# Installing and Using the Michigan Graph Scheme

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## Introduction

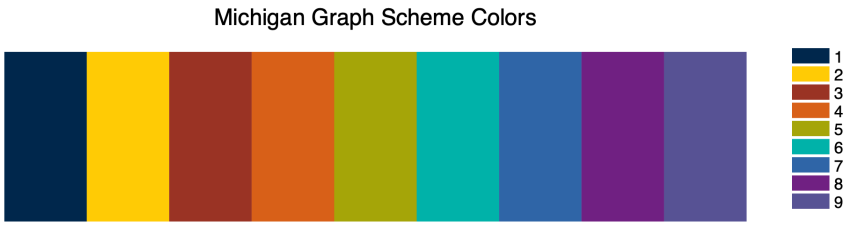


Figure 1: Colors in Michigan Graph Scheme

Stata provides the use of graph schemes that improve the overall look of graphs.

See `help scheme`.

The *Michigan graph scheme* makes use of official University of Michigan colors.

## Installation

Use of the *Michigan graph scheme* depends on installation of the `lean2` graph scheme developed by Svend Juul.

Type `findit lean2` and click through on the install links to install `lean2`.

Then type `net from https://agrogan1.github.io/Stata` and click the links to install.

## Example Data

We are going to use the famous "iris" data collected by Edgar Anderson.

```
. clear all
.
. use "iris.dta", clear
.
. summarize
```

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| Sepal_Length | 150 | 5.843333 | .8280661 | 4.3 | 7.9 |
| Sepal_Width | 150 | 3.057333 | .4358663 | 2 | 4.4 |
| Petal_Length | 150 | 3.758 | 1.765298 | 1 | 6.9 |
| Petal_Width | 150 | 1.199333 | .7622377 | .1 | 2.5 |
| Species | 150 | 2 | .8192319 | 1 | 3 |

# Histogram

```
. histogram Petal_Length, scheme(michigan)
(bin=12, start=1, width=.49166667)
```

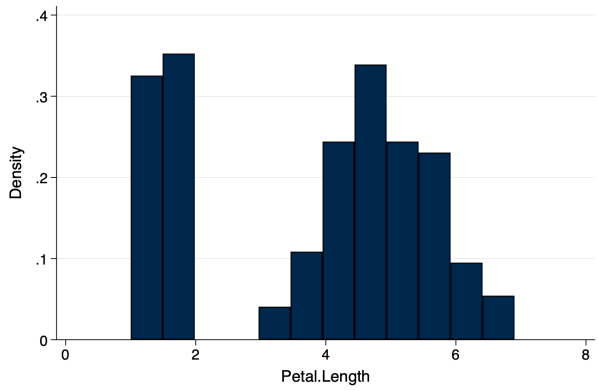


Figure 2: Histogram Using Michigan Scheme

# Histogram With Transparency

```
. histogram Petal_Length, fcolor(%50) scheme(michigan)
(bin=12, start=1, width=.49166667)
```

