

# Timing of Evaluations

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## Data Import

Exported **Assignment Type Summaries** from GradeCraft and imported.

```
library(readr)
library(dplyr)
library(tidyr)
datafile <- 'Principles of Nutritional Sciences Submissions - 2018-07-17.csv'

library(readr)
dataset <- read_csv(datafile, col_types=
  cols(`Assignment Type` = col_factor(levels=NULL)))

dropped.students <- c('dave.bridges','ajian','zhongyli')

dataset <- separate(dataset, `Updated At`, sep=" ", into=c('Day','Date','Time'))

library(lubridate)
#converted dates
dataset$Date.Year <- paste(dataset$Date, ' 2017', sep=" ")
dataset$Date.Year <- mdy(dataset$Date.Year)

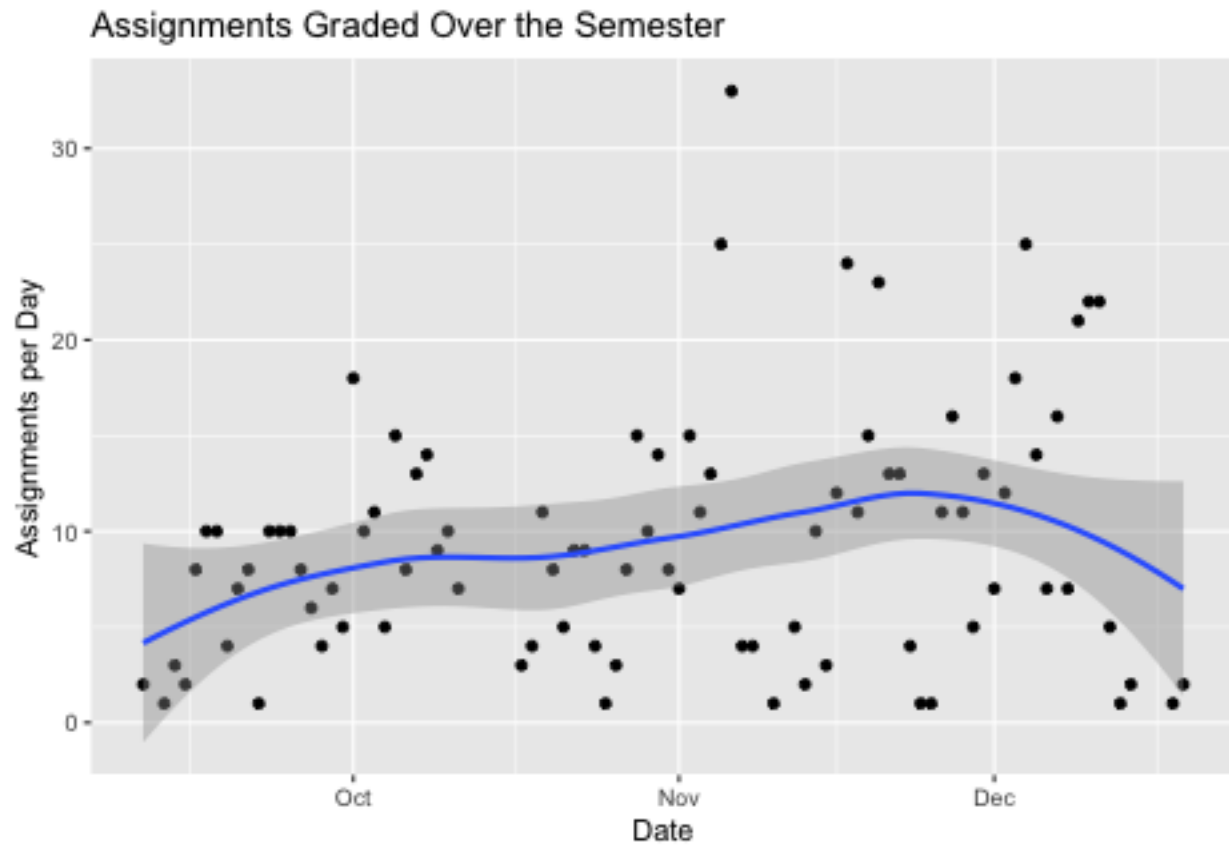
#calculated cumulative sum of scores by date
sum.scores <-
  dataset %>%
  group_by(Date.Year) %>%
  summarize(Points.Awarded = sum(Score),
    Assignments.Graded = length(Score)) %>%
  mutate(Total.Points = cumsum(Points.Awarded))
```

