Real Estate Development and Design

The development of urban real estate is one of the most powerful forces shaping our buildings, cities, and metropolitan regions. From finance to design, the choices we make about what to build, where to build, and how to build influence urban sustainability, equity, and resilience — today and for years to come.

Our rapidly urbanizing world faces major challenges, ranging from climate change to social inequality. We need real estate professionals who have a deep knowledge of how development can bring positive benefits to society and the environment, and who understand the power of design to make cities efficient, livable, distinctive, and valued.

The Nancy and Douglas Abbey Master of Real Estate Development + Design (Abbey MRED+D) is an interdisciplinary degree program that trains real estate practitioners to build sustainable, equitable, and innovative large- and small-scale real estate projects.

The curriculum educates diverse students to accelerate their careers in real estate with a firm foundation in finance, law and construction while centering principles of innovative, sustainable design and social equity, enabling graduates to tackle the built environment's pressing challenges, such as climate change, rising inequality and the housing shortage. Through cases, experiential learning, studios, industry-leading practitioner faculty and guest-lecturers, and the diverse perspectives, Abbey MRED+D students continuously improve their leadership, management, communication and foundational real estate skills, with a focus on design + urbanism, sustainability + resilience, and equity + inclusion.

The Abbey MRED+D degree requires students to complete a minimum of 36 units, including a capstone. The curriculum includes twelve (12) required courses and the opportunity to take up to 12 units of electives.

Required Courses

RDEV 200	Construction and Development Project Management	3
RDEV 209	Integrated Development, Architecture + Urbanism for Real Estate	4
RDEV 210	Real Estate Economics + Market Analysis	2
RDEV 220	Foundation Principles for Real Estate Development + Finance	4
RDEV 225	Applications in Real Estate Finance	3
RDEV 235	Real Estate Capital Markets	3
RDEV 240	Professional Practice of Real Estate Development	3
RDEV 250	Land Development Law and Regulations	3
RDEV 260	Sustainable Real Estate Development	3
RDEV 270	Development + Design Studio	4
RDEV 277	Equitable + Resilient Development	2
RDEV 280	Capstone Project	2

Sample Electives*

Students have the opportunity to customize their program by taking electives in areas of interest to them. Some common electives offered

in recent years are indicated below. In addition, students may petition to take electives not included on this list. Note that some elective classes may not be offered each year.

ARCH 242	Sustainability Colloquium	1,2
CY PLAN 205	Introduction to Planning and Environmental Law	3
CY PLAN C215	Global Urban Inequalities	3
CY PLAN 230	U.S. Housing, Planning, and Policy	3
CY PLAN 235	Affordable Housing Finance and Development	4
CYPLAN 290	An Interdisciplinary Approach to Land Development + Investment	3
EWMBA 233	Asset Management	3
EWMBA 292T	Climate Change and Business Strategy	3
LAW 257	Real Estate Transactions and Litigation	1
LD ARCH C110A	Ecological Analysis	4
MBA 212	Energy and Environmental Markets	3
MBA 252	Negotiations and Conflict Resolution	3
MBA 280	Real Estate Investment Analysis and Sustainability	3
MBA 282	Real Estate Development	3
MBA 283	Real Estate Finance and Securitization	3
MBA 291C	Active Communicating	1
MBA 292B	Nonprofit Boards	1
MBA 292ID	Impact Startup Disco	1
MBA 295A	Entrepreneurship	3
MBA 295B	Venture Capital and Private Equity	3
RDEV 290	Global Real Estate Intensive	1
RDEV 290	Small-Scale Real Estate Development	3
RDEV 297	Internship in Real Estate Development + Design	1-3

* Note: Subject to space availability (we cannot guarantee enrollment in specific elective courses for everyone). Enrollment in electives is subject to the procedures for the programs and Schools that offer these courses.

