterEffects — For fancy animations
 - [Essential Training: Motion Graphics](#) (LinkedIn Learning)
 - Adobe Spark — For simple slideshow videos — Easy!
 - [Telling a Story with Adobe Spark](#) (LinkedIn Learning)

Exporting Your Video

Videos should be exported as a `.mp4` file with an h.264 codec. This is most common format for distributing videos on the web.

1920px x 1080px is standard HD video size, so that's a great target to make your video, but if you have a conceptual or technical reason you need to size your video differently, other sizes may be acceptable.

- [How to export in H.264 format with Adobe Premiere](#)

Videos should be smaller than 500MB. To decrease your file size, you can try the following:

- Ensure you are using the h.264 codec when exporting. Use the share feature in quicktime to export a large video.
- Decrease your video's bitrate in the export settings (for reference check out the [recommended bitrate settings](#) for YouTube). Bitrate is basically how much detail goes into each frame of your video.
- If you aren't happy with the results from that you can always decrease the overall size of your video to 1280px by 720px or something similar.

Submission details

Submit this video in the appropriate Canvas module.

Capstone project exhibition statement

Write a 150-500 word project statement that thoughtfully employs relevant and critical art and design language. This statement should be developed with feedback from your instructor to adjust tone, terminology, and structure. You will use MS Word tracked changes to refine and edit the statement over the duration of the project.

The statement's use of language should seek a balance of accurate technical terminology, concise statements about the work, and language that is accessible to a diverse audience and is wholly descriptive. It is easy for artists and designers to adopt opaque language when attempting to describe abstract works. Developing playful language can be a fun exercise, but has the tendency to confuse or shut out those without a strong grasp of obscure and creatively constructed language. There are really no rules with how language is used, but ultimately the goal in a work statement is that the artist or designer can clearly communicate their ideas, processes, and outcomes to a wide audience.

Structure of the statement

Please write the statement in essay form using proper grammar, sentence structure, and with complete paragraphs. Do not copy and paste the following list of requirements into your statement. Instead, the statement should flow as a single description of your project. The final draft of this statement will be publicly viewable on the capstone exhibition website. The following points have been provided as a guide:

1. Include your **project title**.
2. In one sentence, **explain what the project is**. This may include who it's for, or how it works.
 - i. **Example:** "This project is an online game for children that teaches players living in war-torn countries how to avoid landmines."
3. **Describe the design challenge** (the provocation, goal, or existing problem you hope to tackle)
 - i. **Note:** The focus of a design project is not to learn or use software, so please do not place emphasis on particular software (IE. "This project was made in Photoshop"). Instead, reference the project category (IE - Branding, animated film, etc.)
4. **Describe the process** or how you approached solving for the design challenge
5. Describe the **impact** the work might have, the **context** in which it sits, **why it's interesting**, etc.

Submission details

1. Did you write the statement in essay form and is it at least 150 words? If so, upload the work statement as an MS Word Document to Canvas by the indicated deadline.
2. If you are submitting a second or final draft of the statement, please ensure that you've read the feedback located in the tracked changes including recommended changes as well as comments. Please confirm that changes have been either confirmed or rejected in second or final drafts. If you do not know how to use tracked changes, [please see this link](#).

Grading Rubric

This assignment is pass/fail.

Passing: In order to get a passing mark, you will need to show significant progress. Significant progress should demonstrate 10–20 hours of work. The overall project will require 100–130 hours of work.

Failing: A failing mark indicates that you have not achieved confidence from the capstone course instructor that you will be able to complete the capstone project in the current pace of progress. If you have three failing progress reports, you will be asked to withdraw or drop from the capstone course. If you are unable to complete the project to the level indicated in your project proposal, your project will be assessed as incomplete, and you will have to retake the course.

Capstone project document

Develop a project document that gives readers a clear understanding of your project, from beginning to end. This may be very similar to a project explainer video, where you essentially cover all aspects of the project.

Documents should be created in **Adobe InDesign** if possible. Documents produced in MS Word are less preferred, but acceptable. InDesign allows greater customization with layout and typography, to allow you to showcase your design abilities and ensure you are familiar with Adobe's industry standard publication software.

