

# USING GOOGLE APPS FOR ASSESSMENT: INTUITIVE, EFFICIENT, AND FREE



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# Session Objective



Increase knowledge of the ways in which Google Apps can be adapted for the assessment of learning including **data collection** using **scoring guides/rubrics**, **rubric norming**, and **sharing results**.

# Participant Outcomes

## Participants will be able to:

1. **Explain** how Google Apps can facilitate the assessment of student learning
2. **Give examples** of ways in which Google Sheets and Forms can be used to facilitate rubric norming/calibration
3. **Describe the possibilities** and **find resources** on how to use Google Sheets and Forms to facilitate reliable and efficient data use

# United States Naval Academy

(Background)

- Undergraduate college of the United States Navy and Marine Corps
- ~4500 midshipmen (students)
  - Hail from all 50 states and U.S. Territories
  - Degree completion required in 47-month time frame by Act of Congress



# United States Naval Academy

(Academics)

- 5 Divisions, 20 Academic Departments, 25 majors
  - General education (core) of ~80 of ~140 total credits
  - Typically 18 credit hours a semester
  - Bachelor of Science Degrees (English to Engineering)



# United States Naval Academy

(Personnel)

- Faculty/Staff
  - ~580 faculty members
    - approximately ½ civilian and ½ military officers
  - Typically one administrative/clerical staff member per department



# United States Naval Academy

(Background, challenges, constraints, and resources)

- G Suite used across the USNA enterprise since 2012
  - available free through Google Play, Chrome store, and Google product website
    - applications include:



Electronic Mail



Docs



Calendar



Sheets



Slides

(presentations)



Cloud-based Drive



Hangouts



Forms

# Challenges in assessment of student learning for faculty/departments

- Requires faculty members to **develop proficiencies outside their areas of expertise**
  - Assessment is an extension of teaching, but the criteria and documentation required in assessment processes is outside the comfort zones for many faculty
- **Technology can be seen as threatening and/or as helpful** for facilitating **collection, analysis, and reporting.**

# Meeting departments where they are at

← How comfortable are your faculty with technology? →

- [W]e still have some challenges of a technical, or technological, nature. Scoring of rubrics is done by hand on paper, and data entry into Excel is a somewhat laborious task.... Our bar graph below is courtesy of a faculty member's spouse, which points to the lack of institutional support and resources for assessment (as well as to the generosity of professors and their families). (2012 Assessment Report)
- At the beginning of the spring semester, it was discovered that the majority of data collected online for both the major and the core courses had "disappeared." The online rubric developed ... by IT was supposed to collect and maintain the data in a spreadsheet, but most of the collected data had not gone into the spreadsheet. The department was on the verge of abandoning major assessment for the Class of 2014 ... (2012 Assessment Report)

# Simultaneous collection of data by 20+ instructors on Google Sheets

SC112 SPRING 2017 EXCEL SKILLS ASSESSMENT

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

ALPHA

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	ALPHA	LAST NAME	2 = Fully Met		1= Needs Improvement			0= unacceptable					
2			Excel spreadsheeting skills				Excel plotting skills						
3			EXP	data	sig figs	format	labeling	title	axes	data	trendline		
4			12C	2	2	2	2	1	2	2	2		
5			12C	2	1	2	2	2	1.5	2	2		
6			12C	2	1	2	1.5	2	1.5	2	2		
7			12C	2	1	2	1.5	2	1.5	2	2		
8			12C	2	2	2	1.5	2	2	2	2		
9			12C										
10			12C										
11			12C										
12			12C										
13			12C										
14			12C										
15			12C										
16			12C										
17			12C										
18			12C										
19			12C										
20			12C										
21			12C										
22			12C										
23			12C										

faculty asked to score at least 5 students from a randomized list during a group session where rubric norming is embedded

data is easily aggregated for analysis when scoring is complete

separate tabs for each faculty member

# Example of Form on Webpage

Forms are formatted to be viewed appropriately on an iPad or smartphone

Unsatisfactory      Excellent

**Style (10%)**

Diction, sentence structure and variety, clarity, concision

5 Excellent: Rich diction, variety of sentence patterns; strong awareness of audience, tone  
4 Undefined:  
3 Average: Bland or repetitive vocabulary, sentence patterns; limited awareness of audience, tone  
2 Undefined  
1 Unsatisfactory: Problems with vocabulary, sentence patterns, audience awareness, tone