## Assignments Graded Over Time

```
library(ggplot2)

ggplot(sum.scores, aes(y=Assignments.Graded,x=Date.Year)) +
```

```
geom_point() +
geom_smooth() +
labs(y="Assignments per Day",
     x="Date",
     title="Assignments Graded Over the Semester")
```

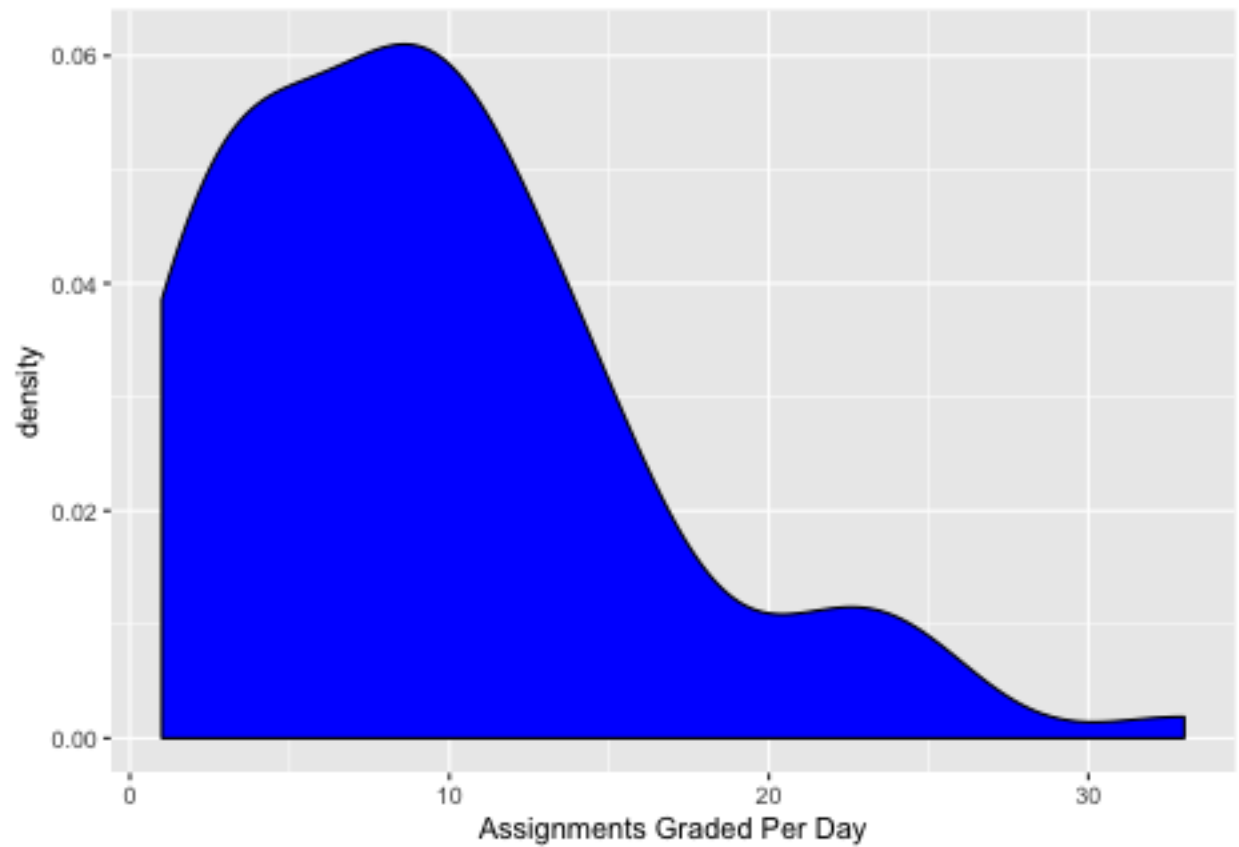


```
summary(sum.scores$Assignments.Granted) %>% broom::tidy() %>% kable(caption="Summary Statistics for Assignments Graded Per Day")
```

