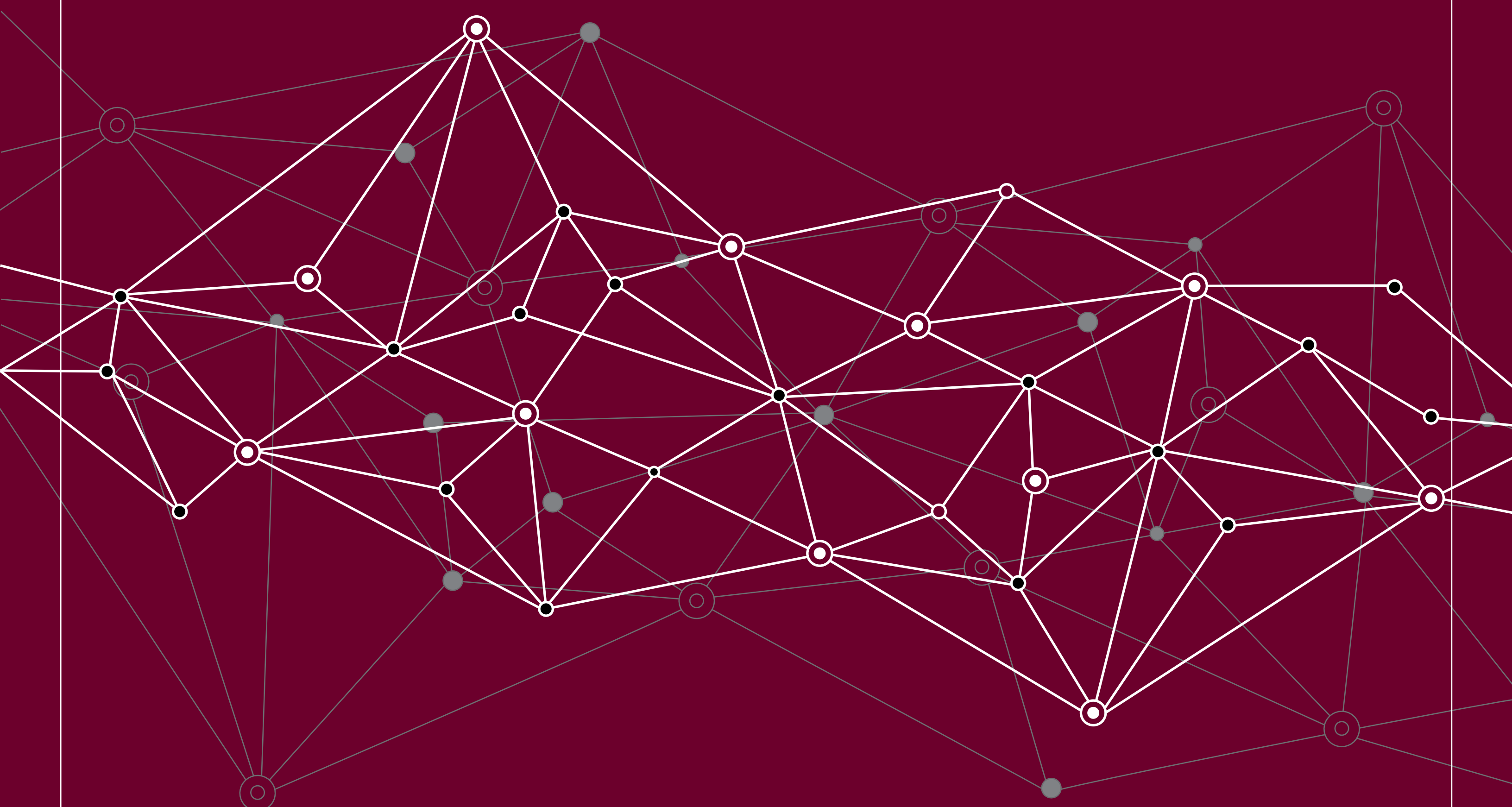
Empowering Community Colleges

A Playbook for Integrating Google's Data Analytics Certificate into Curriculum



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Introduction

Playbook Purpose

This playbook helps instructors incorporate the Google Career Certificate in Data Analytics within their courses. It draws on successful examples from community college institutions who have blended the online Certificate with higher education teaching strategies and context.