Style Points \*

1 2 3 4 5

Unsatisfactory      Excellent

**Mechanics (10%)**

Grammar, syntax, punctuation, spelling, format

5 Excellent: Very clean writing  
4 Undefined:  
3 Average: Some mechanical problems, may distract reader  
2 Undefined  
1 Unsatisfactory: Major mechanical problems, interfering with meaning of text

Mechanics Points \*

1 2 3 4 5

Unsatisfactory      Excellent

Send me a copy of my responses.

**SUBMIT**

Never submit passwords through Google Forms.

Forms can be set with the option to let participants receive copies of their responses when they submit

# Google Form/Rubric with Instructions

## Writing Rubric

Please remember when filling out this rubric that Plebe scores will be typically be low. Scoring an essay using the rubric should not be seen as equivalent to grading your student's essay. There are a few reasons for this. First, the rubric uses a 100-point scale; while theoretically most of us use a 100-point scale for grading, practically speaking many of us confine our grading within the 60-100 range. Second, certain factors may earn a student a higher grade than the essay would ordinarily merit: for instance, some instructors may reward improvement or multiple EI sessions. Third, we use the same rubric to evaluate writing at all levels of our program; this means we are comparing any one plebe essay not against the best plebe essay, but against the best Firstie English major essay. Plebe essays recently evaluated earned scores ranging from 22-82; the average score for a plebe essay was 51.

Your email address ( [redacted] usna.edu ) will be recorded when you submit this form. Not you? [Switch account](#)

\* Required

Alpha Code \*

ex: "123456"

Your answer

BB/HE111/HE112 \*

Blue Book

HE111

This is a rubric was delivered via email with a link to access the rubric itself.

The first section is guidance for how to apply the rubric (specifically why it is different from grading).

The form has a timestamp and records the participant along with their responses.

# Using Google Forms for Data Collection

The screenshot shows the Google Forms editor interface. At the top, there are tabs for 'QUESTIONS' and 'RESPONSES' with a count of '33'. The main content area displays two questions: 'Content & Thesis (30%)' and 'Analysis (30%)'. A central menu is open, listing various question types: Short answer, Paragraph, Multiple choice, Checkboxes, Dropdown, File upload, Linear scale, Grid, Date, and Time. The 'File upload' option is highlighted. Below the menu, the 'Content & Thesis Points' question is visible, showing a linear scale from 1 to 5 with labels 'Unsatisfactory' and 'Excellent'. The 'Analysis Points' question is also visible, showing a linear scale from 1 to 5 with labels 'Unsatisfactory' and 'Excellent'.

Google forms has several question types for collecting qualitative and quantitative responses

- Multiple Choice = Pie
- Drop Down Menu = Pie
- Checkbox = Horizontal Bar
- Linear Scale = Vertical Bar
- Multiple Choice Grid = Vertical Bar

# Send Form Electronically

## Send form

### Link to share

<https://docs.google.com/a/usna.edu/forms/d/e/1FA>

Embed

Short Url

Share link via:



Send form via email:

Include form in email

Send me a copy

▼ Customize message and subject

Subject:

Custom message:

Note: The form description is always included in the email.

