Title

Subtitle

Name

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University – Department
Event Information

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Version 2025/12/30 @12:27

Outline

1. General
2. Environments
3. Commands
4. Math
5. Figures
6. Animations
7. References

1

General

Bulleted List Slide Example

- Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis.
- Curabitur dictum gravida mauris.
- Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque.
- Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

→ Side-by-Side Bulleted List + Figure Slide Example

- Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis.
- Curabitur dictum gravida mauris.
- Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque.
- Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

Top-Bottom Figure + Bulleted List Slide Example

- Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis.
- Curabitur dictum gravida mauris.
- Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque.
- Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

→ Side-by-Side Figures Slide Example

→ Colors

- General colors: niceblue nicered nicegreen nicepink nicepurple nicegray
- Grays: lightgray mediumgray darkergray
- CSU colors: csugreen csugold csugreendarker
- Beamer theme colors (global): fixedtextcolor fixedbgcolor tcolorboxbg primary-color graycolor
- Beamer theme colors (light/dark): textcolor textcolorlight textcoloremph bgcolorlight edgecolor
- Change the colors in `.config/2-colors.tex`

→ Nested `itemize` and `enumerate` Environments

- Apples
  - Apples
    - Apples
    - Apples
  - Apples
  - Apples
- Apples

1. Oranges
   1.1 Oranges
   1.2 Oranges
      1.2.1 Oranges
      1.2.2 Oranges
   1.3 Oranges
2. Oranges
3. Oranges

2

Environments

→ Quote

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

→ Theorem, Definition, and Algorithm

Theorem (Some Text)

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque.

Definition (Some Text)

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Algorithm (Some Text)

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Special Call-Out Boxes (1)

- These are intended to be in an itemize/enumerate environment

Remark

Lorem ipsum dolor sit amet, consectetuer adipiscing elit.

Important

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis.

Upcoming

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Question

Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris.

Special Call-Out Boxes (2)

Remark

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- Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

Important

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Upcoming

Lorem ipsum dolor sit amet, consectetuer adipiscing elit.

- Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.
  - Note use of `\unskip` for better spacing with boxes after nested lists

Question

Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris.

Special Call-Out Boxes (3)

Optional

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Review

[Review Context] Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus.

Review

[Review Context] Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus.

Review

[Review Context] Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus.

Code Listing

Some Matlab code:

```
% This program prints Hello, world!

disp("Hello, world!")
```

Some Python code:

```
# This program prints Hello, world!

print('Hello, world!')
```

Be sure to use the `myslidefragile` environment!

3

Commands

→ Footnote Commands

Use[1] `\parnote` and[2] `\parnotefull` for[3] footnotes[4,5]
Use the `b` slide option when you have footnotes

[1] This is the first one [2] This is the second one [3] This is the third one that takes up the rest of the line
[4] This is the forth one that takes up the rest of the line
[5] This is the fifth one

→ URL Commands

`\urlfull` with an example https://www.engr.colostate.edu/~drherber and in a footnote[1]
`\urlhttps` with an example www.engr.colostate.edu/~drherber and in a footnote[2]
`\urlvideo` with an example www.youtube.com/watch?v=N17Od3rY0bA and in a footnote[3]
`\urlyoutube` with an example N17Od3rY0bA

[1] https://www.engr.colostate.edu/~drherber [2] www.engr.colostate.edu/~drherber
[3] www.youtube.com/watch?v=N17Od3rY0bA

→ Other Commands

Use `\qedsymbol` for □
Use `\myterm` for terms like #*Term* (see next slide and `\mytermslides`)
Use `\myline` for a horizontal dividing line

Use `\eqrepeat` to repeat the last equation number (good when you want to repeat an equation on the next slide):

$$A = \frac{\pi r^2}{2} \tag{1}$$

$$A = \frac{\pi r^2}{2} \tag{1}$$

→ Examples of Terms #*Term Title*

#*Term Text 1* Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. #*Term Text 2* Curabitur dictum gravida mauris.[1]

Theorem (Great Theorem)

Curabitur dictum gravida mauris. #*Term Theorem Text*

1. #*Term List 1*
2. #*Term List 2*

Remark

#*Term Box*

Doesn't work in equation environments, but you can use inline math such as #*Term* $x - \mathcal{L} - x$