The project arose from an understanding that many community college students are interested in finding technology jobs and that they would benefit from certifying their mastery of key industry-aligned competencies. Given employer demand for data analytics talent, coupled with the success of Google's Career Certificate program, a pilot was launched in 2023 between Stanford Digital Education, Bay Area Community College Consortium, and Google to facilitate the integration of the Google Data Analytics Certificate into community college curricula. The playbook is a result of this effort. We hope it leads to more students finding opportunities in data analytics and other technical fields by leveraging the resources of their colleges and Certificates.

Playbook Methodology

This playbook was created through a collaboration between Stanford Digital Education, Google, and the Bay Area Community College Consortium. It was enriched by the insights of ten faculty members from Bay Area community colleges that aimed to incorporate the certificate into their courses.

The recommendations presented here stem from an extensive development program spearheaded by Stanford Digital Education. This program was dedicated to understanding the specific needs, teaching approaches, and student populations of these faculty members. Additionally, valuable lessons were drawn from the faculty at South Texas College, who have successfully implemented the certificate in their curriculum.

The names of all individuals and organizations that contributed to this playbook are listed in the Acknowledgements section.

San Jose City College Professor Sanjay Dorairaj integrating Google's data analytics curriculum into one of his fall 2023 courses. Photo by Nikolas Liepins (Ethography).

Playbook Structure

This playbook is organized into two sections: Teaching-Related Actions and Administrative Actions.

The **Teaching-Related Actions** section guides instructors through reviewing the Certificate and planning their curriculum. It includes practical steps such as aligning Certificate materials with existing curriculum standards, developing a curriculum map, and tailoring teaching methods to various course formats. Additionally, this section offers insights into planning grading schemes and managing course logistics.

The **Administrative Actions** section discusses navigating institutional requirements and protocols. Gaining institutional approval is a vital and time-intensive step in introducing any new course to a community college. This section of the playbook provides a succinct overview of various administrative activities, which are notably specific to individual institutions and the local educational standards and requirements.

Benefits of Leveraging the Google Data Analytics Certificate

Incorporating Google's Career Certificates into college courses offers several potential advantages, including:

- Equipping Students With In-Demand Skills: Keeping up with evolving career opportunities and requirements to prepare students for future jobs is a challenge. Instead of trying to stay abreast of these changes, educators can utilize resources informed by experts who are current with industry-relevant skills. The Certificate provides learners with practical and sought-after competencies in data analytics. Leveraging this content can translate into a curriculum that is in tune with employer needs.
- Saving Time During Course Development: Creating course materials from scratch is time-consuming. Leveraging the Certificate as a pre-existing resource can reduce the time spent on material development. This extra time can be redirected towards planning other important aspects of teaching and learning, such as interaction and feedback.
- Providing Additional Value to Students: Students can struggle to connect their academic projects with their resumes or LinkedIn profile. Offering the option to earn a Certificate recognized by a well-respected industry leader like Google can provide a clearer link between their academic effort and potential career benefits. Furthermore, enabling students to earn a Career Certificate while fulfilling college credits can elevate a course's value proposition for students during their course selection process.

Teaching-Related Actions

Review and Align Materials With Your Curriculum

Google Career Certificates are designed as self-paced, online courses. Reviewing and aligning the materials with your local educational standards, course schedule, and any existing curriculum is an important first step.

Develop a Curriculum Map

Begin by creating a curriculum map. This tool will help you familiarize yourself with the Google Data Analytics Certificate content and its potential alignment with your course. The amount of content in the Certificate may exceed what you can cover within the scope and time constraints of your course — especially if you plan to use the Certificate as a supplement to other course materials or activities. Creating a curriculum map can help you choose what Certificate content to assign as mandatory or optional.

Here's how to proceed:

1. Review the Certificate Structure: The Google Data Analytics Certificate is composed of 8 separate courses, each containing 3-6 modules. The 8 courses are:

- **a.** Foundations: Data, Data, Everywhere
- **b.** Ask Questions to Make Data-Driven Decisions
- **c.** Prepare Data for Exploration
- **d.** Process Data From Dirty to Clean
- **e.** Analyze Data to Answer Questions
- **f.** Share Data Through the Art of Visualization
- **g.** Data Analysis With R Programming
- **h.** Google Data Analytics Capstone: Complete a Case Study

2. Review the Types of Content in the Certificate: Within each module, there are sections with different types of content, which include:

a. **Videos:** The videos cover instructional content, career guidance, interview prep, and personal stories from Google data analytics employees.

b. **Readings:** Readings, resources, and quick reference guides are provided to enhance learners' comprehension of video topics and teach shortcuts for various tools.

c. **Ungraded Quizzes:** Optional quizzes for self-assessment.