Table 1: Summary Statistics for Assignments Graded Per Day

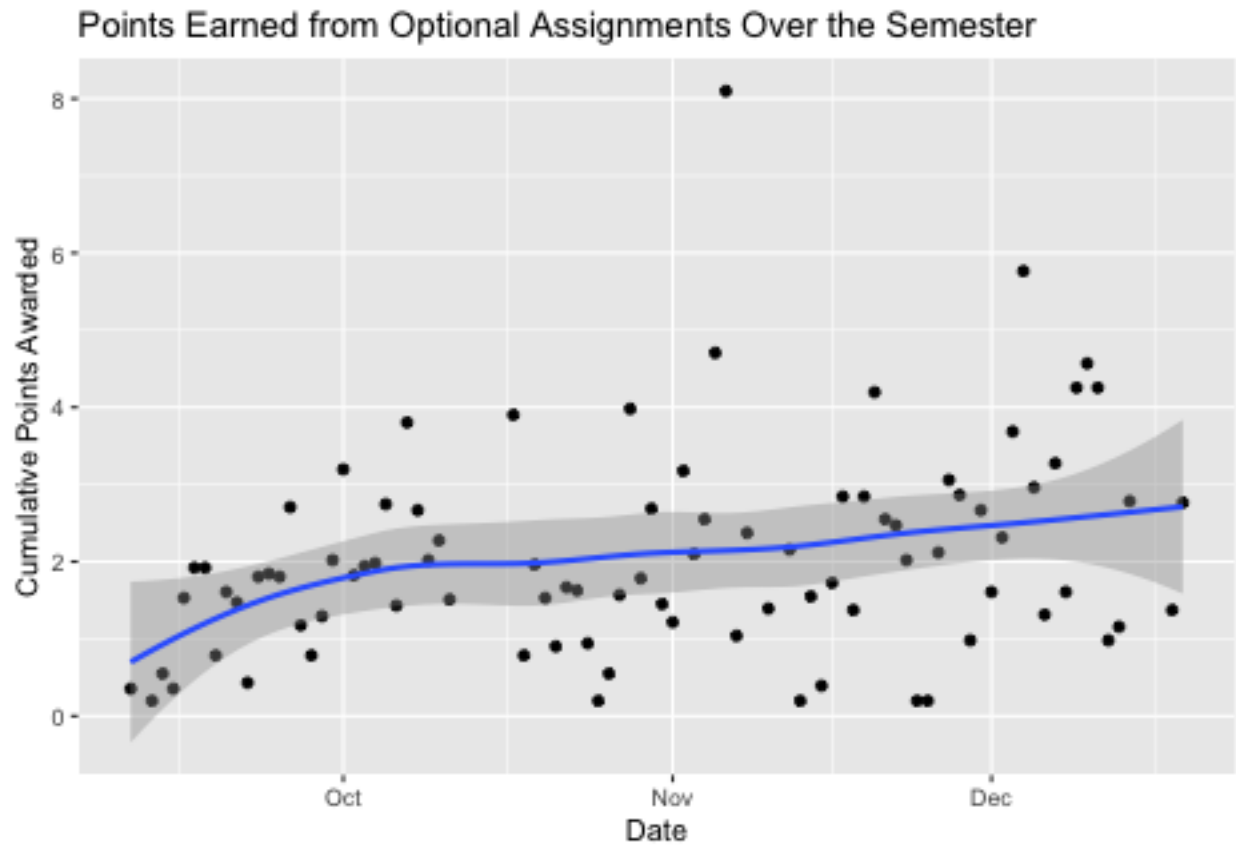
minimum	q1	median	mean	q3	maximum
1	4	8	9.39	13	33

```
ggplot(sum.scores, aes(x=Assignments.Granted)) +
geom_density(fill='blue') +
labs(x="Assignments Graded Per Day")
```