Send

Cancel

E-mail or post link in a web page or calendar meeting

Send form in email with option to embed

# Results

Copy of Copy of Plebe Writing Assessment Rubric ☆ ■  
File Edit View Insert Format **Data** Tools Form Add-ons Help All changes saved in Drive

Data tab contains basic analysis and visuals

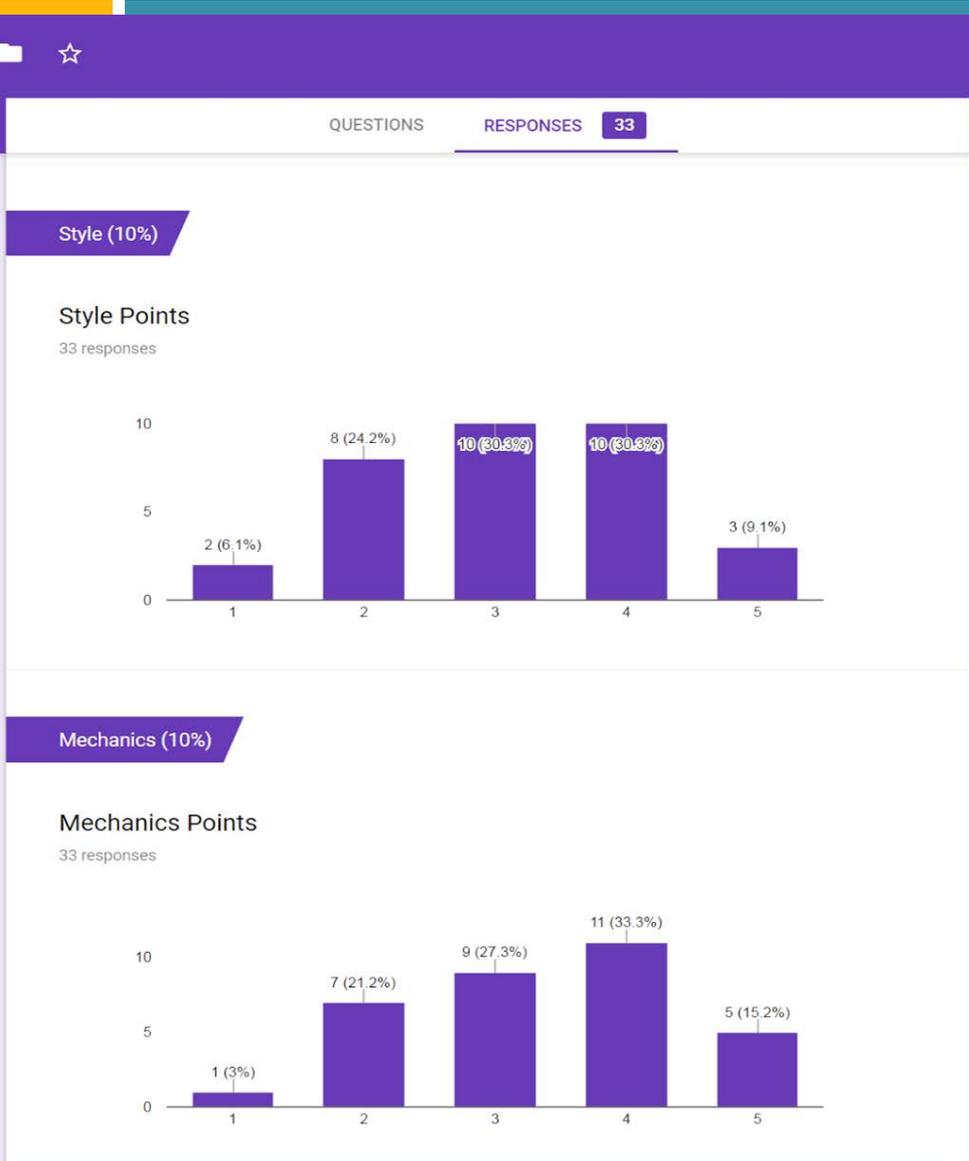
Username	Alpha Code	Content & Thesis Points	Analysis Points	Organization Points	Mechanics Points	Style Points
kac@usna.edu		2	3	2	2	2
kac@usna.edu		4	4	4	3	4
kac@usna.edu		4	5	4	5	5
kac@usna.edu		4	4	5	4	4
kac@usna.edu		3	4	4	3	4

Microsoft Excel (.xlsx)