d. **Graded Quizzes:** Graded quizzes are used as summative assessments, designed to measure a student's understanding of the key learning objectives in a course. While these quizzes are essential for students to pass in order to earn a Certificate, instructors have the flexibility to use them in their courses even if students are not seeking the full Certificate.

e. **Learning Logs:** Brief tasks for learners to document and reflect on their progress.

f. **Discussion Forums:** Intended to enhance comprehension and encourage peer interaction through course-focused discussions. However, in a traditional college course with live classroom sessions, these online discussion forums may be less crucial due to in-class interaction and engagement.

g. **Practice Activities:** Practical tasks intended to mirror real job responsibilities.

h. **Optional Program Surveys:** Short surveys that are part of a research study to understand how effective the Certificate has been for learners.

SJCC Technology Center, San Jose City College, San Jose, California. Photo courtesy of SJCC.

3. Review (and Optionally) Summarize Certificate Content: Consider creating concise summaries or key topic lists for each content item in the Certificate. This approach is particularly worthwhile if multiple instructors may teach the course or use the Certificate content because it allows for quick familiarization with the material.

4. Distinguish Core From Supplementary Material: Evaluate each piece of content to categorize it as essential data analytics material, optional support, or additional supplementary information. This process aids in pinpointing and incorporating content that aligns with your specific educational goals. The following types of content are all present in the Google Data Analytics Certificate and can be used for categorization purposes:

a. **Core Data Analytics Content:** Directly contributes to the fundamental understanding and skills of data analytics and aligns closely with course objectives and educational outcomes.

b. **Soft Skills Content:** Covers areas like presentation design and delivery. Relevant, but may not fit within a standard data analytics college course.

c. **Job Search Tips:** Provides guidance on resume building and job interviews. Suggested for students focused on a career in data analytics, although not typically part of academic course curricula.

d. **Course Introduction Videos:** Beneficial for those who plan to use the entire contents of the Certificate.

e. **Online Learning Support:** Includes engagements like online forums, designed for enhancing online learning experiences but not essential for core concept understanding.

f. **Other/Miscellaneous Content:** Encompasses all other materials. The relevance of these items can differ depending on the specific context of your course and educational institution.

5. Distinguish Content by Software and Technologies Used: You may also find it useful to categorize Certificate content based on the specific technologies and programming languages used. This can help choose which content aligns with the software and technologies accessible to your students. The following software and technologies are used in Google's Data Analytics Certificate:

a. Spreadsheet tools (Google Sheets or Microsoft Excel)

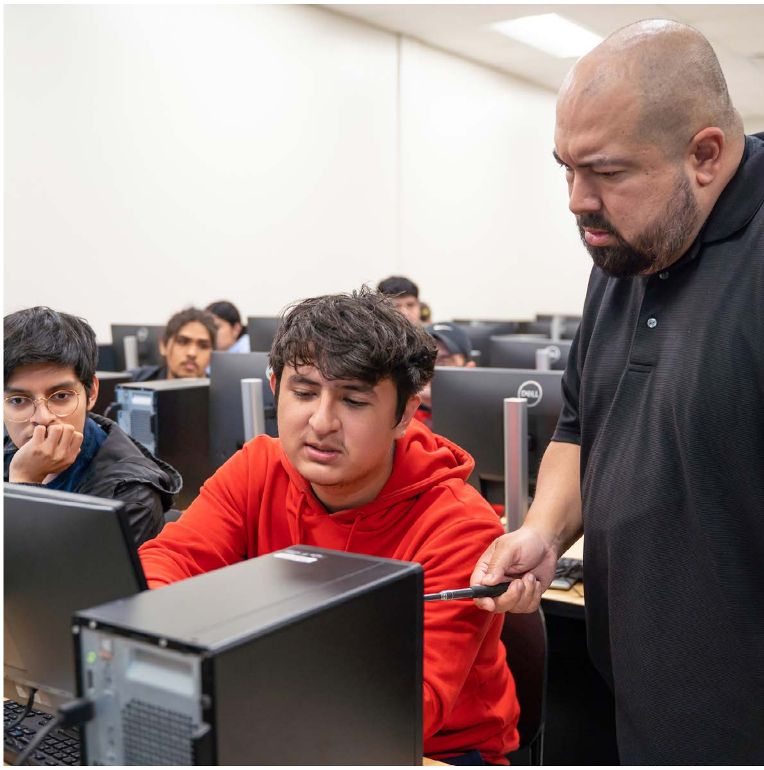
b. R Programming Language and RStudio

c. SQL

d. BigQuery

e. Tableau

Note: Access to tools and databases may vary depending on your institution.



