

ARCH 236: ADVANCED PARAMETRIC DESIGN

In Workflow

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Approval Path

1. 2026-05-15T23:32:41Z
Emily Potts (emily.potts): Approved for DOD Committee Chair
2. 2026-05-16T20:57:22Z
Richard Pratt (rpratt): Approved for DOD Chair
3. 2026-09-16T18:36:03Z
Rebeccakah Mulholland (rebeccakah.mulholland): Rollback to DOD Chair for ALS College Committee Chair
4. 2026-09-17T22:23:41Z
Richard Pratt (rpratt): Approved for DOD Chair
5. 2026-09-17T22:24:11Z
Rebeccakah Mulholland (rebeccakah.mulholland): Approved for ALS College Committee Chair
6. 2026-09-17T22:44:50Z
Gladys Francis (gladys.francis): Approved for ALS Dean

New Course Proposal

Date Submitted: 2026-05-15T15:50:57Z

Viewing: ARCH 236 : Advanced Parametric Design

Last edit: 2026-09-17T22:23:27Z

Changes proposed by: Mahtab Orooji (223030210)

Contact(s):

Name (First Last)	Email	Phone 999-999-9999
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Catalog Title:

Advanced Parametric Design

Class Schedule Title:

Advanced Parametric Design

Academic Group: (College)

ALS - Arts & Letters

Academic Organization: (Department)

Design

Will this course be offered through the College of Continuing Education (CCE)?

No

Catalog Year Effective:

Fall 2027 (2027/2028 Catalog)

Subject Area: (prefix)

ARCH - Architecture

Catalog Number: (course number)

236

Course ID: (For administrative use only.)

TBD

Units:

3

Is the ONLY purpose of this change to update the term typically offered or the enforcement of existing prerequisites at registration?

No

In what term(s) will this course typically be offered?

Fall term only

Does this course require a room for its final exam?

No, final exam does not require a room

Does this course replace an existing experimental course?

No

This course complies with the credit hour policy:

Yes

Justification for course proposal:

ARCH 236 is a new course proposal that develops advanced competency in parametric design and computational form-making through a structured lecture and activity format, pairing weekly discussion of algorithmic logic, generative design strategies, and critical perspectives on computational practice with hands-on technical sessions in Rhino, Grasshopper, Dynamo, and Revit. The course addresses a gap in the curriculum by treating parametric design not as an introductory computational skill but as a mature design methodology that integrates advanced geometric reasoning, generative optimization, BIM automation, and fabrication-informed thinking into a single coherent practice. By requiring students to evaluate their computational outcomes against criteria of constructability, fabrication feasibility, structural logic, and design intent – and by including a dedicated session on critical perspectives addressing authorship, complexity, and the limits of parametric design – the course ensures that graduates are technically fluent and also critically equipped to make principled judgments about when and how computational methods serve the goals of architecture.

Course Description: (Not to exceed 90 words and language should conform to catalog copy.)

Examines parametric and computational design as a mode of architectural reasoning in which relationships, rules, and constraints, rather than fixed geometries, become the primary objects of design. Situates algorithmic logic, data structures, and generative strategies within their theoretical and disciplinary contexts through a lecture/activity format. Topics include adaptive building components, automation of building information workflows, material logic, and generative exploration of design alternatives.

Are one or more field trips required with this course?

No

Fee Course?

No

Is this course designated as Service Learning?

No

Is this course designated as Curricular Community Engaged Learning?

No

Does this course require safety training?

No

Does this course require personal protective equipment (PPE)?

No

Does this course have prerequisites?

No

Does this course have corequisites?

No

Graded:

Letter

Approval required for enrollment?

Department Approval

Course Component(s) and Classification(s):

Activity

Activity Classification

CS#07 - Fine Arts and Science Activity (K-factor=1.3 WTU per unit)

Activity Units

3

Is this a paired course?

No

Is this course crosslisted?

No

Can this course be repeated for credit?

No

Can the course be taken for credit more than once during the same term?

No

Description of the Expected Learning Outcomes and Assessment Strategies:

List the Expected Learning Outcomes and their accompanying Assessment Strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers). Click the plus sign to add a new row.

	Expected Learning Outcome	Assessment Strategies
1	Formulate architectural design problems as parametric systems of relationships, rules, and constraints, drawing on algorithmic logic and data structures to describe complex form	Assessment #2: Project 1 Assessment #3: Project 2 Assessment #5: Final Project
2	Generate design alternatives through rule-based, field-driven, and evolutionary strategies that treat the design space itself as an object of inquiry.	Assessment #4: Project 3 Assessment #5: Final Project
3	Integrate facade systems, adaptive components, and structural form-finding logics within a coherent computational workflow that extends from early design through building information modeling	Assessment #3: Project 2 Assessment #4: Project 3 Assessment #5: Final Project
4	Evaluate computational design outcomes against constructability, fabrication feasibility, structural logic, and design intent, using iteration and critique to refine the underlying system..	Assessment #1: Participation & In-Class Critique Assessment #3: Project 2 Assessment #5: Final Project
5	Articulate a parametric design proposal through fabrication-ready documentation and representations that make its computational logic legible to collaborators and fabricators.	Assessment #1: Participation & In-Class Critique Assessment #2: Project 1 Assessment #3: Project 2 Assessment #4: Project 3 Assessment #5: Final Project

Attach a list of the required/recommended course readings and activities:

ARCH 236_syllabus.pdf

For whom is this course being developed?

Majors in the Dept

Is this course required in a degree program (major, minor, graduate degree, certificate?)

Yes

Has a corresponding Program Change been submitted to Workflow?

Yes

Identify the program(s) in which this course is required:

Programs:

Master of Arts in Architecture

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

No

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals

Graduate (Masters) Learning Goals:

Disciplinary knowledge

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

Is this a Graduate Writing Intensive (GWI) course?

No

Reviewer Comments:

Rebekkah Mulholland (rebekkah.mulholland) (Wed, 16 Sep 2026 18:36:03 GMT): Rollback: Thanks for your proposal. The committee has a few comments/suggestions: The course description dictates very specific assessment activities and not describing the goals, main topics and expectations of the class. Instead of listing software, which will be outdated before you know it, and the number of projects, that are assessments, saying "hands-on technical sessions" is better. The course description needs to be rewritten. The ELOs that list specific software also reflect this for the same reasons I list.

Key: 15576