Data can be downloaded into a variety of formats including Excel

3/1/2016 13:07:25	kac@usna.edu	2	1	2	1	1
3/1/2016 13:08:11	kac@usna.edu	4	4	4	4	4
3/1/2016 13:10:34	kac@usna.edu	2	4	3	2	2
3/1/2016 13:13:41	kac@usna.edu	3	3	4	3	3
3/1/2016 13:14:34	kac@usna.edu	4	4	4	4	4
3/1/2016 13:15:16	kac@usna.edu	3	4	4	3	4
3/1/2016 13:15:55	kac@usna.edu	3	2	2	3	3
3/1/2016 13:16:30	kac@usna.edu	4	4	4	3	3
3/1/2016 13:16:30	kac@usna.edu	1	2	2	3	2
3/1/2016 13:18:02	kac@usna.edu	3	4	3	3	3
3/1/2016 13:18:43	kac@usna.edu	4	3	4	4	4
3/1/2016 13:20:15	kac@usna.edu	2	2	1	2	2

# Results



Summary Page shows aggregated responses that can be cut and pasted directly into annual report

Less time spent on data entry, centralized and timely collection, and by sharing the access to the form less time spent on preparing data and more time on discussing results

# Google Forms for Course Evaluation

## SB251 Course Evaluation

Form Description

Date evaluation was administered\*

Month ▼ Day ▼ 2017 ▼ 

Section Number\*

▼

Instructor\*

▼

Indicate how well this course supported your progress toward achieving the learning outcomes described below.

Through this course, students will be able to....

Very well supported

Well supported

Supported

Somewhat supported

Not supported

Identify, describe, and differentiate among major taxonomic categories, including the three domains and the lineage of human beings.



Very well supported

Well supported

Supported

Somewhat supported

Not supported

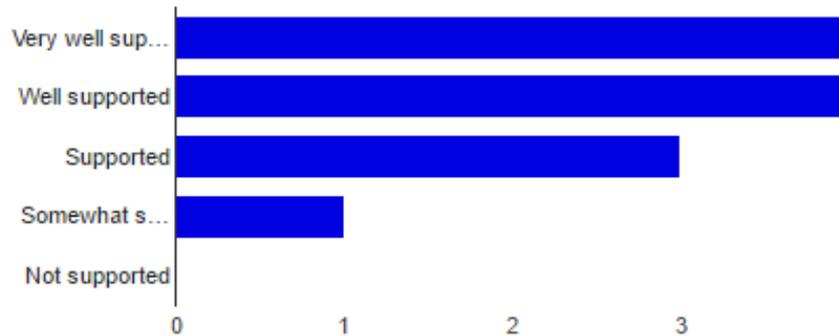
Name, identify, and distinguish among the basic molecules that comprise cells

student responses are collected quickly and anonymously

indirect assessment can be conducted by asking students to reflect on the degree to which each learning outcome in the course was achieved

# Google Summary of Course Evaluation

Identify, describe, and differentiate among major taxonomic categories, including the three domains and the lineage of



Very well supported	4	33.3%
Well supported	4	33.3%
Supported	3	25%
Somewhat supported	1	8.3%
Not supported	0	0%

Name, identify, and distinguish among the basic molecules th



**Google Forms automatically generates summary of responses**

**Further analysis of answers can be conducted by downloading the data as a spreadsheet**

Supported	0	0%
Somewhat supported	0	0%
Not supported	0	0%

# Google Forms for Course Evaluation

**Please explain or elaborate on your answer choices regarding learning outcomes support made above.**

Great class!

Good foundation of these concepts

Learning outcomes were supported

This course covered the scope of information that was supposed to be covered and at times delved deeper into related material as well.

The genetics section of the course, particularly Mendelian inheritance, was somewhat confusing and difficult to comprehend.

**individual student free responses are displayed anonymously and can be transferred to another program for coding**

# USNA Faculty Senate Assessment Committee (FSAC) Outcomes

Through the work of FSAC, USNA faculty and staff will...

