



Slipcasting and 3D Printing

Matt Greco, Queens College Art

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Course Philosophy

- Ceramics students with varying abilities
- Hands-on experience in 3D modeling
- Learn about 3D printing process
- Practice with ceramics techniques
- Follow an idea from conception to realization



Course Philosophy

- Ceramics students with varying abilities
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**Unique
feature:**

Contrast between
the **traditional** technique of **slipcasting**
and the **modern** technique of **3D printing**

Casting Using Molds

- An ancient technique
- Mold: A negative shape of an object



Casting Using Molds

- An ancient technique
- Mold: A negative shape of an object
- Fill with a liquid, let harden



Slipcasting

- Use a plaster mold
- Fill with **slip** (a special liquid clay)



Slipcasting

- Use a plaster mold
- Fill with **slip** (a special liquid clay)
- Wait



Slipcasting

- Use a plaster mold
- Fill with **slip** (a special liquid clay)
- Wait
- **Pour out** excess slip.



Slipcasting

- Use a plaster mold
- Fill with **slip** (a special liquid clay)
- Wait
- **Pour out** excess slip.
- Wait



Slipcasting

- Use a plaster mold
- Fill with **slip** (a special liquid clay)
- Wait
- **Pour out** excess slip.
- Wait
- Extract from mold



Making the Mold

- One piece
- or two?



Making the Mold

- One piece
 - No overhangs or undercuts
- or two?



Deliverables

- 3D Modeled Cup and Bowl
- 8 Glazed castings of each



Class Structure

Week 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Intro

Skills Taught 3D Design

3D Design

Cup Design

Mold Making

Slipcasting

Firing

Glazing

Class Structure

Week 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Intro

Skills Taught 3D Design

3D Design

Cup Design

Mold Making

Slipcasting

Firing

Glazing

3D Design

- Sketch on paper
- Digitize using Fusion 360



3D Design

- Sketch on paper
- Digitize using Fusion 360
- Add a lip
- Ensure manifold
- Create a solid 3D print

Class Structure

Week 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Intro

Skills Taught 3D Design

Slipcasting,
Mold Making

3D Design

Cup Design

Mold Making

Cup Mold

Slipcasting

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Glazing



Class Structure

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Intro

Skills Taught 3D Design

Slipcasting,
Mold Making

3D Design

Cup Design

Mold Making

Cup Mold

Slipcasting

Firing

Glazing

Mold Making

- Embed 3D print in clay

Week

Skills Taught

3D Design

Mold Making

Slipcasting

Firing

Glazing



Mold Making



Cup Mold

8 9 10 11 12 13 14 15

Mold Making

- Embed 3D print in clay

Week

8 9 10 11 12 13 14 15

Skills Taught

3D Design

Mold Making

Slipcasting

Firing

Glazing



Mold Making



Cup Mold

Mold Making

- Embed 3D print in clay
- Pour plaster over model
- Wait for it to set

Week 1

Int



9 10 11 12 13 14 15

Mold Making

- Embed 3D print in clay
- Pour plaster over model
- Wait for it to set
- Extract 3D print



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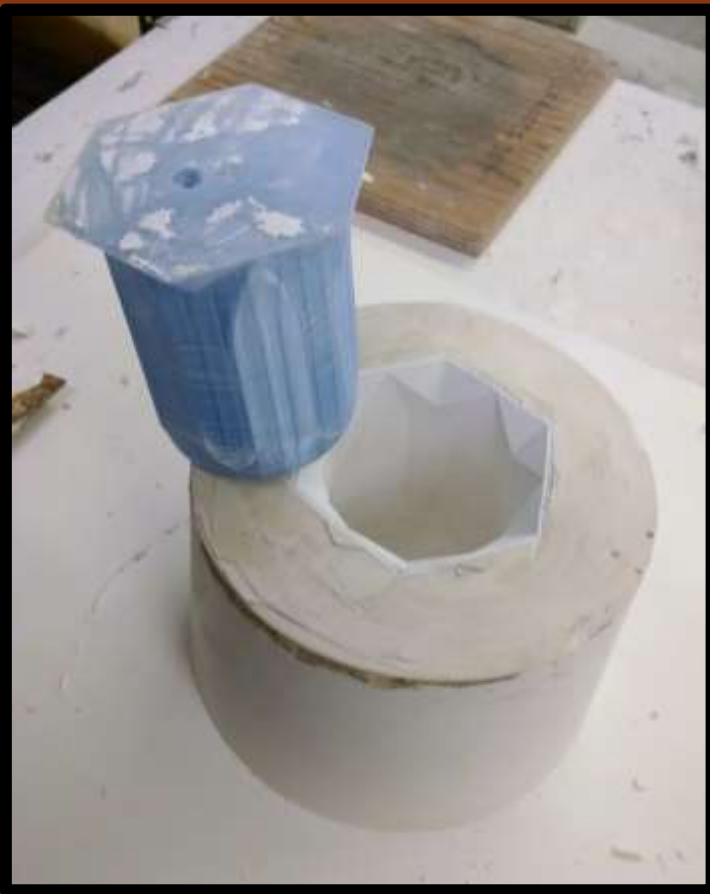
Cup Mold

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6 7 8 9 10 11 12 13 14 15

Mold Making

- Embed 3D print in clay
- Pour plaster over model
- Wait for it to set
- Extract 3D print
- A mold!