[1] They work in a footnote #*Term Footnote*

MATLAB Example

Use `\matlabfunction` for the hyperlinked MATLAB example below

`ex_matlab_basics.m`

4

Math

→ `subequations` and Tags

Multi-line aligned equation with some custom tags:

$$y = x^2 \tag{2a}$$
$$z = \sin(x)$$
$$p = \log(x) \tag{2b}$$
$$q = e^x \tag{A}$$

→ eqbox Command

This is an equation: $A = \frac{\pi r^2}{2}$. Here it is again:

$$A = \frac{\pi r^2}{2} \tag{3}$$

Another a symbol is α

→ `bNiceMatrix` and `pNiceMatrix` Environments

$$\begin{array}{c} \\ r_1 \\ r_2 \end{array} \begin{array}{c} \begin{array}{ccc} c_1 & c_2 & c_3 \end{array} \\ \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} \end{array} \tag{4}$$

$$\begin{array}{c} \\ L_1 \\ \vdots \\ L_4 \end{array} \begin{array}{c} \begin{array}{cccc} C_1 & \cdots & \cdots & C_4 \end{array} \\ \begin{pmatrix} a_{11} & a_{12} & a_{13} & a_{14} \\ a_{21} & a_{22} & a_{23} & a_{24} \\ a_{31} & a_{32} & a_{33} & a_{34} \\ a_{41} & a_{42} & a_{43} & a_{44} \end{pmatrix} \\ \begin{array}{cccc} C_1 & \cdots & \cdots & C_4 \end{array} \end{array} \begin{array}{c} \\ L_1 \\ \vdots \\ L_4 \end{array} \tag{5}$$

5

Figures

→ `myfig` Command

→ `myfigcol` Command

Nunc sed pede. Praesent vitae lectus. Praesent neque justo, vehicula eget, interdum id, facilisis et, nibh. Phasellus at purus et libero lacinia dictum. Fusce aliquet. Nulla eu ante placerat leo semper dictum. Mauris metus. Curabitur lobortis. Curabitur sollicitudin hendrerit nunc. Donec ultrices lacus id ipsum.

→ `myoverpic` Environment

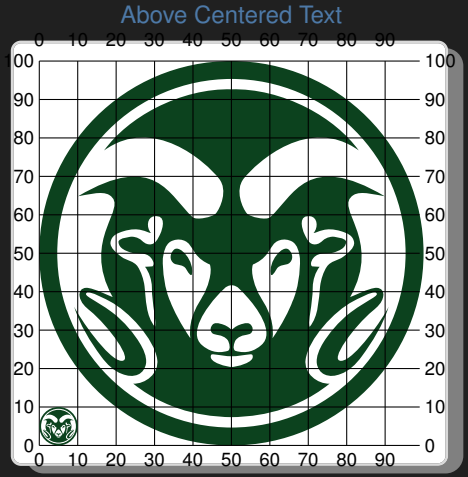
→ `myoverpiccol` Environment

Centered Text

Text

Above Centered Text

`myoverpiccolgrid` Environment with a Grid

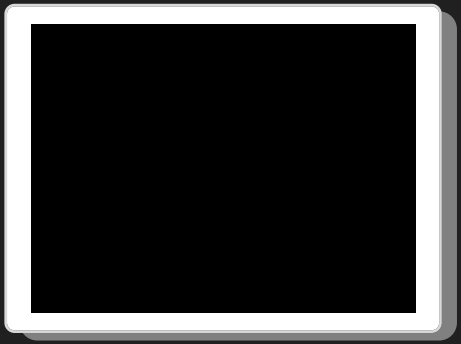


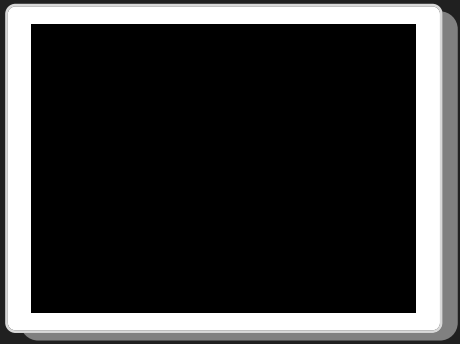
→ Sizes

Slide width `\paperwidth` 5.5129 in 139.99835 mm 398.33858pt
Slide height `\paperheight` 3.54399 in 89.99893 mm 256.0748pt
Text width `\textwidth` 4.72533 in 119.9986 mm 341.43309pt
Text height `\textheight` 3.30104 in 83.82916 mm 238.5199pt
New line height `\baselineskip` 0.15154 in 3.84843 mm 10.95pt
Item separation `\myitemsep` 0.04152 in 1.05437 mm 3.0pt

