Superintendent File: IGA-E

DISTRICT COURSE PROPOSAL FORM

The course proposal must be submitted to the Curriculum, Instruction and Professional Growth (CIPG) department. If the course proposal is received after the due date (second week in September), the course will be considered for the next course proposal cycle.

NOTE: Confirm the proposal for a new course with your Building Administrator prior to completing this form.

- ✓ Check with your school Registrar to review the DCSD course master and determine that this proposed course does not already exist. If it does not, proceed as follows:

Course Proposals are due by the third week in September in order for it to become active for the following school year.

- Timeline: Link to timeline.
- Open this document and save a copy titled "Course Proposal [Course title]." Share this with a designee in the Curriculum, Instruction, and Professional Growth (CIPG) Department.
- Complete all sections. If you have any questions, contact the CIPG Department at 303-387-9504.
- Upon completion, a digital copy of the proposal needs to be shared with CIPG and will be sent out to get the required signatures.
- This form will be processed by the CIPG Department and then forwarded to the Board of Education for approval.
- If approved, the course will be available to all applicable schools within the district.
- Course proposal forms are presented to the Board of Education in October.

Date:	To check a box in a google doc, right-click and choose the ✔
Group(s) initiating this proposal *(check all that apply)***:**	✓ Teachers ❑ Administrators ❑ Students ❑ Citizens
Name of school and individual completing this form:	Douglas County High School Dr. Christine Veto
Name of the building administrator assigned to support the completion of this course proposal:	Katy Kollasch
Contact Information (phone number, e-mail address):	(303) 387-1006 kakollasch@dcsdk12.org
Course Title:	Geometry in Construction
Department in which this course is assigned. (*the department designation is used for state coding and influences the highly qualified teacher status)*	Math
Credit *(checkbox)***:**	❑ 0.5 (one semester) ❑ 0.25 (quarter) ✓ 1.0 (two semesters) ❑ N/A
The proposed course is *(checkbox)***:**	✓ Core (Science, English, Math, Social Studies) ❑ Elective ❑ Other _____
Is this a CTE or dual credit course? *If yes, CTE Coordinator approval required. Please contact the CTE coordinator for guidance and requirements.*	✓ Yes - *Contact the CE/CTE Coordinator before proceeding further.* ☐ No
Grade level(s): HS, MS, ELEM	High School, Grades 11& 12

DESCRIPTION:

Provide a brief course description as it would appear in the District's course master. A course description should provide the reader (parents, students, public, administrators, etc.) with an overview of the main concepts/topics taught and what skills students will be acquiring in the course. *Refer to the School Courses for the Exchange of Data* ***(SCED) document*** *for commonly used course descriptions.*

- ➢ SCED Code Number (This number is used for state reporting): 02152
- ➢ Course Description:

Geometry in Construction will develop the practical knowledge and application of geometry in the building trades. This will be done by applying previously explored content from geometry through various building projects during the year. This course is part of a pathway and implementation needs to be approached through integration of the full pathway.

Students taking this course will:

- Use coordinate geometry in the study of area, perimeter, volume, congruence, and functions.
- Be exposed to practical skills in building and carpentry trades by constructing various projects.
- Learn safety, problem solving, machine and tool use, and drawing interpretation.

Prerequisite: Passing grades in Algebra I and Geometry; teacher approval

ALIGNMENT WITH DOUGLAS COUNTY'S CURRICULUM

Please write a detailed description of how the course **aligns and assesses the DCSD Curriculum (Knowledge and Skills from the Colorado Academic Standards):**

- Is this course AP or IB? NO If yes, provide the course overview from AP or IB.
- Detailed description:

Geometry in Construction aligns and assesses the DCSD Curriculum (Knowledge and Skills from the Colorado Academic Standards) through the instructional sequence described below. The Colorado Academic Standards aligned and assessed are listed in bold following the description:

Unit 1: Area & Similar Figures

Students build on experience with rigid motions from earlier grades: basis of rigid motions in geometric concepts, e.g., translations move points a specified distance along a line parallel to a specified line; rotations move objects along a circular arc with a specified center through a specified angle. Applications include: interpreting blueprints, building a paper shed to scale, indirect measurement, designing floor plans and logos.