Instructor Nicholas (Nick) Hinojosa, supporting a student at South Texas College, McAllen, Texas. Photo courtesy of STC.

Use Your Curriculum Map To Make Curriculum Decisions

The curriculum map serves as a tool for selecting content that aligns with your course objectives, recognizing that some of the Certificate content may align well while other parts may not be as relevant. You should compare the content that you organized in your curriculum map against your course objectives and any existing curriculum. Identify which elements directly support your teaching goals and which may be less pertinent.

Here are some examples of how different educational settings might use the Certificate content:

- **An Introductory Data Science Course:** An instructor teaching an introductory data science course may choose to focus primarily on the core data analytics content from the Certificate. This approach is geared towards developing students' technical skills and foundational understanding in data science. An Introductory data science course would assign "core data analytics content" identified in the curriculum map. *(Described in Step 4 in the previous section).*

Curriculum Map Snapshot

Structuring the curriculum map in a spreadsheet format is a useful approach that allows for efficient filtering and easy navigation of all content items.

Content Type	Content Name	Content Description	Core Data Analytics Content?
Video	Data in action	A case study of a small business called Anywhere Gaming Repair that faced a unique problem of expanding its customer base through advertising. The video describes how the data analysis process was used to solve the problem, highlighting the different phases involved in data analysis, such as defining the problem, preparing and cleaning data, analyzing the data, and presenting recommendations. The case also demonstrates the importance of collaborating with stakeholders and understanding the target audience when choosing the right advertising method.	Core Data Analytics content
Reading	From issue to action: The 6 data analysis phases	"There are 6 data analysis phases: ask, prepare, process, analyze, share, and act. The ask phase involves defining the problem, understanding stakeholder expectations, and collaborating with stakeholders. The prepare phase involves deciding what data to collect, how to organize it, and creating security measures. The process phase involves cleaning up data to get rid of errors, inaccuracies, and inconsistencies. The analyze phase involves thinking analytically about the data, sorting and formatting it, and creating tables with results. The share phase involves summarizing results with clear and enticing visuals and communicating findings. The act phase involves taking everything learned from the analysis and putting it to use, providing stakeholders with data-driven recommendations."	Core Data Analytics content
Video	Nikki: The data process works	Perspectives and real-world examples from a Googler.	Soft Skills
Quiz (Upgraded)	Test your knowledge on taking action with data	Ungraded practice quiz.	Core Data Analytics content

A Sample Curriculum Map can be viewed in our resources section

- **A School Club or Independent Study Focused on Career Development:** In the context of a professional skills club or a course centered on career preparation, the emphasis might be placed on job search tips and soft skills content from the Certificate. This selection caters specifically to students who are preparing to enter the job market, offering them relevant guidance and skills for their career journey. A course or club focused on career development would use "Soft skills Content" and "Job Tips" identified in the curriculum map. *(Described in Step 4 in the previous section).*
- **Supplementing With Advanced Certificate Content in Python:** Many institutions have existing courses centered around particular programming languages (e.g., Python) or specific technologies. In cases where a course or school predominantly uses Python, instructors can explore the Advanced Data Analytics Certificate, which includes Python, for supplementary content. *(Software and technology-specific content is identified in the curriculum map in Step 5 in the previous section).*

CURRICULUM DESIGN EXAMPLE

San Jose City College

San Jose City College has integrated the Google Data Analytics Certificate within a multi-course series on business and data analytics.

- **Course Structure:** The program integrates content from the Google Data Analytics Certificate into two hybrid-format courses: an 8-week course focusing on "SQL for Data Analytics" and an 8-week course titled "Business Analytics Fundamentals." These courses form part of a 4-course series designed to introduce students to the fundamentals of business and data analytics.
- **Curriculum Mapping:** The curriculum uses the first 3 courses from the Google Data Analytics Certificate to cover the objectives of the "SQL for Data Analytics" college course. The next 3 courses in the Certificate underpin the "Business Analytics Fundamentals" college course. While the seventh course of the Certificate, "Data Analysis with R Programming," is not used in the program, it is offered as an optional module for students aiming to earn the Google Career Certificate. Rather than using the capstone project from the eighth Certificate course, unique final projects are featured for each college course. (Example of the capstone project for the SQL for Data Analytics course).
- **Student Engagement:** In the course's first offering, high student interest was evident, with over 50 students initially signing up and showing active engagement with the Certificate.