1. maintain a **culture of assessment** of student learning that supports the **improvement of midshipman educational experiences** within the core and majors at the course, departmental, divisional, and institutional levels
2. employ **meaningful, manageable, and sustainable practices** in assessment of student learning throughout the USNA community
3. articulate the **elements of the assessment cycle** and describe **assessment of student learning** within their respective programs/department and the core curriculum
4. create **student learning outcomes** at the course, program, and core levels
5. as a result of meeting outcomes 1 through 4, **meet accreditation expectations** for institutional, core, and programmatic assessment

# The challenge

(for Faculty Senate Assessment Committee)

- **The Faculty Senate Assessment Committee is charged by the Academic Dean & Provost with maintaining an assessment process that focuses on improvement of student educational experiences.**
- **Twelve members from academic areas, professional (military) development, and athletics need to be able to**
  - organize and share materials
  - develop a shared understanding of our purpose
  - coordinate feedback
  - document activity
- **The answer for us was Google Drive and Sheets.**

# Drive for Sharing

The screenshot shows the Google Drive interface. At the top, there is a search bar and a breadcrumb trail: My Drive > Assessment Related > FSAC > Assessment Reports > 2016 FSAC Assessment Reports. On the left, a sidebar shows navigation options: My Drive, Shared with me, Recent, Google Photos, Starred, and Trash. The main area displays a list of files and folders. The file 'Annual Assessment Memo and Templates' is selected. To the right of the file list, there are three text blocks in orange font:

- Access can be provided to groups or individuals and can be managed by folder and by file**
- Access and update materials synchronously -- can view each others contributions in real time**
- Revisions history and notifications of changes in Sheets**

Name ↑	Owner	Last modified
Academic Support Area Assessment		Aug 29, 2016 me
AcDean Assessment Status 2015-16		2:57 PM me
Annual Assessment Memo and Templates		Aug 4, 2016 me
Division Feedback		3:01 PM me
Division of Engineering & Weapons AY16 Assessment Reports		Aug 30, 2016 me
Division of Humanities & Social Sciences AY16 Assessment Reports		Dec 2, 2016 me
Division of Mathematics & Science AY16 Assessment Reports		Aug 30, 2016 me
Rubric Templates (to be completed for each dept major/core) ★		Aug 30, 2016 me
FSAC 2016 MEETING FEEDBACK 🗨️		Feb 23, 2017 Shirley Lin
FSAC assessment report assignments fall 2016 👤 ★		3:16 PM me
Leadership Education and Development Assessment Report 2016--paginate		Aug 4, 2016 me
Professional Development Assessment Report 2016.pdf 👤		Aug 4, 2016 me

# Sheets for Rubric Norming

	A	B	C	D	E	F	G	H	
1	<b>Cermak</b>								
2	For each criterion, record the score that best describes the department's, program's or core courses' overall current status.								
	<a href="#">Chemistry Core</a>		Exemplary	Fully Met	Developing	Not Present	Highlight Cell Below/Click on Arrow in Right Corner/Choose from List	Comments	
3	<b>Link to document being reviewed</b>		<b>Drop down menu for selection and cells for text/comments</b>						
4	Student Learning Outcomes (sometimes called objectives or goals):	Student Centered		Learning outcomes are student centered statements of what students will know or be able to do.	Learning outcomes are not student centered instead indicating what the department or instructors will do.		Fully Met	Focus is on the actions the students will take to demonstrate competency in the outcome. Indicators are helpful ways to operationalize the outcome.	
5		Level of Thinking		Learning outcomes culminate in the highest (appropriate) levels of thinking. (http://www.usna.edu/Academics/Academic-Dean/Assessment/index.php).	Learning outcomes primarily focus on what students will know or understand, but not how they will use that knowledge or understanding.		Fully Met Developing Not Present		
				The number of outcomes is reasonable	The outcomes either fail to cover essential		Fully Met		

Data validation

Cell range: Cermak!G4

Criteria: List from a range (Sheet3!A2:A4)

Show dropdown list in cell

On invalid data:  Show warning  Reject input

Appearance:  Show validation help text

Click and enter a value from range

Save Remove validation Cancel

**Tab for each reviewer**

Navigation bar showing tabs: Cermak, Lin, and several empty tabs.