Example of excellent project documents

- [A world of our own](#), by Grace Brown

Format

1. Documentation must be provided as a PDF document.
2. Letter format (8.5 × 11 inches)

Document structure:

1. **Title page**
 - i. Title of project
 - ii. Subtitle (type of media - eg "An animated film" or "Web Application")
 - iii. Your Name (this will be public, if you are using a pseudonym, please use it here.)
 - iv. Semester and year (ie. FALL 2023)
 - v. "Undergraduate capstone project documentation"
 - vi. Instructor name
2. **School information page**
 - i. The Pennsylvania State University
 - ii. B.Des in Digital Multimedia Design
3. **Acknowledgements page** (optional but recommended)
 - i. Acknowledge anyone who has had an impact on the success of your project. Typically this would be advisors, mentors, family, and friends who have helped you along the way.
4. **Table of contents** <-- Only include everything after the table of contents. Do not include the table of contents page in the table.
5. **Project overview**
 - o Describe what your project is, what it's about, how you approached it, and what the outcomes were.
6. **Concept development**
 - o Describe main issues, themes, and ideas explored during concept development.
 - o Include relevant images, quotations, diagrams, figures, etc.
7. **Research** (These bullet points are meant to help you generate the document. It is not meant as a literal question and answer format. Please write this section formally)
 - o What questions were investigated during the production of the project?
 - o Who are notable people, companies or institutions for your chosen project field?
 - o Are there market forces that impact your project? If so, describe the target market, project stakeholders, and other market related information pertinent to your project.
 - o What are the historical and contemporary issues related to the field in question?
 - o What are some related projects, events, objects, works of art or design that inspired your capstone work?
 - o Include citations according to bibliography format used (APA, MLA)
8. **Production**

- Production requirements will vary between projects. Outline your process here and include any images or documentation that might be helpful to communicate it.

9. **Conclusion**

- Summarize the results of the capstone project.

10. **Bibliography**

- List research materials that support the project with associated citations throughout the document.
- Choose either APA or MLA format. Be consistent throughout the document.
- See [this link](#) for more information about writing bibliographies.
- You can add a **Citations** and/or a **References** section as well if those are more appropriate to support your research and documentation. See [this link](#) for more information.

11. **Image credits** (optional)

12. **Appendix** (optional)

Submission details

The final document should be exported and uploaded in PDF format.

Project explainer video

Produce a **short** video presentation that documents and explains the project process and outcomes for a general audience unfamiliar with the work (~2-3 minutes).

Example of excellent explainer videos

- [A world of our own](#) by Grace Brown

Structuring the presentation

There are different approaches to documentation video. A typical documentation video consists of the following:

1. Project title and name screen
2. **Concept:** Short overview statement, typically white, bold text on a black background. Ensure that it is visible on screen long enough to be read by the viewer.
3. **Research:** Photographs, images or video clips showing the research or key aspects that you developed to make the project successful.
4. **Production process:** Photographs, images or video clips showing the production of the project at various stages of development. You can photograph yourself or others participating in the experience or show relevant digital images that give the audience context of your narration.
 - Figure out the best way to communicate the things you are making. This can be screen captured videos or images, photographs of in-progress work, diagrams, etc.
5. **Project outcomes:** Include any of the following — Results of the project, insights, lessons learned, and plans for the future.

You can overlay text on top of the images and video to describe the project's development and outcomes along with voice narration to describe the project. Do not leave the images and video up to interpretation.

Creating and exporting the video (recommended)

1. Create a presentation folder on your computer and save everything to this folder.
2. Create a PowerPoint or Google Slides presentation in widescreen aspect ratio
3. Export the slides as images
4. Record an audio narration for each slide using quicktime (should be about 1-3 minutes of audio)
5. Import the images and audio into premiere pro or aftereffects
6. Edit and export using H.264 format. This should be a small file size.

Additional software tutorials

Recording and editing software

- Screen Recording
 - Apple Quicktime
 - [How record your screen with Quicktime](#)
- [Screenflow](#) (free trial)
- [Camtasia](#) (free trial)
 - [LinkedIn Learning](#)
- Zoom
 - [Using Zoom to record a slides presentation](#)

- Video Editors (NLE)
 - Adobe Premiere Pro — Great all purpose editor
 - [Adobe Premiere Pro: Adding text to video](#)
 - [Essential Training](#) (LinkedIn Learning)
 - Adobe AfterEffects — For fancy animations
 - [Essential Training: Motion Graphics](#) (LinkedIn Learning)
 - Adobe Spark — For simple slideshow videos — Easy!
 - [Telling a Story with Adobe Spark](#) (LinkedIn Learning)

Exporting Your Video

Videos should be exported as a `.mp4` file with an h.264 codec. This is most common format for distributing videos on the web.