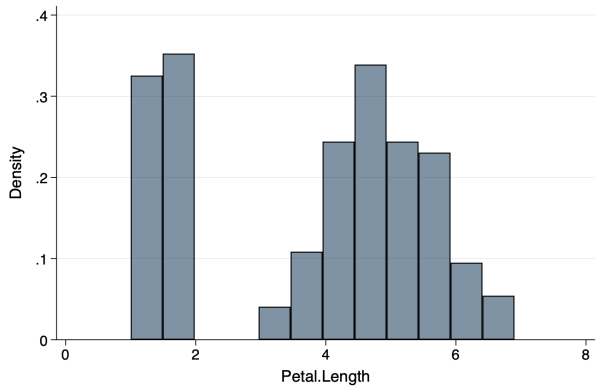


Figure 3: Histogram Using Michigan Scheme And Slightly Transparent Bars

# Bar Graph

```
. graph bar Petal_Length, over(Species) scheme(michigan) asyvars
```

# Bar Graph With Transparency

```
. graph bar Petal_Length, over(Species) intensity(70) scheme(michigan) asyvars
```

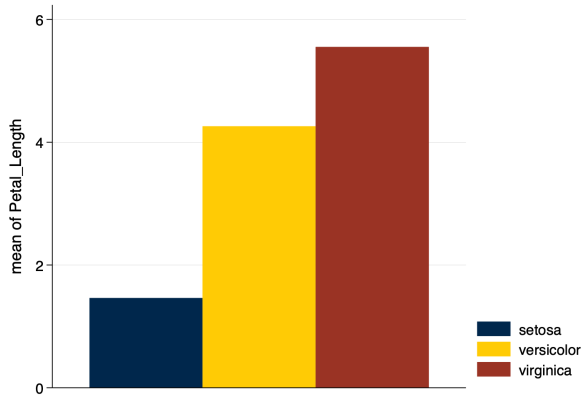


Figure 4: Bar Graph Using Michigan Scheme

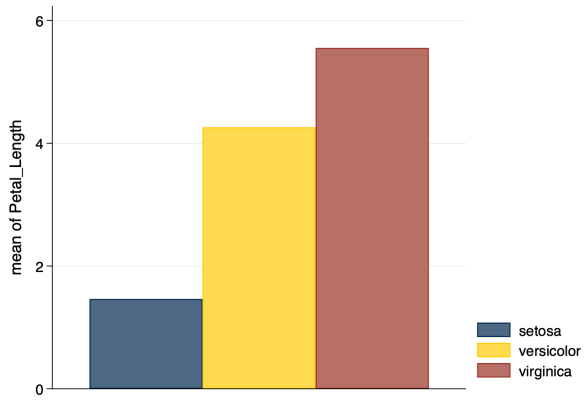


Figure 5: Bar Graph Using Michigan Scheme and Slightly Transparent Bars

## Scatterplot

```
. twoway (scatter Petal_Length Petal_Width) ///
> (lfit Petal_Length Petal_Width), ///
> scheme(michigan)
```

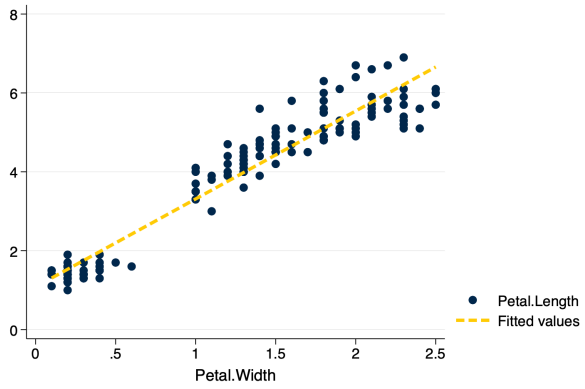


Figure 6: Scatterplot Using Michigan Scheme

## Scatterplot With Transparency

```
. twoway (scatter Petal_Length Petal_Width, mcolor(%30)) /// markers have 30% transpare
> ncy
> (lfit Petal_Length Petal_Width), ///
> scheme(michigan)
```

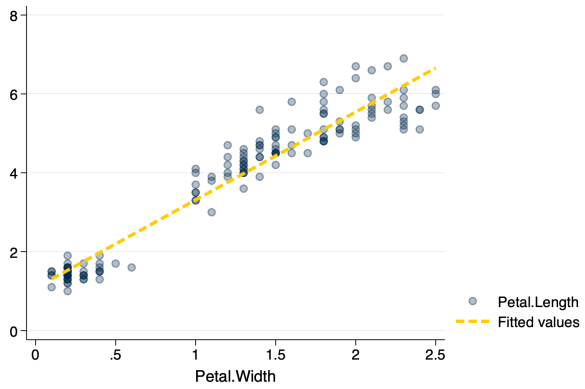


Figure 7: Scatterplot Using Michigan Scheme And Slightly Transparent Markers

## Legend Placement

Sometimes you may wish to have the legend of the graph placed at the *bottom* of the graph. The `pos(6)` suboption inside the `legend` option will place the legend at the bottom, while you can manually control the number of legend rows with the `rows` suboption.

```
. graph bar Petal_Length, over(Species) scheme(michigan) asyvars legend(pos(6) rows(1))
```