Required Application Materials

- 1. Transcripts (unofficial)
- 2. Two to Three Letters of Recommendation
- 3. Statement of Purpose*
- 4. Personal History Statement*
- 5. Resume/CV (Supporting Materials)
- 6. Video Question
- 7. Portfolio (strongly encouraged)
- 8. TOEFL or IELTS Scores (required for most international applicants)
- 9. GRE or GMAT Scores (optional)

*EDL: Emerging Development Leaders. Typically, applicants to MRED +D have at least two years of post-graduate work experience in a real estate-related field. EDL applicants have less than two years of full-time post-graduate work experience at the time of application. They must address why they feel now is the right time to pursue the MRED+D in their essays. No more than 10% of the cohort will comprise EDL students, and Emerging Development Leaders will engage in additional career development and mentorship opportunities throughout the year.

Transcripts

You must hold or expect to hold a bachelor's degree from a U.S. school accredited by one of the AACRAO regional accrediting agencies prior to the beginning of classes. International applicants must hold a degree equivalent to a U.S. bachelor's degree from a recognized academic institution.

Required Records:

Upload unofficial transcripts from all institutions where you obtained credit toward your undergraduate degree to the application for the departmental initial review. Unofficial transcripts must include at a minimum the name of the institution, your full name, and a chronological listing of all classes, grades, and credit hours. If your academic records do not include official evidence of the award of your degree, you must also submit additional documents that verify the degree conferral, such as a diploma or degree certificate. We also like to see transcripts from institutions where you received a graduate degree or completed post-graduate coursework, if applicable.

If your transcript is in a language other than English, then you must provide an official translation issued from your university or by certified members of the American Translators Association. Upload the original transcript *and* translation as one PDF.

Physical copies of official transcripts for college-level work will be required if admitted.

Please note that any discrepancy between uploaded transcripts and official transcripts could result in the denial of your application or withdrawal of your offer of admission.

Letters of recommendation

We require two letters of recommendation that provide the admissions committee with third-party, qualitative accounts of your potential for success. However, you may submit up to three letters of recommendation if you like. The online application will prompt you for three letters of recommendation; if you are only submitting the required two, just enter your own name and an alternative email address (or mredd@berkeley.edu) into the third space.

We strongly prefer that letters of recommendation come from a current direct supervisor, former direct supervisor, or other individuals with whom you have had significant professional interaction.* Please select individuals who know you well and who will take the time to write thorough and thoughtful letters on your behalf. The title of those you select is not important. What does matter is how closely your letter writers have worked with you and whether they can attest to your value as an employee, your professional accomplishments, your personal qualities, and your potential for success in the future. We have found the most helpful letters to be recent, relevant, and written specifically for this application, taking into account your goals for post-graduation. We discourage letters of recommendation from subordinates, family, friends, or professors. If you are reapplying to the MRED+D program, please ensure at least one recommendation is from a new reference and was written after your previous application was submitted.

When completing the online application, you will enter the email address of your recommender and click "Submit to Recommender," which sends your letter writer instructions for how to upload their letters directly to

your application. You are responsible for ensuring that both required recommendations are submitted prior to the application deadline.

*Academic references are generally not preferred EXCEPT for EDL applicants.

Essays

Applicants are required to complete two essays. Although we do not have a required minimum or maximum word count, the suggested length of each is around 1-to-2 pages single-spaced.

Statement of Purpose

Our essay question was created to provoke honest, thoughtful responses to help us get to know you. The admissions committee is interested in learning how your professional or other experiences and achievements equip you and motivate you to pursue the Abbey MRED+D degree.

You should describe what you are passionate about that motivates you to make an impact on the world. What are your short- and long-term career goals, how have your interests shaped these goals, and how will the MRED+D degree enable you to build on your prior professional experience to achieve these goals?

The Statement should demonstrate that you understand the MRED +D program and its goals, and should include discussion of how your interests align with our pillars of equity, sustainability and design.