# Sheets for Rubric Norming

Sample Norming Rubric					Scores											Reviewer				
Sample Course	Exemplary Count	Fully Met Count	Developing Count	Not Present Count	ONE	TWO	REVIEWER	THREE	FOUR	FIVE	EIGHT	SIX	SEVEN	NINE	TEN	ELEVEN	ONE	TWO	REVIEWER	THREE
Student Learning Outcomes	Student Centered	0	12	0	0	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met			Focus is on the actions that students will take to demonstrate competency in the outcomes. Indicators are helpful ways to operationalize the outcomes.	
	Level of Thinking	0	11	0	1	Fully Met	Not Present	Fully Met	Fully Met	Fully Met	Fully Met		Actually, I don't know. What is "appropriate"? How do I judge? Is this according to Bloom?	Levels appear appropriate for a core courses and indicators help to clarify scaffolding taking place within the courses.						
	Curriculum Coverage	0	11	0	1	Fully Met	Not Present	Fully Met	Fully Met	Fully Met	Fully Met		Again, what is the benchmark for "too many" or "too few"? Does this judgment require expertise in the subject matter?		My only concern is that LOC #1 seems to cover a lot of material, compare to LOC #4. When I look at the time cycle matrix, the number of indicators of LOC #1 seems endless, that would help (an outside understanding) to have a list of sub-outcomes considered a part of #1.					
Assessment is an on-going process	On-going	0	11	1	0	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met	Fully Met	Developing	Fully Met	Fully Met	Fully Met			Page 17. Are all aspects of LO 1 being addressed? Atomic/Molecular Theory, Thermodynamics, and Kinetics?	
	Assessment Action	6	6	0	0	Exemplary	Fully Met	Exemplary	Fully Met	Fully Met	Fully Met	Exemplary	Exemplary	Exemplary	Exemplary	Fully Met	Fully Met		2014-15 Examined LO 1 w/ re: to stoichiometry. This was examined again in 2015-16 to determine if changes resulted in improvements/change.	I'm not quite sure the difference between exemplary and fully met. Certainly, it seems like change in chemistry textbooks and the homework system improved student performance on the relevant problems related to stoichiometry.

# The challenge

## (for a d m i n i s t r a t i o n )

- Administration needs to show that assessment is an on-going process and that results are used to improve the educational experiences of students.
- Annually
  - 25 reports from majors and 5 from minors
  - 17 reports from departments that contribute to the core
  - 3 reports from divisions
    - ~1000 pages
- Need to aggregate basic information and show progress that can support the larger narrative of assessment.

# Google Forms for Reporting in Aggregate



## Assessment Status Table

\* Required

Report Type \*

- Core
- Major
- Other: \_\_\_\_\_

Select Department Name \*

Choose ▾

Assessment Report Submitted \*

- Yes
- No

Learning Outcomes Assessed \*

- Yes
- No

Learning outcome(s) assessed

Your answer \_\_\_\_\_

DIRECT assessment of student learning included. \*

- Yes
- No

Indicate types of DIRECT assessment conducted, if any.

Your answer \_\_\_\_\_

Indicate types of INDIRECT assessment conducted, if any.