Colorado Academic Standards: Essential Skills Assessed

- **HS.G-CO.A.a:** Know precise definitions of angle, circle, Unit 1 perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
- **HS.G-CO.A.b:** Represent transformations in the plane using, Unit 1 e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).
- **HS.G-CO.A.c:** Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.
- **HS.G-CO.A.d:** Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
- **HS.G-CO.A.e:** Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.
- **HS.G-SRT.A.a:** Verify experimentally the properties of dilations given by a center and a scale factor.
  a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.
  b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.
- **HS.G-SRT.A.b:** Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
- **HS.G-SRT.A.c:** Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.
- **HS.G-SRT.B.b:** Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.
- **HS.G-GMD.B.a**: Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.
- **HS.G-C.B.a:** Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.

Unit 2: Pythagorean & Volume

Students practice with the distance formula and its connection with the Pythagorean theorem and examine the means in which informal arguments for area and volume formulas can make use of the way in which area and volume scale under similarity transformations: when one figure in the plane results from another by applying a similarity transformation with scale factor *k*, its area is *k^2* times the area of the first. Similarly, volumes of solid figures scale by *k^3* under a similarity transformation with scale factor *k*. Applications include slope in plumbing, the relation between two- dimensional and three- dimensional objects, and step-building.

Colorado Academic Standards: Essential Skills Assessed

- **HS.G-GPE.B.b:** Prove the slope criteria for parallel and perpendicular lines and uses them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
- **HS.G-GPE.B.d:** Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.
- **HS.G-SRT.B.b:** Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.
- **HS.G-SRT.C.a:** Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
- **HS.G-SRT.C.c:** Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
- **HS.G-MG.A.a:** Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).
- **HS.G-GMD.A.a:** Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments.
- **HS.G-GMD.A.c:** Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
- **HS.G-GMD.B.a:** Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

Unit 3: Trigonometry

Students explore sine, cosine, tangent, inverse sine, inverse cosine, inverse tangent, areas of triangles, and inequalities for non-right triangles. Students apply their learning to designing a kitchen.

Colorado Academic Standards: Essential Skills Assessed

- **HS.G-SRT.C.a**: Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
- **HS.G-SRT.C.b:** Explain and use the relationship between the sine and cosine of complimentary angles.
- **HS.G-SRT.C.c:** Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
- **HS.G-SRT.D.a**: Derive the formula A = 1/2 ab sin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.
- **HS.G-SRT.D.b:** Prove the Laws of Sines and Cosines and use them to solve problems.
- **HS.G-SRT.D.c:** Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).

Unit 4: Quadrilaterals and Constructions

Students examine multiple ways of writing proofs, such as in narrative paragraphs, using flow diagrams, in two-column format, and using diagrams without words. Students focus on the validity of the underlying reasoning while exploring a variety of formats for expressing that reasoning. Students will build on prior experience with simple construction to formalize, design, and explain how geometric constructions result in the desired objects.

Colorado Academic Standards: Essential Skills Assessed

- **HS.G-CO.C.a:** Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.
- **HS.G-CO.C.b**: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.
- **HS.G-CO.D.a:** Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.
- **HS.G-CO.D.b:** Construct an equilateral triangle, a square, and Unit 4 a regular hexagon inscribed in a circle.
- **HS.G-GPE.B.a:** Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point (0, 2).

Unit 5: Linear Equations and Probability

Students will build on work with two-way tables from Algebra I to develop understanding of conditional probability and independence, use the rules of probability to compute probabilities of compound events in a uniform probability model, and evaluate the risks associated with conclusions drawn from sample data.

Colorado Academic Standards: Essential Skills Assessed

- **HS.G-MG.A.b:** Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).
- **HS.S-CP.A.a:** Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").
- **HS.S-CP.A.b:** Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.

- **HS.S-CP.A.c:** Understand the conditional probability of A given B as P(A and B)/P(B), and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.
- **HS.S-CP.A.d:** Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.
- **HS.S-CP.A.e:** Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.
- **HS.S-CP.B.a:** Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.
- **HS.S-CP.B.b:** Apply the Addition Rule, P(A or B) = P(A) + P(B) – P(A and B), and interpret the answer in terms of the model.
- **HS.S-CP.B.c:** Apply the general Multiplication Rule in a uniform probability model, P(A and B) = P(A)P(B|A) = P(B)P(A|B), and interpret the answer in terms of the model.
- **HS.S-CP.B.d:** Use permutations and combinations to compute probabilities of compound events and solve problems.
- **HS.G-GPE.B.b:** Prove the slope criteria for parallel and perpendicular lines and uses them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
- **HS.G-GPE.B.c:** Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
- **HS.S-MD.B.b:** Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).
- **HS.S-MD.B.c**: Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

Unit 6: Systems of Linear Equations and Proofs

Students will examine multiple ways of writing proofs, such as in narrative paragraphs, using flow diagrams, in two-column format, and using diagrams without words. Students will focus on the validity of the underlying reasoning while exploring a variety of formats for expressing that reasoning.