Personal History Statement

Anything that can give the admissions committee a sense of you as a person belongs here. This may include personal histories that have shaped your interest in Real Estate Development + Design. Any information relating to the context of your achievement or challenges you have overcome would also be appropriate here. We also encourage you to highlight any experiences that show your understanding of historically underrepresented groups, and your commitment to serving them with your Abbey MRED+D degree.

Curriculum Vitae (CV) or Resume (Supporting Materials)

We are interested in learning about your work and experience. Please upload your most current resume or curriculum vitae in chronological format. If applicable, please also include honors, awards, languages spoken, and associations you belong to. Note that we do not require submissions in the "Sampling of Relevant Written Work" and "Publications and Presentations" sections.

Video Question

Upload a video to the Audio/Visual page in the application where, in 2 minutes or less, you tell us what drives your interests in real estate development + design and what you see yourself doing after you graduate from the MRED+D program. Please spend about one minute addressing each part of the question. Do not read your essays--there may be overlap in content, but please speak naturally in the video.

Evidence of English Proficiency

All applicants who have completed a basic degree in a country/region in which the official language is not English are required to submit official evidence of English language proficiency. This requirement applies to institutions from Bangladesh, Nepal, India, Pakistan, Latin America, the Middle East, Israel, the People's Republic of China, Taiwan, Japan, Korea, Southeast Asia, most European countries, and countries in Africa in which English is not the official language.

If you have completed at least one year of full-time academic course work with grades of B or better in residence at a recognized U.S. institution, you do not need to take a test of English proficiency. Instead, you must upload an unofficial transcript from the recognized U.S. institution. The following courses will not fulfill this requirement: 1) courses in English as a Second Language, 2) courses conducted in a language other than English, 3) courses that will be completed after the application is submitted, and 4) courses of a non-academic nature.

If you have questions about whether you must provide evidence of English proficiency, please email us at mredd@berkeley.edu with a summary of your academic history.

Portfolio

While a portfolio is not required, we strongly encourage applicants to submit images of work, brief writing samples, and/or past projects with your application. It is helpful for us to see work that is representative of your professional experience to date. Please keep these materials to no more than 10-12 pages in length. You may redact any confidential information as needed.

GRE or GMAT Scores

GRE or GMAT scores are not required but may help you demonstrate skills otherwise not present in your application. If you wish to submit them, please self-report your scores on the application and send the official results to UC Berkeley. For the GRE please use institutional code 4833. For GMAT scores please use institutional code N2V-M5-04.

Career Services:

The Abbey MRED+D program offers an array of workshops, networking and speaking events, and employer presentations to best prepare our students to obtain real estate development positions after graduation. There are also myriad opportunities to network with industry practitioners--including alumni and Doug Abbey (https://swiftrp.com/team/ douglas-abbey/)--through career events, guest lectures in class, and MRED+D's own lecture series. Students' career journeys are divided into three parts, one per academic term: self-discovery, career discovery, and career placement.

Internships:

Students may obtain part-time internships while completing their degree. They may receive course credit and/or be compensated by the employer.

Real Estate Competitions:

Students compete in myriad case competitions, primarily in the Spring, that allow them to hone their skills, connect with industry practitioners, and produce tangible work product that they can provide during their job searches. Examples of competitions in which our students have participated include, among others:

- *Bank of America Low-Income Housing Challenge
- *CASE Competition
- *Hack-A-House (Ivory Innovations)

*HUD Innovation in Affordable Housing Student Design and Planning Competition

*Kellogg Real Estate Venture Competition

*NAIOP SF Bay Area Real Estate Challenge, also known as "Golden Shovel" (direct competition between Berkeley and Stanford) *Real Estate Joint Venture Mock Negotiation *ULI Gerald Hines Student Competition *UT Austin National Real Estate Challenge

Clubs and Professional Organizations:

Students take part in the Berkeley Real Estate Club (BREC), which allows real estate graduate students from across campus to come together for speaking events, networking opportunities and case competitions. Membership is drawn primarily from the College of Environmental Design (the Abbey MRED+D's home school, which also includes architecture, landscape architecture, city and regional planning, and urban design graduate students), Berkeley Law School, the Haas School of Business, and the Goldman School of Public Policy.