Your answer \_\_\_\_\_

Future actions identified, as a result of the current assessment activities. \*

- Yes

# Data Sheet / Documentation Support

Type of Report	Department	Assessment Report Submitted	Learning Outcomes Assessed	Learning outcome(s) assessed	DIRECT assessment of student learning included.	Indicate types of DIRECT assessment conducted, if any.	Indicate types of indirect assessment conducted, if any.	Future actions identified, as a result of current assessment activities.	Assessment actions identified as a result of previous assessment activities.
Core		Yes	Yes	1. Fundamental eng	Yes	Common exam items	Student survey	Yes	Rewrite and rescope is p
Core		Yes	Yes	1. Fundamental eng	Yes	Common exam (final)	Final grades	Yes	Will consider introducing
Core		Yes	Yes	1. Fundamental eng	Yes	Final exam	Student survey, MERCAA	Yes	Reassess laboratory per
Core		Yes	Yes	1. Fundamental eng	Yes	Final exam items		Yes	Adjust final exam to ens
Core		Yes	Yes	1. Fundamental eng	Yes	Rubrics for labs, exams, or homework		Yes	Include student evaluatio
Major	Economics	Yes	Yes	1) Apply economic r	Yes	Common exam items (local and ex	Faculty conversations regardi	Yes	Course coordinator will li
Major	English	Yes	Yes	1. Write thesis-drive	Yes	Rubrics	Focus Groups	Yes	Changes to assessment
Major	History	Yes	Yes	the chief recommen	Yes	Rubric?	Focus groups.	Yes	Adjust rubric after discus
Other	Languages and Cultures	Yes	Yes	For AY2016 all lang	Yes	Samples of student oral skills sco		Yes	Improve RADAR lab equi
Major	Political Science	Yes	Yes	2. A political science	Yes	Sample of student work and rubric		Yes	LEGO mindstorm perform
Core	English	Yes	Yes	1) Writing Competer	Yes	Rubric and assignments.	Survey of students	Yes	Identified student softwa
Core	History	Yes	Yes	A. Historical compet	Yes	Instructor Essay Questions (uniqu	Focus groups.	Yes	Brownbag based on asse
Core	Political Science	Yes	Yes	2. A political science	Yes	Sample of student work and rubric		Yes	Relationship to the asse
Major	Oceanography	Yes	Yes	SLO #3: Analyze th	Yes	Exam questions and assignments	Anecdotal observations	Yes	The committee was inter
Major	General Science	Yes	Yes	1. communicate clie	Yes	Exams and Written Assignments	Exit Surveys	Yes	The department commit
Major	Quantitative Economics	Yes	Yes	Speak, read and wr	Yes	Pre-post using final exam, Commo	Exit survey.	Yes	Will create a rubric and u
Major	Computer Science	Yes	Yes	An ability to apply ki	Yes	Exam questions, on-line ethics que	Exit survey and Midshipman A	Yes	A. Results of the student
Major	Chemistry	Yes	Yes	#1: Explain natural	Yes	Final exam, quiz questions, indepe		Yes	B. One or more brown b
Major	Cyber Science	Yes	Yes	a. An ability to apply	Yes	Graded student work-projects, as	SOPs and Course Coordinator	Yes	C. Rather than wait until
Major	Physics	Yes	Yes	(1) Demonstrate del	Yes	Major Field Test, Project Rubric, C	1/C laboratory instructors com	Yes	Will carefully watch stud
Major	Mathematics	Yes	Yes	"Formulation" and "J	Yes	Capstone Papers and Rubrics		Yes	The department will use
Core	Chemistry	Yes	Yes	Apply the language	Yes	multiple-choice exam questions; E	none	Yes	Future analysis with add

# Information by Department

Type of Report	Department Information	Assessment Report Submitted	Learning Outcomes Assessed	DIRECT assessment of student learning included.	Future actions identified, as a result of the current assessment activities.	Actions as a result of previous assessment activities
Core	Aerospace Engineering	Yes	Yes	Yes	Yes	Yes
Core	Electrical and Computer Engineering	Yes	Yes	Yes	Yes	Yes
Core	Mechanical Engineering	Yes	Yes	Yes	Yes	Yes
Core	Naval Architecture and Ocean Engin	Yes	Yes	Yes	Yes	Yes
Core	Weapons and Systems Engineering	Yes	Yes	Yes	Yes	Yes
Major	Aerospace Engineering	Yes	Yes	Yes	Yes	Yes
Major	Electrical and Computer Engineering	Yes	Yes	Yes	Yes	Yes
Major	Mechanical Engineering	Yes	Yes	Yes	Yes	Yes
Major	Naval Architecture and Ocean Engin	Yes	Yes	Yes	Yes	Yes
Major	Systems Engineering	Yes	Yes	Yes	Yes	No Actions Were Needed
	Engineering Core	100%	100%	100%	100%	100%
	Engineering Majors	100%	100%	100%	100%	100%
	Engineering All	100%	100%	100%	100%	100%