Colorado Academic Standards: Essential Skills Assessed

- **HS.G-CO.C.a:** Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.

- **HS.G-CO.C.b**: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.

Unit 7: Congruent Triangles and Circles

Students will focus on situations that require relating two- and three-dimensional objects, determining and using volume, and the trigonometry of general triangles in addition to exploring how rigid motions and their assumed properties can be used to establish the usual triangle congruence criteria, which can then be used to prove other theorems.

Colorado Academic Standards: Essential Skills Assessed

- **HS.G-CO.A.a:** Know precise definitions of angle, circle, Unit 1 perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
- **HS.G-CO.B.b**: Use the definition of congruence in terms of rigid Unit 8 motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.
- **HS.G-CO.B.c:** Explain how the criteria for triangle congruence Unit 8 (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.
- **HS.G-CO.C.a:** Prove theorems about lines and angles. Unit 6 and Unit 7 Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.
- **HS.G-CO.C.b:** Prove theorems about triangles. Theorems Unit 6 and Unit 7 include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.
- **HS.G-CO.C.c:** Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.
- **HS.G-SRT.B.a:** Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.
- **HS.G-SRT.B.b:** Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.
- **HS.G-C.A.a:** Prove that all circles are similar.
- **HS.G-C.A.b:** Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.
- **HS.G-C.A.c:** Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle..

- **HS.G-C.A.d:** Construct a tangent line from a point outside a given circle to the circle.
- **HS.G-GPE.A.a:** Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
- **HS.G-GPE.B.a:** Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined

Unit 8: Quadratics

Students will apply knowledge of parabolas and the quadratic formula to design a water fountain or a building archway.

Colorado Academic Standards: Essential Skills Assessed

- **HS.G-GPE.A.b:** Derive the equation of a parabola given a focus Unit 8 and directrix.

IMPLEMENTATION NEEDS:

How does this course fit into the overall educational program?

- Provide the following information:
    - Unit by unit or week by week outline of the course:

Unit 1: Area & Similar Figures

1. Area of rectangles, parallelograms, triangles, trapezoids, circles, and polygons
2. Perimeter/circumference/arc lengths
3. Area of sectors
4. Polygon classifications: quadrilaterals, pentagons, hexagons, octagons, decagons
5. Surface Area of prisms, pyramids, cylinders, cones, and spheres
6. Similar figures: Definition, finding missing lengths
7. Similar triangles: AA, finding missing lengths
8. Similarity ratio/dilation/scale factor: Reading and interpreting blueprints
9. Similarity in building scale models
10. Area ratios of similar figures

Unit 2: Pythagorean & Volume

1. Pythagorean Theorem and its inverse
2. Calculating slope/pitch
3. Interpreting graphs and slopes
4. Slopes of parallel and perpendicular lines
5. Use of slopes in construction
6. Finding distance
7. Special right triangles: 30-60-90 and 45-45-90
8. Triangle sum
9. Triangle classifications by sides and by angles
10. Isosceles and equilateral triangle properties

11. Supplementary, complementary, and vertical angles
12. Volume of prisms, pyramids, cylinders, cones, and spheres

Unit 3: Trigonometry

1. Right triangle trigonometry
2. Inverse trigonometric relationships
3. Law of sines, cosines, and sine formula for area
4. Designing a kitchen
5. Triangle inequalities

Unit 4: Quadrilaterals and Constructions

1. Relationships between angles in parallel lines and transversals
2. Properties of quadrilaterals
3. Midsegment properties of triangles and trapezoids
4. Interior and exterior angle sum of polygons
5. Geometric Constructions

Unit 5: Linear Equations and Probability

1. Data collection and the line of best fit.
2. Graphing linear equations (continued from unit 2)
3. Writing linear equations
4. Midpoint calculation
5. Equations of parallel and perpendicular lines
6. Graphing linear inequalities
7. Writing linear inequalities
8. Mean, Median, and Mode
9. Multiplication counting principle
10. Conditional probability
11. Permutations and Combinations

Unit 6: Systems of Linear Equations and Proofs

1. Solving systems of linear equations by graphing
2. Solving systems of linear equations by substitution
3. Solving systems of linear equations by add/multiplication
4. Writing systems of equations
5. Graphing systems of linear inequalities
6. Construction's Critical Path & Flowcharting: An Intro. To Logical Thinking
7. Flowchart proofs

Unit 7: Congruent Triangles and Circles

1. Congruent triangles: Definition
2. Surveying & Triangle congruencies: SSS, SAS, ASA, AAS, HL

3. Arc Lengths
4. Sector Areas
5. Central & inscribed angles properties
6. Chords, secants, & properties
7. Tangents & properties
8. Equation of a circle

Unit 8: Quadratics

- Graphing parabolas: max/min; x intercepts
- Zero product property
- Greatest common factor
- Trinomial factoring
- Quadratic formula
- Writing quadratic equations in the form of y =a(x-b)(x-c)
- Solving quadratic equations
- Focus and directrix of a parabola
- Designing archways

Flow chart of where this course fits in a subject area pathway (what courses precede and follow the proposed course, if any).