The Abbey MRED+D provides students with membership in several professional organizations, such as the Urban Land Institute (ULI), NAIOP (the Commercial Real Estate Development Association), and ICSC (the International Council of Shopping Centers); the cohort attends the ULI Fall Meeting (in Las Vegas for Fall 2024) all together each year. We also offer optional ARGUS training.

Alumni Association:

Berkeley has an extensive network of alumni working in real estate in the Bay Area, nationally, and abroad. Students are encouraged to participate in Berkeley Real Estate Alumni Association (BREAA) activities while enrolled and to join BREAA upon graduation. BREAA includes graduates from the College of Environmental Design (including MRED+D), the Haas School of Business, Berkeley Law School, and other Berkeley schools and colleges, and it maintains active chapters in the Bay Area, Los Angeles and New York City.

RDEV 200 Construction and Development Project Management 3 Units

Terms offered: Fall 2020

Introduction to materials, means, methods and vocabulary of construction and sustainable building systems. Structural materials, building envelope, costs, labor conditions, conventional practices, and key regulatory factors shaping project design. Practical understanding of reading construction drawings, construction sequencing, building materials, building systems, building code and legal documents. Relationship between feasibility, budget, design, function and risk. **Hours & Format**

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

RDEV 205 Equitable + Inclusive Development 1 Unit

Terms offered: Fall 2020

Equitable and inclusive approaches to real estate development. Historical perspective of racial injustice in low-income communities of color, including gentrification and displacement. How real estate development can either ameliorate or exacerbate inequality and injustice in relation to race, class, ethnicity, and gender. Best practices and innovative new tools and strategies to ensure the benefits of new development are broadly shared with communities. **Hours & Format**

Fall and/or spring: 5 weeks - 3 hours of lecture per week

Summer: 8 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 209 Integrated Development, Architecture + Urbanism for Real Estate 4 Units

Terms offered: Prior to 2007

This course interrogates how development forces produce our streets, neighborhoods, towns, cities and metropolitan regions. It is focused on a critical understanding of development practices and their impact on urban form as well as the social, economic, cultural and environmental nature of cities, exploring these topics through a review of selected Case Studies. The course includes invited presentations from development, design, and planning industry professionals. This course will investigate how Development, Architecture and Urbanism are intertwined, contending that cities are our most sustainable resource, holding the key to our social, economic, and culturally equitable future, as well as our planet's environmental stewardship.

Hours & Format

Summer: 12 weeks - 6 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 210 Real Estate Economics + Market Analysis 2 Units

Terms offered: Fall 2020

This course teaches students the fundamentals of real estate development finance and economics. Grounded in an understanding of urban economics in large cities, the class will examine the factors in national, regional and local real estate markets that determine development needs and opportunities. Financial analysis skills and analytical processes will be developed for evaluating private and public sector development and investment sources employed across all major property classes and land uses. The class will discuss aspects of financial feasibility throughout the scope of the development process from market and predevelopment analysis and site selection to lease-up or sales of the final product.

Objectives & Outcomes

Course Objectives: Acquire an understanding of the economic and market impacts of different real estate development product types Develop critical financial analysis skills and knowledge to evaluate real estate development markets and opportunities

Gain financial knowledge and principles which support sustainable and more equitable real estate development

Understand how urban economics and investment markets impact urban land and real estate development production and viability

Hours & Format

Summer: 12 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 215 Real Estate Financial Modeling 1 Unit

Terms offered: Prior to 2007

This course is designed to facilitate a mastery of financial modeling (pro forma) skills required of real

estate developers through a hands-on approach using Microsoft Excel. It is designed to develop students'

ability to think critically about how real estate value is created and develop analytical tools used to derive

it. Active participation in class is a must, as the sessions are designed to be collaborative. Students will

review reading materials in advance and be expected to come prepared to build pro formas in real time.