Plan Your Grading Scheme

When incorporating the Google Data Analytics Certificate into your course, you have the autonomy to design your grading scheme. You might grade based on the same summative multiple-choice assessments that the Certificate uses for learners to demonstrate their understanding, or you might incorporate other content into your grading scheme.

Bear in mind that online courses like the Google Data Analytics Certificate are designed for broad, automated delivery and assessment. The Certificate uses graded multiple-choice quizzes as summative assessments for learners to demonstrate their understanding of each of the main learning objectives in a course. All graded quizzes are required in order to complete each course, and learners must score 80% or higher to pass each quiz. (See more in the Google Data Analytics Certificate Get Started Guide). Although this method is efficient and scalable, it might not capture the full scope of student understanding (i.e. see diverse assessment to the right). Furthermore, instructors may encounter constraints in accessing detailed student performance data on Coursera (for example, instructors can access student progress data down to the assessment, but not item level) or through the use of Coursera's Learning Tools Interoperability (LTI) integration, which could affect their ability to closely monitor each learner's progress.

In a smaller, and more interactive college course environment, you have the opportunity to include other assessment methods like hands-on activities, projects, presentations, and written assignments. These additional assessments can provide a more comprehensive view of student learning, allowing for the evaluation of critical thinking, problem-solving, and students' ability to apply knowledge in varied contexts.

Consider How Your Grading Strategy Can Enhance the External Material

Here are some key considerations for determining your grading criteria when incorporating external content:

- **Align With Your Course's Learning Objectives:** Ensure that your grading components align with the learning objectives of your course. The assessments included in the Data Analytics Certificate are designed to evaluate its learning objectives. If you're using only a portion of the Certificate content or supplementing it with additional material in your course, then relying exclusively on the Certificate's assessments may not effectively measure the specific learning outcomes you've tailored for your course structure. You may want to develop your own assessments that align with the unique content and objectives of your customized course.
- **Incorporate Diverse Assessment Methods:** Use a balanced mix of traditional assessments, like the quizzes and exams included in the Data Analytics Certificate combined with practical assignments such as discussions, reflections, activities, and projects. While the automated grades and feedback from the Certificate's assessments are useful tools, incorporating other elements can offer a more comprehensive evaluation of student learning, which is particularly important in a college course environment.
- **Prioritize Academic Integrity:** The Data Analytics Certificate gives students feedback on multiple-choice assessments, aiding in gauging their understanding. However, to maintain academic integrity, consider diversifying the graded components in your course. This approach can help prevent over-reliance on potentially accessible online solutions.

Consider the Supplementary Material in the Google Educator Guides for Graded Activities and Assignments

Google provides instructors with a Google Educator Guide for each of the 8 courses in the Data Analytics Certificate. These guides contain additional discussion questions and suggested ways for instructors to adapt or build on the Certificate activities. You can incorporate these into your course as graded work. (Find them under the headings *"[Optional] Discussion questions"* and *"[Optional] Adapting course activities"* in each Google Educator Guide).

Make Any Remaining Certificate Content Optional or Extra Credit

If you integrate only select portions of the Google Data Analytics Certificate into your course, consider making the remaining Certificate content optional or extra credit for your students. The prospect of earning a Google Career Certificate in addition to college credit often serves as a strong incentive for students.

In adopting this approach, it's beneficial to offer students extended access to the full Certificate content on Coursera for some period beyond your course's timeframe. This helps ensure that students have sufficient time to complete the additional content if they wish to earn the full certification.

GRADING SCHEME EXAMPLE

SOUTH TEXAS COLLEGE

South Texas College

South Texas College has effectively integrated Google's Career Certificate in Data Analytics into their Database Management course.

- **Course Structure:** The 16-week course is conducted entirely online and is divided into two main components: database management and the Google Data Analytics Certificate. Each student is required to complete one of the 8 courses in the Certificate every 2 weeks, alongside regular coursework. The course also includes an end-of-semester project in which students choose their database topics from a provided list and work on it throughout the semester.
- **Grading:** The course's grading policy weights database management coursework and the Google Data Analytics Certificate content. A significant portion of the grade is allocated to **completing the entire Certificate**. The grading scheme is:

  DATABASE MANAGEMENT COURSEWORK (40%): Homework assignments and labs (10%), chapter quizzes (10%), and semester project (20%).