1920px x 1080px is standard HD video size, so that's a great target to make your video, but if you have a conceptual or technical reason you need to size your video differently, other sizes may be acceptable.

- [How to export in H.264 format with Adobe Premiere](#)

Videos should be smaller than 500MB. To decrease your file size, you can try the following:

- Ensure you are using the h.264 codec when exporting. Use the share feature in quicktime to export a large video.
- Decrease your video's bitrate in the export settings (for reference check out the [recommended bitrate settings](#) for YouTube). Bitrate is basically how much detail goes into each frame of your video.
- If you aren't happy with the results from that you can always decrease the overall size of your video to 1280px by 720px or something similar.

Submission details

Submit this video as part of the documentation step.

Capstone project exhibition

The course will culminate in a public online exhibition of course work. This exhibition will be open to the public, and it asks you to present your finished visual works, project documentation, and a work statement. This exhibition will remain archived on the DMD website. You can choose to use a pseudonym when presenting your work publicly, either to obscure your name for privacy reasons, or to associate your exhibition work with an existing online presence/branding you have previously built.

Do not submit work to the online exhibition space that is not your own that could be construed as a copyright violation. This includes copyrighted music, images, video, and other works that are protected under copyright laws. If you worked with other people who have a claim over the copyright of the works, please have documentation on hand that clearly shows that you were given permission to showcase the work, either through a creative commons license, or through other types of permissions.

The online exhibition is a wonderful opportunity to publicly showcase your work and writing skills. See these examples of other online art and design exhibitions:

Art and design exhibitions (physical)

- [SIGGRAPH Digital Archive](#)
- [Prix Ars Electronica](#)

Art and design exhibitions (virtual)

- [New Museum: First Look](#)
- [Digital Fringe Festival](#)
- [Rhizome](#)

SIGGRAPH Digital Arts Community (DAC) Online Exhibitions

- <http://urgency-reality.siggraph.org/>
- <http://origins-journeys.siggraph.org/wp/>
- <https://designing-knowledge.siggraph.org/wp/>
- <http://immersive-expressions.siggraph.org/>
- <http://science-unseen.siggraph.org/>
- <http://altered-books.siggraph.org/wp/>
- <http://enhanced-vision.siggraph.org/wp/>
- <http://gameartshow.siggraph.org/gas/>
- <http://arts.siggraph.org/environment/>
- <http://arts.siggraph.org/siggraph2011/>

Uploading to the exhibition

Selected DMD exhibition project examples:

- [UX/UI example from Fall 2019](#)
- [Branding example from Fall 2020](#)
- [Physical exhibition from Spring 2023](#)
- [Interactive storytelling from Spring 2023](#)
- [Documentary filmmaking from Fall 2022](#)
- [Web design from Fall 2022](#)

There is an exhibition media upload form listed in Canvas. You will use this form to upload your work to the exhibition website.

The exhibition form supports the following information and media:

- Your name and other information. Emails are not displayed on the website.
- Image upload for your exhibition index card

- Explainer video from Youtube or Vimeo.
 - Do not use the full URL, only the video ID. Remove any video ID URL modifiers such as '&T=3s'.
- A link to your production blog
- Work/project statement
- Other project links (IE - app prototypes, live project websites)
- Upload for your PDF documentation
- Youtube and Vimeo videos
 - Do not use the full URL, only the video ID. Remove any video ID URL modifiers such as '&T=3s'.
- A gallery of images (minimum of 3, maximum of 15)
- iframe embed code if you would like to embed something from an online platform (IE - sketchfab.com 3D objects, codepen.io code, processing, etc.)
- File downloads (IE - game executables) (Note: 42 MB max file size.)
- Others upon request (request other media well in advance)

Media

When you have finished your project, you will need to submit media files for display on the exhibition website. Media files will vary from project to project, however, it is typical to have gallery images to highlight your project.