Hours & Format

Fall and/or spring: 8 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

RDEV 220 Foundation Principles for Real Estate Development + Finance 4 Units

Terms offered: Fall 2020, Fall 2018

Fundamentals of real estate development finance. Financial analysis skills and analytical tools for evaluating private and public development and investment in real estate, over all product types. Site selection, market analysis, financial feasibility, design and legal considerations, construction, lease-up, operations, and property sales. Decision-making scenarios to evaluate and assess development concepts and project viability. Funding sources for market rate and affordable development. **Hours & Format**

Summer: 12 weeks - 4 hours of lecture and 1.5 hours of laboratory per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 225 Applications in Real Estate Finance 3 Units

Terms offered: Prior to 2007

This course is designed to facilitate a mastery of core finance and valuation skills required of real estate developers through a practical approach using real world examples / case studies. It is designed to develop students' ability to think critically about how real estate value is created and develop analytical tools used to derive it. The primary emphasis in the course is on the acquisition, development, financing, and repositioning of real estate projects. Active participation in class is a must. Students will review case materials in advance and students will be expect to come prepared to discuss their understanding of value.

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 235 Real Estate Capital Markets 3 Units

Terms offered: Not yet offered This course seeks to acquaint the student with the structure, instruments, and institutions of real estate capital markets. In so doing, the course considers the linkages between real estate and general capital markets. The course also reviews the major features of both residential and non-residential primary and secondary mortgage markets, including the structure and performance of residential and commercial mortgage-backed securities, and exposes students to public sources of real estate equity finance, including real estate investment trusts (REITs). Finally, the course examines recent developments in global real estate capital markets. **Hours & Format**

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 240 Professional Practice of Real Estate Development 3 Units

Terms offered: Spring 2020

Fundamental practices in private, public, and non-profit real estate development. Perspectives of project managers, investment specialists, bankers and lawyers, architects, planners, contractors and property managers representing companies from around the Bay Area following the life cycle/sequence of a real estate project. Approaches to understanding and incorporating community perspectives. Familiarity with professional work products, contracts, schedules and documents handled or produced by practitioners on a daily basis as course materials. **Hours & Format**

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Summer: 8 weeks - 6 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

RDEV 250 Land Development Law and Regulations 3 Units

Terms offered: Spring 2021

An advanced course in implementation of land use and environmental laws and regulatory controls. The theory, practice and impacts of zoning, growth management, development systems, and other techniques of land use control. Objective is to acquaint student with a range of regulatory techniques, related economic considerations, and the legal, administrative-political equity aspects of their implementation. **Hours & Format**

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 260 Sustainable Real Estate Development 3 Units

Terms offered: Prior to 2007

This course is aimed at real estate development students to gain an understanding of the need and

urgency of incorporating sustainable practices into real estate projects, and to understanding how best to

do so in an economical way. The course will be structured around seven major concepts as defined below:

1. Why Green Real Estate Development Makes Sense.

- 2. Government Regulations
- 3. Green Development Strategies
- 4. Green Design Considerations
- 5. Cost / Benefits Modeling
- 6. Certification Programs

7. Pre-Occupancy & Post Occupancy Considerations Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 270 Development + Design Studio 5 Units

Terms offered: Spring 2020

This course will involve a real world site to provide students with the experience and skills necessary to synthesize real estate development + design projects. As developers and designers, students need to understand: the development process, program, how development teams work, what makes good design and how it adds value, and how to propose a feasible, innovative project from multiple constraints. Students will learn how to gather and evaluate market, construction, and environmental data to inform design choices; evaluate the physical, market, and public policy constraints of a given site; apply best practices of redevelopment; advance innovative design solutions, and communicate their development proposal to a professional audience. **Hours & Format**