  GOOGLE DATA ANALYTICS CERTIFICATE (60%): For each Google course completed, students get 3.75% of the grade. Then, completing all 8 courses awards them the remaining 30%.
- **Student Outcomes and Feedback:** The approach has been well-received, with students valuing the practical skills and the ability to earn a Career Certificate. The college has observed high completion rates and positive student feedback.

Plan Your Teaching Methods

The format of your course, whether it be fully online or blended, influences how you can incorporate the Google Data Analytics Certificate content. This content, which includes videos, readings, hands-on activities, learning logs, reflections, and discussions, can be adapted to various teaching environments.

Teach With the Certificate in a Fully Online Course

Adapting the Google Data Analytics Certificate for a fully online college course might be more straightforward compared to other course structures. This is because the Certificate was originally designed for a fully online, self-directed learning experience. Most of its content can be used as is, while you can integrate additional elements into multiple course's Learning Management System (LMS) to create further opportunities for feedback and engagement.

For instructors of fully online courses, teaching with the Certificate content might include:

- **Assigning Asynchronous Videos and Readings.** Use the video and reading content as the primary means of delivering core data analytics concepts.
- **Bringing Discussions and Reflections Into Your Course LMS.** Use these content types as asynchronous discussions within your course's LMS. This approach fosters community building and facilitates peer learning among students in a virtual course.
- **Incorporating Learning Logs and Hands-On Activities as Additional Assignments.** Implement these components as extra assignments. This not only allows for a more comprehensive evaluation of student learning, but also provides students with additional feedback opportunities.

Professor Sanjay Dorairaj leading discussion at San Jose City College, San Jose, California. Photo by Nikolas Liepins (Ethography).

Teach With the Certificate in a Blended Course

Blended courses present unique opportunities to merge online learning with in-person interaction. You can assign the Certificate's videos and readings as preparatory material, followed by in-class sessions that focus on hands-on activities and discussion prompts. This approach deepens students' understanding through active engagement with the content and also allows for real-time, guided feedback during classroom interactions.

For instructors of blended courses, teaching with the Certificate content might include:

- **Leveraging Asynchronous Videos and Readings as Pre-Class Work.** Assign the video and reading materials as pre-class homework. Completing these and taking practice quizzes in advance prepares them for the more interactive and application-focused in-class sessions.
- **Using Hands-On Activities and Learning Labs in Class.** Use in-class sessions to complete the hands-on activities and learning labs from the Certificate. This approach enables students to apply learned concepts in a practical setting where they can benefit from both peer interaction and instructor feedback.

BLENDED TEACHING

Stanford University

Blended Teaching at Stanford University

Blended teaching is a combination of techniques and formats for different situations. The central question of blended teaching is: "What is the best strategy for your unique teaching situation?"

- **Teaching Method:** At Stanford, blended teaching describes in-person, classroom-based, synchronous instruction that incorporates elements of online learning, and technology-enhanced pedagogies.
- **Optimizing Time and Attention:** Given that both shared time and learners' focused attention are scarce resources, it's crucial to optimize this limited availability by aligning learning activities with the most suitable timing approach. To find the optimal mix for each course, educators are encouraged to experiment with different teaching formats, considering factors like teaching style, student needs, and course content.
- **Asynchronous vs. Synchronous Content:** The distinction between asynchronous and synchronous content is central to Stanford's blended teaching approach, balancing immediate interaction with flexible engagement.

  Synchronous activities like live discussions and polling capitalize on the immediacy of classroom interaction, fostering a sense of community and engagement.

  Asynchronous activities like pre-recorded instructional videos and online activities offer students the flexibility to engage with course material at their own pace, deepening their understanding and allowing for thoughtful reflection.
- **Learn More:** Here are some Stanford Teaching Commons resources on flipped, blended, and online teaching that may assist you in planning your course:

  What is Blended Teaching?

  Flipped Classroom Pedagogy

  Balancing Synchronous and Asynchronous Activities

COURSE LOGISTICS EXAMPLE

LAS POSITAS
COLLEGE

Las Positas College

Las Positas College has explored ways to streamline the user experience when using external learning content hosted outside the course's LMS.