The exhibition website uses a site generator, and is sensitive to file names. Please use the exact filename structures listed for each item below.

Instructions:

Download Media template files (5.9MB) (Click the download button on this page): <https://github.com/dmd-program/dmd-course-graphics/blob/master/media-templates.zip>

The templates are not editable. They simply demonstrate the required sizes of videos and card images for the exhibition website.

Unless you are using a pseudonym, replace **last-name** in the file with your last name and **first-name** with your first name.

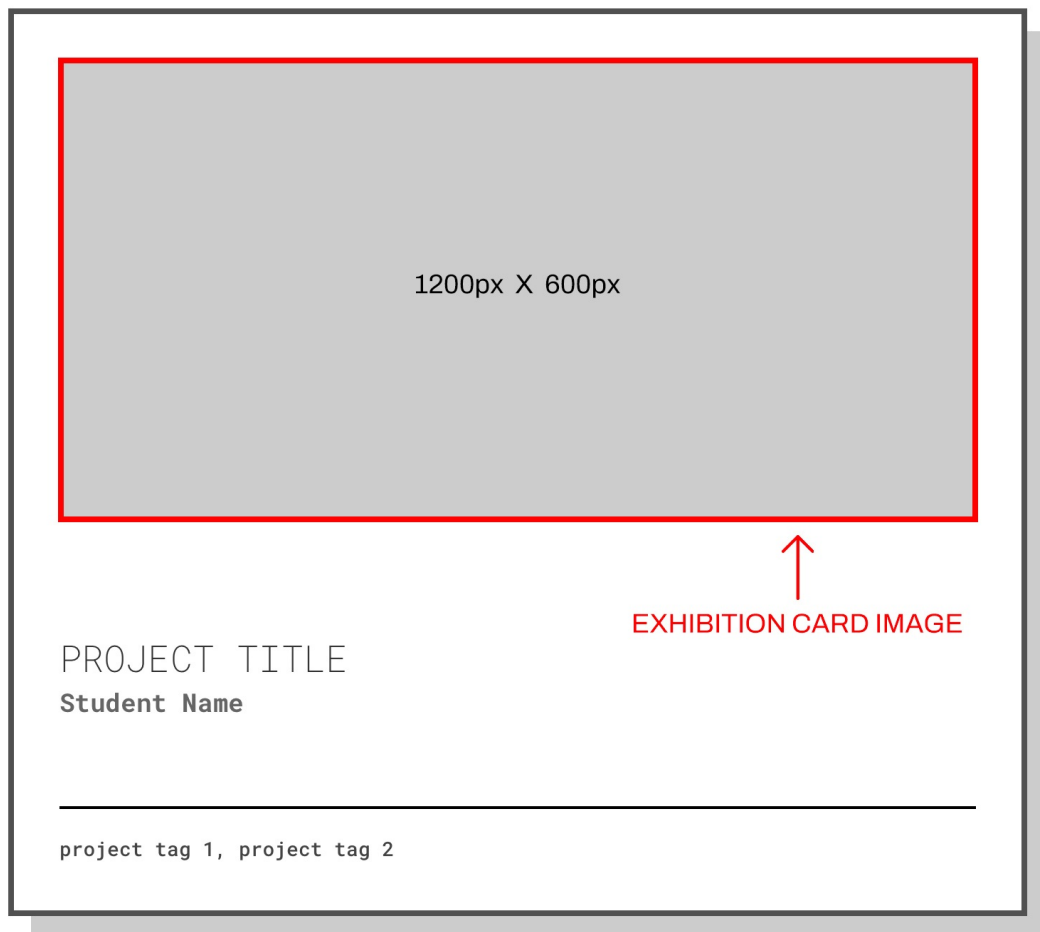
If you ARE using a pseudonym, please use it in place of **last-name_first-name**.

Exhibition card (index) image (required)

The exhibition card image will be displayed on the exhibition projects index page, the listing of everyone's work. The project name and student name will be displayed under the card image, so there is no need for you to put your name and project title on the card.

- Keep text to a minimum.
- Do not include the name of the project unless it is part of a logo or branding.

File name: last-name_first-name-exhibition-card-image-1200x600.jpg



Gallery images

Gallery images are shown on your project's profile page. Try to include between 3 to 12 images. Images can be close up views of details, documentation of process, etc. Do not include images larger than 2000px in any dimension. Use Photoshop to export .jpg images for display on the web at a compressed file size.