- **Pathway A:** Algebra I → Geometry → Geometry in Construction → Algebra II

- **Pathway B:** Algebra I → Geometry → Geometry in Construction → Data & Decisions; Discrete Math; Math of Money

- **CTE Construction Pathway:** Woodworking I → Woodworking II → Geometry in Construction → Woodworking III → Personal Project (Student Internship)

Describe the process and timeline for the development of necessary teacher resources, including instructional ideas, trainings, methods, materials, and technology.

- Training at Green Mountain High School - Summer 2019
    - Received materials for teaching
- Review materials received in training and modify for our use - Summer 2019 - ongoing
- Work with local builders for donations of equipment and/or material - Fall, 2019
- Create a workspace for construction projects - Spring, 2020
- Work with woods teacher to train students on tools - Fall, 2019
- Explore possible co-teaching with woods teacher in future years - ongoing

Describe any textbooks, required curriculum material and/or supplemental materials necessary to support the proposed course. (See the CIPG Textbook Novel Adoption Website).

- Teacher-produced materials provided with training.

What physical arrangement (buildings, equipment, technology, room, land) is necessary in order to support the proposed learning activities?

- Level outside area for building larger projects
- Area in wood shop for smaller projects
- Storage space for tools and materials

Is there an impact regarding the building schedule?

- ✓ Yes, explain the impact - singleton/doubleton class; teacher approval for student enrollment
- ❑ No

BUDGET: What is the estimated three-year budget (in detail) for the course? Include items such as books, FTE, training, and other resources. It is critical that the budget detail provided is current and comprehensive.

- Budget $15,000 ($5,000 per year)
    - Leveling out outside area (20' x 30') for large projects (one-time cost)
    - Fence around construction area - portable/temporary fencing (one-time cost)
    - Storage space/shed for tools and projects (one-time cost)
    - Equipment (one-time cost):
        - Dewalt Tools (20V for Cordless):
            - 5 Cordless 7.25" circular saws with battery and charger: $279.00 each
            - 5 Cordless drills with battery and charger: $159.00 each
            - 5 Corded Jigsaws: $150.00 each
            - 1 Corded 12" double bevel compound miter saw: $380.00
    - Consumables (varying; ongoing cost)
        - 21 feet of 4 x 4
        - 80 feet of 2 x 4
        - 32 feet of 2 x 6
        - 5 sheets of ¾" 4' x 8' cabinet grade plywood.
        - Lots of No. 9 3.5", 2.5", and 1.5" outdoor screws

NOTE: As this course will be part of the CTE Construction pathway, this course/program will have access to State and Federal funding.

FEE: If a fee is associated with this course please include the suggested fee and the rationale for the fee. Please work with the appropriate Executive Director of Schools and CIPG Department designee to ensure the suggested fee is approved in accordance with Board Policy JQ: Student Fees. Please complete the fee proposal form.

- No Fee

SYSTEMS CHECK and NEEDS ASSESSMENT:

At the building level, content-specific team members review needs for this proposed course.

Participants:

Participant Name	Comment(s), Concern(s), or Question(s)
Jenny Berggren	This course is filling a need that we have at our school for an alternative option for a 3rd year of math besides Algebra 2. This course provides students with the opportunity to actually apply the math skills that they have learned throughout this year and previous math courses. Question: Would the Geometry in Construction course be an NCAA approved math course?
Andrea Harrison	We have gotten feedback from our colleagues in post-secondary education that students leave high school without the skill of applying what they've learned. This course is great for applying math skills. One concern from the math department is that the students would have 2 Geometry classes on their transcript. Maybe this is not an issue.
Anthony Staack	Working with students in a hands-on / career based area there is a definite need for an alternative styled math course. Some of our students get it in their heads that they're never going to use that math ever again, check out and really struggle. I feel that if students are given the opportunity to take a hands-on class that teaches them essential career based and everyday lifelong math skills it will benefit our students and success rates will improve.
Nate Kopenhafer	This is good for preparing students that are looking for the option of a vocational school that is teaching the skills needed in preparation for their careers. The math concepts will serve as lifelong skills that can be used both at work and at home.