Week

Skills

3D D

Mold

Slip

Firing

Glazing

ire

Week

6 7 8 9 10 11 12 13 14 15

Skills

3D D

Mold

Slipcasting

Firing

Glazing



Mold Making

- Embed 3D print in clay
- Pour plaster over model
- Wait for it to set
- Extract 3D print
- A mold! **(That has to dry)**

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Glazing

Class Structure

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Intro

Skills Taught 3D Design

Slipcasting,
Mold Making

3D Design

Cup Design

Bowl Design

Mold Making

Cup Mold

Bowl Mold

Slipcasting

Firing

Glazing

Class Structure

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Intro

Skills Taught

3D Design

Slipcasting,
Mold Making

Ceramics, Glazing

3D Design

Cup Design

Bowl Design

Mold Making

Cup Mold

Bowl Mold

Slipcasting

Slipcasting, Drying

Firing

Glazing

Class



7 8 9 10 11 12 13 14 15

Week 1

Intro

Skills Taught 3

3D Design

Mold Making

Slipcasting

Firing

Glazing

Slipcasting, Making

Ceramics, Glazing

Bowl Design

Cup Mold

Bowl Mold

Slipcasting, Drying

Slipcasting

- First few prints season the mold
- Make **more** than eight of each

Class

Week 1

Intro

Skills Taught 3

3D Design

Mold Making

Slipcasting

Firing

Glazing



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Slipcasting, Making

Ceramics

Bowl Design

Cup Mold



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Slipcasting, Drying

Slipcasting

- First few prints season the mold
- Make **more** than eight of each
- Outside class time (community)
- Set prints to dry (greenware)

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3D Design

Slipcasting,
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Ceramics, Glazing

3D Design

Cup Design

Bowl Design

Mold Making

Cup Mold

Bowl Mold

Slipcasting

Slipcasting, Drying

Firing

Glazing

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Bowl Design

Mold Making

Cup Mold

Bowl Mold

Slipcasting

Slipcasting, Drying

Firing

Multiple Firings

Glazing

Glazing

Showcase

Class Structure



Week 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Intro

Skills Taught 3D Design

Slipcasting
Mold Ma

3D Design

Cup Design

Mold Making

Finishing

Cup Mold

Bowl Mold

Slipcasting • Fire once (Bisqueware)

Slipcasting, Drying

Firing

Multiple Firings

Glazing

Glazing

Showcase

Class Structure

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Slipcasting
Mold Ma

3D Design

Cup Design

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Finishing

Cup Mold

Bowl Mold

Slipcasting

- Fire once (Bisqueware)

Slipcasting, Dryi

Firing

- Glaze and fire again (Glazeware)

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Glazing

- Lots of experimentation, testing and practice. Use failed prints!



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Bowl Mold

Slipcasting

Slipcasting, Drying

Firing

Multiple Firings

Glazing

Glazing

Showcase

Showcase



Slipcasting and 3D Printing

Christopher Hanusa, Queens College @mathzorro



Final Thoughts

- Materials paid through mandatory art class fee
- Grading:
 - 20%** Solid 3D Prints
 - 20%** Shell 3D Prints
 - 20%** Plaster Molds
 - 40%** Entire Portfolio

Final Thoughts



- Materials paid through mandatory art class fee
- Grading: (effort, complexity, completeness)
20% Solid 3D Prints **20% Shell 3D Prints**
20% Plaster Molds **40% Entire Portfolio**
- What an experience!
- Encourages us all to slow down



Thank you!

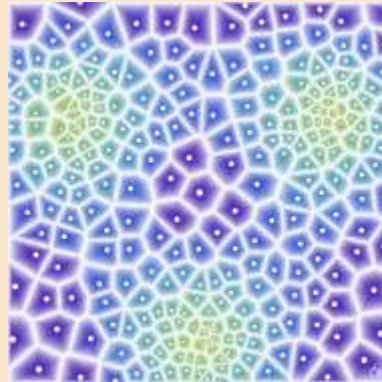
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