See image compression tutorial here: <https://www.youtube.com/watch?v=sKmlptbrL4s>

File naming:

1. last-name_first-name-gallery-image-01.jpg
2. last-name_first-name-gallery-image-02.jpg
3. last-name_first-name-gallery-image-03.jpg
4. last-name_first-name-gallery-image-##.jpg

Video files

Upload any videos to YouTube or Vimeo.

You can set it to "unlisted" if you don't want it fully accessible within YouTube. (The video will still be visible on the exhibition site.)

Enter only the video ID on the exhibition form. See examples below.

Where is the Project Explainer Video hosted? *

Youtube

Project Explainer Youtube Video ID

VIDEO ID

<https://www.youtube.com/watch?v=sKmlptbrL4s?t=17>

If you URL looks like this: <https://www.youtube.com/watch?v=dQw4w9WgXcQ> then your id is: dQw4w9WgXcQ

Where is the Project Explainer Video hosted? *

Vimeo

Project Explainer Vimeo Video ID

VIDEO ID

<https://vimeo.com/783453158>

If you URL looks like this: <https://vimeo.com/783453158> then your id is: 783453158

Interactive elements

If you are using an embedded interactive element, please include the embed code in a `.txt` file when submitting to canvas. If your interactive elements require many files to operate, please include a `.zip` file of those files.

File name:

`last-name_first-name-embed-01.txt` **or** `last-name_first-name-files-01.zip`

Audio

Convert audio files to `.mp3` so they may be playable from a web browser.

Example audio files: `last-name_first-name-audio.mp3`

Submission details

IMPORTANT: Follow the file naming conventions above.

1. Submit the final project media to Canvas by the indicated date in a `.zip` file.
 - Canvas does not have a file size limitation, the 42MB limit is for exhibition website uploads.
2. Upload your media and exhibition project information using the exhibition form listed in Canvas.
 - 42 MB is the maximum file size for any one file.

Project Categories and Resources

A capstone project will fall into one of several possible media types. These categories are not designed to limit your ideas, but to provide a menu possible project outcomes. You can blend categories together and steer your work into other areas if your instructor approves your plan.

DMD Resource Hub

Each of the categories below includes examples of specific project types, recommended production requirements, and expectations for a proof of concept.

Because these guides are used in both DMD-300 and DMD-400, the pages are hosted a separate Gitbook that can be accessed by students in both classes:

Access Link: [DMD Art and Design Resources](#)

Categories

- [2D and 3D Animation](#)
- [Apps and Interactive Media](#) (VR, AR, and games)
- [2D Design and Illustration](#)
- [Web Design and Development](#)
- [Video Production and Photography](#)
- [Audio Production and Recording](#)
- [Products, Services, and UX](#)
- [Installations and Objects](#) (digital fabrication, art objects, prototypes, and exhibitions)

If you're unsure of a direction to take or have suggestions for this resource list, simply get in touch with your instructor.

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If your publishing method prohibits schema, please use the visible attribution method provided.

OER Schema metadata attribution:

Add [OER Schema](#) and CC License to HTML source:

```
<!-- Add OERSchema and CC schema vocabulary to object -->
<div prefix="oer: http://oerschema.org/ cc:http://creativecommons.org/ns dc:http://purl.org/dc/terms/" resource="#oer-source">

    <!-- Add OER resource text and media here. -->

    <!-- Link the license and attribution to the page -->
    <link about="#oer-source" property="cc:license" content="https://creativecommons.org/licenses/by/4.0/">
    <meta about="#oer-source" property="cc:attributionUrl" content="https://www.gitbook.com/book/dmd-program/dmd-400-master" />
    <meta about="#oer-source" property="cc:attributionName" typeof="oer:Resource" content="Michael Collins">

</div>
```

Visible attribution

“[DMD 400: Digital Multimedia Design Capstone](#)” by Michael Collins is licensed under [CC-BY-4.0](#).”

```
<a href="https://github.com/dmd-program/dmd-400-master">DMD 400: Digital Multimedia Design Capstone</a>” by Michael Collins is
licensed under <a href="https://creativecommons.org/licenses/by/4.0/">CC-BY-4.0</a>.
```