- **Course Structure:** A 17-week fully-online course on Business Data Analytics dedicates 2 weeks to each of the 8 courses included in the Google Data Analytics Certificate.
- **Course Logistics:** Offered twice to date, the course initially required students to complete assignments on Coursera and submit evidence via screenshots in Canvas, the course's LMS. This method required additional instructions on capturing and organizing screenshots for submission. In its second iteration, the instructor enhanced the user experience by re-building the Certificate quizzes and assignments directly into Canvas, mirroring the content from Coursera.
- **Benefits and Drawbacks:** This revised approach notably enhanced the student experience and provided the instructor with better insights into student comprehension. Faculty are able to see, on a more granular scale, where students are succeeding and struggling, allowing them to provide individualized support. However, certain limitations persist. Students need to submit their work on both Coursera and Canvas to earn the Google Career Certificate. Additionally, there's a risk of the Canvas content becoming outdated with any updates to the Certificate's material. This approach also requires significant time up-front from the instructor, devoted to re-building content in the home LMS, developing student guidance and other resources geared toward ensuring a seamless student experience.

Plan for Logistics

Planning the logistics of a course is crucial for ensuring smooth operations, allowing you to dedicate most of your energy to teaching and assessment, while enabling your students to focus primarily on learning.

An important logistical consideration when preparing to use the Certificate in your course is how students will access and navigate the technologies and tools used in the course (both the data analysis tools and the online platform Coursera).

Additionally, you'll need to establish a streamlined process for students to submit assignments and receive grades. When students engage with external platforms like Coursera, separate from your school's LMS, it's important to create a method for transferring their work back to the LMS for evaluation and feedback. Although a LTI integration for Coursera exists, its current functionality provides only a partial view of student activity and work on the platform. For example, the integration only passes grades back to the LMS if the student scores an 80% or more on the assignment, making it difficult for instructors to identify where students might be struggling. This limitation may restrict instructors' insights into student understanding and performance.

Currently, instructors are devising creative solutions, such as having students submit screenshots of their Coursera work to the course LMS or even building out the Certificate assignments and assessments within their own course LMS. Though these approaches may not provide the most seamless user experience, they do enable instructors to access detailed assessment data and provide tailored feedback to students.

Administrative Actions

Gaining Institutional Approval

Colleges and universities need to be accredited by recognized organizations to grant degrees, and these organizations often require that courses meet certain standards. Online courses from Coursera are not typically accredited by these organizations. Community college instructors and institutions typically need to navigate lengthy and competitive institutional approval processes in order to gain approval for using this material in courses.

Understand Institutional Requirements and Approval Processes

Familiarize yourself with your institution's specific protocols for course approval, which often includes multiple layers of review and approval. This may involve discussions with department heads or administrators.

Prepare a Detailed Proposal

Draft a persuasive course proposal that clearly outlines the course objectives and provides a strong rationale for its inclusion in the curriculum. Highlight how the course will enrich the department's programs, both in terms of content and the skills students will acquire. Consider leveraging data from institutional research offices, student surveys, and external advisory boards to demonstrate the educational needs and interests of students and the community. Google also offers data and student testimonials on the positive impact the Certificate program has had on participants' job prospects.

Your proposal should detail the course specifics, including its title, a comprehensive description, clearly defined course objectives, anticipated learning outcomes, any prerequisites, the number of credit hours, and the resources required for effective delivery.

In cases where student recruitment is a consideration, identify the potential audiences for your course. These might include students currently enrolled at the community college, high school students, local employers, and members of the broader community. Work collaboratively with departmental or school staff to devise a strategic outreach plan for these groups, utilizing a variety of engagement channels and methods.

Given that specific proposal requirements can vary by institution and its governing bodies, it's crucial to consult with the college's curriculum committee or academic council. This ensures your proposal complies with all necessary guidelines and includes all required elements.

Build Internal Support

It may be helpful to network with colleagues and seek endorsements from influential faculty members who understand the value of the proposed course. It's also a good idea to anticipate concerns that may arise and be prepared to answer questions about the course's impact on existing programs, resources needed, and how it fits within the broader curriculum.

Consider Starting with a Pilot Project

Each institution may have different approaches and requirements toward curriculum approval. As such, faculty may consider implementing small-scale initiatives, such as pilot projects, clubs, or independent studies to fine tune the course design and delivery. These lighter paths to delivery may provide proof of concept for curriculum approval boards, and be a lighter lift for implementation for faculty and department chairs.

Expect Ongoing Evaluation and Adaptation

Be prepared for ongoing evaluation and revision of the curriculum, a responsibility typically held by faculty. This includes adapting the course content to stay current with professional and academic developments.

A sample course proposal can be found in the resource section.

Students at Las Positas College, Livermore, California. Photo courtesy of LPC.