Fall and/or spring: 15 weeks - 8 hours of studio per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 277 Equitable + Resilient Development 2 Units

Terms offered: Prior to 2007

The course will include discussions of various approaches to resilience and engage

multi-disciplinary experts who bring resilience into their research or professional work at multiple scales: building, district, city, and region. Major infrastructure system investments and equitable community cobenefits are also key topics as they impact the physical and financial requirements for site design and development. We will examine new approaches to urban design, equity, insurance, and policy that can be applied to students' parallel design projects.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Summer: 12 weeks - 2.5 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

RDEV 280 Capstone Project 2 Units

Terms offered: Spring 2020

In this course you will conduct an original investigation in order to acquire new knowledge within a framework set by a client in practice. The primary goal of this research class is to deepen your personal understanding of a particular topic or issue in real estate development. A key secondary goal is to help address a practical aim or objective of your client. **Hours & Format**

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Summer: 8 weeks - 4 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 285 Capstone Preparation 1 Unit

Terms offered: Prior to 2007

This course in intended to assist students in defining their independent capstone research project, including

the core research question(s), appropriate sources, methods, and scope, with a goal of producing

a comprehensive Capstone Proposal by the end of the course (midsemester). Given the short time frame available for Capstone during the Summer Semester, this course is designed to prepare students to embark directly on the research and summary phases of their projects at the conclusion of this course. Through lectures, assigned readings, meetings with the Instructor, much self-guided research, and the completion of three benchmark assignments this Semester, students will develop their Capstone research question and argument. **Hours & Format**

Fall and/or spring: 8 weeks - 2 hours of seminar per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

RDEV 290 Special Topics in Real Estate Development + Design 1 - 5 Units

Terms offered: Spring 2021, Fall 2020

Course examines current problems and issues in the field of real estate development + design. Topics may vary from year to year and will be announced at the beginning of the semester.

Rules & Requirements

Repeat rules: Course may be repeated for credit when topic changes. Students may enroll in multiple sections of this course within the same semester.

Hours & Format

Fall and/or spring: 15 weeks - 1-5 hours of lecture per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Letter grade.

RDEV 297 Internship in Real Estate Development + Design 1 - 3 Units

Terms offered: Spring 2022, Spring 2021, Spring 2020 Internships are off-campus experiential learning activities designed to provide students with opportunities to make connections between the theory and practice of academic study and the practical application of that study in a professional work environment. Internships offer the opportunity to experience a career while gaining relevant skills and professional connections. Internships are completed under the guidance of an on-site supervisor and a faculty sponsor, who in combination with the student will create a framework for learning and reflection. For-credit internships are open only to students who have completed at least 9 course credits, and have a GPA of at least 3.0. **Objectives & Outcomes**

Course Objectives: An understanding of how real estate development and design coursework ties to professional careers of interest Develop professional connections and identify a strategy for maintaining those connections

Gain insight into a possible career path of interest while learning about the industry in which the organization resides, organizational structure, and roles and responsibilities within that structure.

Student Learning Outcomes: Ability to articulate what was learned and how it will be apply to your professional career goals Identification of additional skills that will need to be developed to ensure career readiness. This might include learning a new technology, developing a broader network, additional coursework, etc. Identification of professions that may be of interest as a result of this experience

Rules & Requirements

Prerequisites: 1) Students must have successfully completed RDEV core classes in the summer and be in good academic standing. 2) Students must have an approved internship application by the Executive Director of the MRED+D program

Repeat rules: Course may be repeated for credit with advisor consent.

Hours & Format

Fall and/or spring: 15 weeks - 2-8 hours of internship per week

Summer: 12 weeks - 3-9 hours of internship per week

Additional Details

Subject/Course Level: Real Estate Development + Design/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.