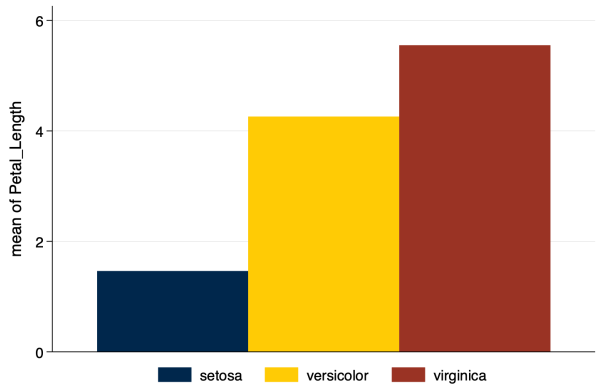


Figure 8: Bar Graph Using Michigan Scheme and Modified Legend

## Individual Michigan Colors

Individual University of Michigan colors are listed below.

| Color | Hex | RGB |
|---|---|---|
| Blue | #00274C | 0 39 76 |
| Maize | #FFCB05 | 255 203 5 |
| Tappan Red | #9A3324 | 154 51 36 |
| Ross School Orange | #D86018 | 216 96 24 |
| Wave Field Green | #A5A508 | 165 165 8 |
| Taubman Teal | #00B2A9 | 0 178 169 |
| Arboretum Blue | #2F65A7 | 47 101 167 |
| Ann Arbor Amethyst | #702082 | 112 32 130 |
| Matthaei Violet | #575294 | 87 82 148 |
| Umma Tan | #CFC096 | 207 192 150 |
| Burton Tower Beige | #9B9A6D | 155 154 109 |
| Angell Hall Ash | #989C97 | 152 156 151 |
| Law Quad Stone | #655A52 | 101 90 82 |

Stata can use RGB codes for colors. As an example.

```
. twoway (scatter Petal_Length Petal_Width, mcolor("112 32 130 %30")) /// markers are A
> methyst with 30% transparency
> (lfit Petal_Length Petal_Width, lcolor("87 82 148")), /// Violet line
> scheme(michigan)
```

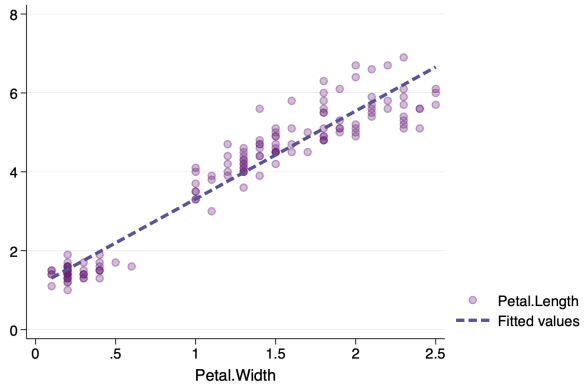


Figure 9: Scatterplot Using Michigan Scheme, Selected Colors, And Slightly Transparent Markers

## Michigan2 Graph Scheme

I have also developed a `michigan2` graph scheme: `, scheme(michigan2)`.

This graph scheme can be installed using the same instructions as above. The `michigan2` scheme slightly reorders the color palette of the original scheme. The scheme begins with blue and maize, but then moves to the *cooler* colors before moving to *Tappan Red* and *Ross Orange*. *Taubman Teal*–a very fluorescent color–is moved to the end of the palette.

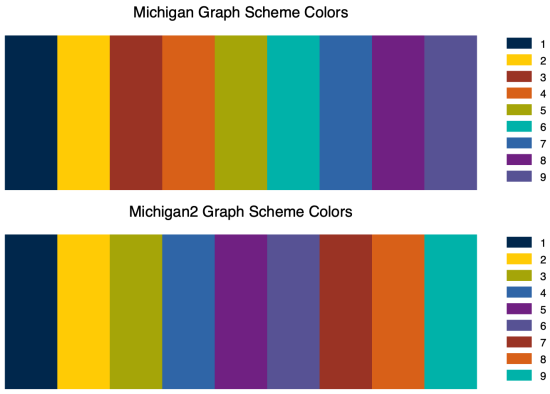


Figure 10: Colors in Michigan Graph Schemes