Conclusion

This playbook offers a comprehensive guide for instructors aiming to integrate Google's Career Certificate in Data Analytics into their courses. By leveraging successful examples from community colleges, the playbook underscores a commitment to equipping learners with industry-aligned competencies, and in turn, empowering diverse demographics for entry-level Data Analytics roles.

Although this resource focuses on the integration of Google's Data Analytics Certificate, the strategies presented here can be generalized to apply to any of the Google Career Certificates, offering an ongoing opportunity to offer on-demand microcredentials to complement community college programs.

For More Information

If you are interested in learning more about these strategies, and how to integrate Google Career Certificates into your community college course, please submit your contact information to our interest form, and someone from our team will reach out to you to better understand your needs and goals.

Thoughts from 3 Community College Faculty

Sanjay Dorairaj

Lecturer, Department of Computer Information Systems, San Jose City College, San Jose, California

"My students were motivated by the chance to earn a Google Data Analytics Certificate while taking my courses. Many of them work full-time and come to school in their off-hours. They dream of getting a better job and improving life for their families. This credential was a big boost to their efforts to find more lucrative work in Silicon Valley. They felt more confident and prepared to pursue careers in tech. The material for the Certificate supported and complemented my lessons, helping students to better understand certain key concepts.

"The Data Analytics curriculum was designed for asynchronous online learning, and it's a bonus for students to be able to come into class, hear me present the lessons, ask questions and discuss the key points with their classmates. They still have access any time to the video and written lessons online, and they have freedom to go at their own pace. But the class gives them added structure and helps them to keep at it if they run into a stumbling block."

Brian Palmer

Instructor, Mathematics Department, Hartnell College, Salinas, California

"By integrating Google certificate materials into a course, we get instant name recognition, which acts as a 'co-branding' strategy to recruit students into a data science pathway. The possibility of completing a Google certificate while enrolled at the community college will hopefully raise student interests in the program and help them think of their college pathway strategically, allowing them to build a compelling resume while still in school.

"Here are some practical tips I have for developing offerings at the community college level:

1. Spend a good amount of time going through the actual Google course materials, to get a sense of the delivery and depth of the presentation. The additional course materials you integrate will need to augment and support these materials. The Google materials are insufficient by themselves to cover an entire community college course, so integrating additional materials is an imperative.

2. The career-building advice in the Google certificate is very valuable, especially for a first course in data science. This could make the course a great starting point for a data science program, where students begin to think about their future career strategically, and use this in planning their college pathway."

Kyla Oh

Instructor, Mathematics Department, Laney College, Oakland, California

"We offered the Google Advanced Data Analytics Certificate to complement our new data science program. Students completing our Foundations in Data Science course expressed interest in furthering their skills. To address their needs, we piloted an independent study class integrating the Google Certificate with a semester-long research project, serving as its capstone."

Here are some thoughts that Kyla Oh shared from a student:

"The Google Advanced Data Analytics Certificate is valuable to me because it gives me a strong foundation in the basic topics of data analysis, while also providing opportunities for practice that make me feel more confident in the skills I'm learning. I believe this Certificate will be a valuable addition to my resume, especially when applying to data analyst jobs.

"Working on the Advanced Data Analytics Certificate through Laney gives me structure and accountability: having a professor and peers to talk about my progress on the Certificate helps me stay motivated to continue. Having the school's classrooms and library spaces also helps me get in a better study mindset, compared to just studying from home."

Resources

To further assist community college instructors and institutions in incorporating Google's Career Certificate in Data Analytics into their courses, the following is a compilation of additional resources and examples.

Example syllabi from community college courses already using the Google Data Analytics Certificate:

- Las Positas College
- South Texas College

Example capstone project:

- San Jose City College SQL for Data Analytics Capstone Project

Example Course Proposal

- Hartnell College

Example Curriculum Map:

- Sample Curriculum Map

Google Educator Guides

- Google Data Analytics Getting Started Guide
- Course 1 Guide: Foundations: Data, Data, Everywhere
- Course 2 Guide: Ask Questions to Make Data-Driven Decisions
- Course 3 Guide: Prepare Data for Exploration
- Course 4 Guide: Process Data From Dirty to Clean
- Course 5 Guide: Analyze Data to Answer Questions
- Course 6 Guide: Share Data Through the Art of Visualization
- Course 7 Guide: Data Analysis with R Programming
- Course 8 Guide: Google Data Analytics Capstone: Complete a Case Study

Stanford Teaching Commons resources on flipped, blended, and online teaching

- What is Blended Teaching?
- Flipped Classroom Pedagogy
- Balancing Synchronous and Asynchronous Activities

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