# Aggregated for the Institution

	A	B	C	D	E	F
		Assessment Report Submitted	Learning Outcomes Assessed	DIRECT assessment of student learning included.	Future actions identified, as a result of the most recent assessment activities reported	Actions as a result of previous assessment activities
1						
2	Engineering Core (5)	100%	100%	100%	100%	100%
3	HUM/SS Core (3)	100%	66%	66%	100%	100%
4	Leadership, Ethics, and Law Core (1)	100%	100%	100%	100%	100%
5	MATH/SCI Core (4)	100%	75%	100%	75%	100%
6	Seamanship and Navigation (Core) (1)	100%	100%	100%	100%	100%
7	<b>USNA Core 2015-16</b>	<b>100%</b>	<b>86%</b>	<b>93%</b>	<b>93%</b>	<b>100%</b>
8	<b>USNA Core 2014-15</b>	<b>100%</b>	<b>73%</b>	<b>93%</b>	<b>100%</b>	<b>100%</b>
9	<b>USNA Core 2012-13</b>	<b>71%</b>	<b>29%</b>	<b>50%</b>	<b>57%</b>	<b>57%</b>
10						
11						
12	Engineering Departments (5)	100%	100%	100%	100%	100%
13	HUM/SS Departments (5)	100%	80%	80%	100%	100%
14	MATH/SCI Departments and Programs (8)	100%	100%	100%	100%	100%
15	<b>USNA Departmets with majors/minors 2015-16</b>	<b>100%</b>	<b>94%</b>	<b>94%</b>	<b>100%</b>	<b>100%</b>
16	<b>USNA Departments with majors/minors 2014-15</b>	<b>100%</b>	<b>78%</b>	<b>83%</b>	<b>94%</b>	<b>94%</b>
17	<b>USNA Departments with majors/minors 2012-13</b>	<b>94%</b>	<b>65%</b>	<b>76%</b>	<b>76%</b>	<b>76%</b>
18						
19	<b>USNA All 2015-16</b>	<b>100%</b>	<b>91%</b>	<b>94%</b>	<b>97%</b>	<b>100%</b>
20	<b>USNA All 2014-15</b>	<b>100%</b>	<b>78%</b>	<b>88%</b>	<b>97%</b>	<b>97%</b>
21	<b>USNA All 2012-13</b>	<b>84%</b>	<b>48%</b>	<b>65%</b>	<b>68%</b>	<b>68%</b>
22						
23						

# Conclusion

- Greater ease of collection and analysis at the departmental level and aggregated up to the institutional level.
- Google Drive allows for sharing materials, increasing communication, and documenting activities.
- Forms and Sheets lets us collect, norm/calibrate, aggregate, and document easily.
- Can edit in real time without issues with down- and uploading or multiple versions.
- **CAUTION** with PII/FERPA compliance if your not using an enterprise solution.

# Other software tools for collaboration and data collection

- **Dropbox ([www.dropbox.com](http://www.dropbox.com))**
  - “**Organization-wide collaboration:** Use comments to quickly gather feedback right next to your files. You can also invite your team to shared folders, where they can add and edit files together. Changes sync automatically, giving everyone the most recent version in their Dropbox folders.”
- **Microsoft Office 365 ([www.microsoft.com](http://www.microsoft.com))**
  - “Microsoft Office collaboration and productivity tools delivered through the cloud. Everyone can work together easily with anywhere access to email, web conferencing, documents, and calendars.”
- **JotForm ([www.jotform.com](http://www.jotform.com))**
  - free
  - wide variety of form templates available

# Questions/ Discussion



???