Amy Boyce	With the promotion of work based learning skills, based on the description of Geometry in Construction, it will align with supporting students needs who are planning to go directly to work in the trades, complete an OJT or Apprenticeship based training with programs like the Construction Industry Training Council. Additionally, if a student is looking toward an AAS degree, they still have the college based option of pursuing Algebra II following the Geometry in Construction course.

✓ Forward with approval

❑ Forward with following comment(s), concern(s), or question(s):
(Indicate consensus or % approval.)

❑ Do not forward because:

A group of 5 content-specific peers have reviewed the course. Please note no more than one representative can be included from the same building.

Participants:

Participant Name	School/Content	Comment(s), Concern(s), or Question(s)
Joe Schubarth	DCHS/Admin	This class reaches students who may be looking at vocational trades after high school and relates math to real-world application to the math they have learned.
Steve Sayers	Poudre High School/Math	We are teaching this course in our school right now. We searched for a course of study to service the student whose future is in the trades
Scott Burke	Green Mountain HS/ CTE	We have been teaching this course with great success at Green Mountain for the last three years. Students taking the course have been more successful in standardized tests and more importantly have greater success in more advanced math.
Tom Moore	Loveland High School/ Math Teacher (Ret)	I taught this class at Loveland High School for many years with great success. Math scores on SATs have increased with our students as compared to students who did not take

		Construction in Geometry. This has been a great success for us.
David Sedevy	Heritage High School/ CTE Teacher	We are beginning to teach the course at Heritage right now. We are expecting success with our kids.

✓ Forward with approval

❏ Forwards with following comment(s), concern(s), or question(s):
(Indicate consensus or % approval.)

❏ Do not forward because:

Level administrators (principals) have met and provided a district-wide review of the course.
Anthony Kappas- Douglas County
Greg Gotchey- Chaparral
Jason Jacobs- Legend
Tim Ottmann- Ponderosa
Rex Corr- Castle View
Andy Abner- Rock Canyon
Mike Weaver- Mountain Vista
Chris Page- Highlands Ranch
Nikki Ballow- ThunderRidge

Participants:
✓ Forwards with approval
❏ Forwards with following comment(s), concern(s), or question(s):
(Indicate consensus or % approval.)

❏ Do not forward because:

Course competencies aligned with CCHE Publication: College Entry Level Expectations, which can be found on the web at http://www.state.co.us/cche/pubs/readyable.pdf
✓ Yes
❏ No

SIGNATURES/APPROVALS

Does the Building Administrator approve adoption of this course?
****Your signature below indicates your approval of the adoption of this course****

Date 12/2/2019

Building Administrator Signature DocuSigned by: Tony Kappas 70A1390C63FE4A6...

Does the Director of Curriculum, Instruction and Professional Growth approve adoption of this course? ****Your signature below indicates your approval of the adoption of this course****

Date 12/2/2019

Director of Curriculum, Instruction and Professional Growth Signature DocuSigned by: Erica Mason D642110C97DC44C...

If course is CTE this signature box must be completed. Does the CTE Coordinator approve adoption of this course? ****Your signature below indicates your approval of the adoption of this course****

Date 12/2/2019

CTE Coordinator Signature DocuSigned by: Joy Griffin 10D4C751D08A44A...

Does the Executive Director of Schools approve adoption of this course?
****Your signature below indicates your approval of the adoption of this course****

Date 12/2/2019

Executive Director of Schools Signature DocuSigned by: Danelle Hiatt 598F2078E971408...

Does the Assistant Superintendent approve adoption of this course?
****Your signature below indicates your approval of the adoption of this course****

Date 12/17/2019

Assistant Superintendent Signature DocuSigned by: Ted Knight 789D932FF6D3497...

Does the Chief Academic Officer approve adoption of this course?
****Your signature below indicates your approval of the adoption of this course****

Date 12/16/2019

Chief Academic Officer Signature DocuSigned by: Marlena Gross Taylor AA861344DA974E2...

Does the Board of Education approve adoption of this course? ****Your signature below indicates your approval of the adoption of this course****
Date of BOE Meeting _____ Signature_____

Office use		Entered by:
Credit Type(s): *(Fine Art, Science, Practical Arts, etc.)*		
Department Code:		
Course Number:		
Date entered in Infinite Campus database:		
Course Mapping SCED Code:		
Course entered in NCAA database (if applicable):		
Lock Program ID VIP code:		
Lock VE CIP code:		
Add to HEAR list Yes or No		