Side-by-Side Recommended Figure Sizes

Recommended figure width 2 in (below)
Recommended figure height 1.5 in (below)





Matlab recommended figure width 2.25 in
Matlab recommended figure height 1.6875 in

6

Animations

→ Automatic Itemize Animations with `[<+->]`

- To see the animations, ensure that `handout` in `slides.tex` is removed from the `documentclass` options
- Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis.
- Curabitur dictum gravida mauris.
- Here we have a #*Term in an animated slide*
  - Curabitur dictum gravida mauris.
  - Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque.
- Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque.
- Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

Animations Custom Ordering

- Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis.
- Curabitur dictum gravida mauris.
- Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque.
- Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

Special Call-Out Boxes (2) — Animated

Remark

Lorem ipsum dolor sit amet, consectetuer adipiscing elit.

- Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

Important

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis.

Upcoming

Lorem ipsum dolor sit amet, consectetuer adipiscing elit.

- Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.
  - Note use of `\unskip` for better spacing with boxes after nested lists

Question

Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris.

→ `myfigcol` Command — Animated

Nunc sed pede. Praesent vitae lectus. Praesent neque justo, vehicula eget, interdum id, facilisis et, nibh. Phasellus at purus et libero lacinia dictum. Fusce aliquet. Nulla eu ante placerat leo semper dictum. Mauris metus. Curabitur lobortis. Curabitur sollicitudin hendrerit nunc. Donec ultrices lacus id ipsum.

7

References

References with BibLaTeX

`\cite` with an example: Shampine 2007
`\textcite` with an example: Shampine (2007)
`\parencite` with an example: (Shampine 2007)
`\fullcite` with an example: L. F. Shampine (Aug. 2007). "Accurate numerical derivatives in MATLAB". *ACM Transactions on Mathematical Software* 33.4, p. 26. DOI: 10.1145/1268776.1268781

`\citetitle` with an example: "Accurate numerical derivatives in MATLAB"
`\citetitle` with an example: *Engineering Design Optimization*
`\citeauthor` with an example: Shampine
`\citeurl` with an example: https://textbooks.math.gatech.edu/ila/ila.pdf

Multiple citations work like this example (Martins and Ning 2021; Boyd and Vandenberghe 2009; Cipra 2000) and in a footnote[1]

See command `\refslides` for printing the references

[1] Martins and Ning 2021; Boyd and Vandenberghe 2009; Cipra 2000

→ Terms

- # *Term* is on Slide 17
- # *Term Text 1* is on Slide 18
- # *Term Text 2* is on Slide 18
- # *Term Theorem Text* is on Slide 18
- # *Term List 1* is on Slide 18
- # *Term List 2* is on Slide 18
- # *Term Box* is on Slide 18
- # *Term* $x - \mathcal{L} - \boldsymbol{x}$ is on Slide 18
- # *Term Footnote* is on Slide 18
- # *Term Title* is on Slide 18
- # *Term in an animated slide* is on Slide 30

References

- S. Boyd and L. Vandenberghe (2009). *Convex Optimization*. 7th ed. Cambridge University Press
- B. A. Cipra (2000). "The Best of the 20th Century: Editors Name Top 10 Algorithms". *SIAM News* 33.4. URL: https://archive.siam.org/pdf/news/637.pdf
- D. Margalit and J. Rabinoff (2017). *Interactive Linear Algebra*. Georgia Institute of Technology. URL: https://textbooks.math.gatech.edu/ila/ila.pdf
- J. R. R. A. Martins and A. Ning (2021). *Engineering Design Optimization*. October 5th, 2021 edition. Cambridge University Press. DOI: 10.1017/9781108980647
- L. F. Shampine (2007). "Accurate numerical derivatives in MATLAB". *ACM Transactions on Mathematical Software* 33.4. DOI: 10.1145/1268776.1268781

Questions?

Link1
Link2

Title
Number

Author 1
Author 2
Author 3

Appendix Slide