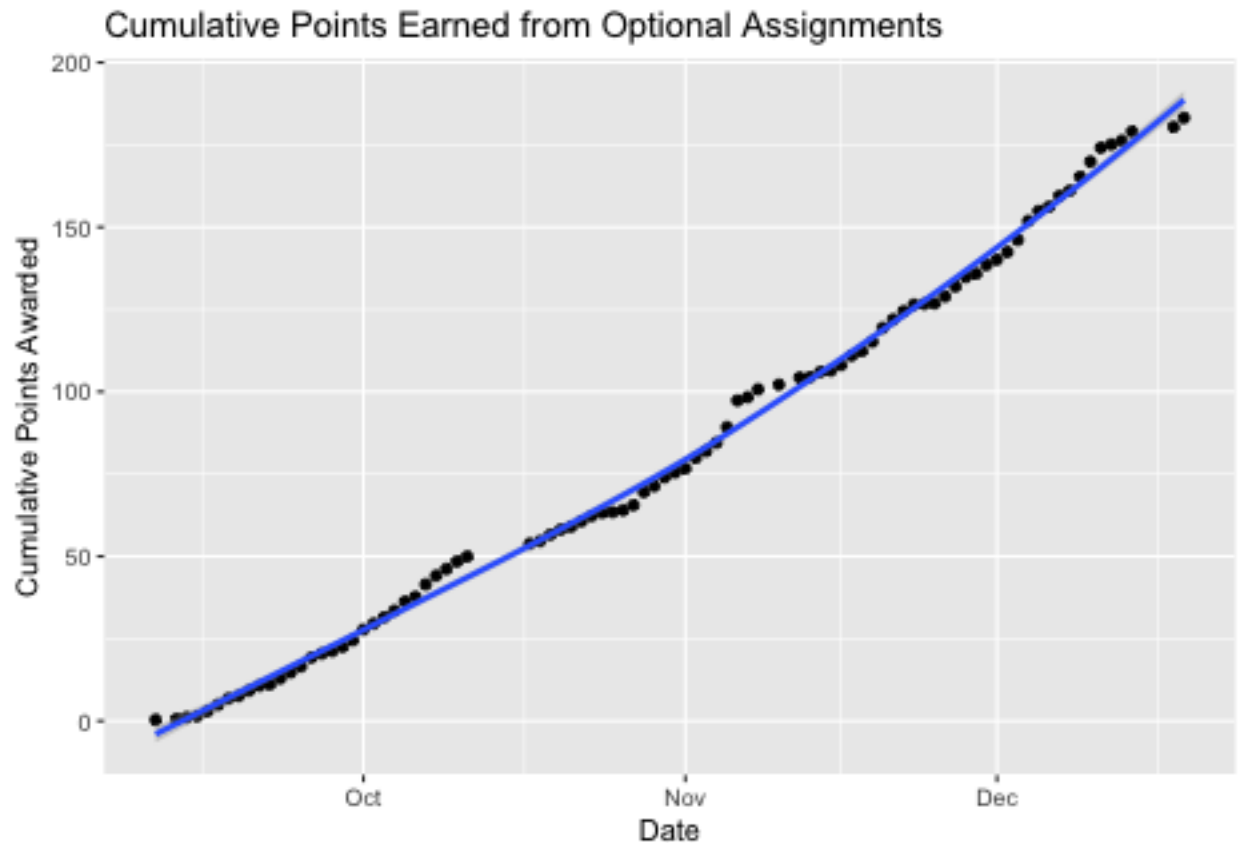


## Points Earned Over Time

```
ggplot(sum.scores, aes(y=Points.Awarded/51,x=Date.Year)) +  
  geom_point() +  
  geom_smooth() +  
  labs(y="Cumulative Points Awarded",  
       x="Date",  
       title="Points Earned from Optional Assignments Over the Semester")
```



```
ggplot(sum.scores, aes(y=Total.Points/51,x=Date.Year)) +  
  geom_point() +  
  geom_smooth() +  
  labs(y="Cumulative Points Awarded",  
        x="Date",  
        title="Cumulative Points Earned from Optional Assignments")
```



## Including the Midterms

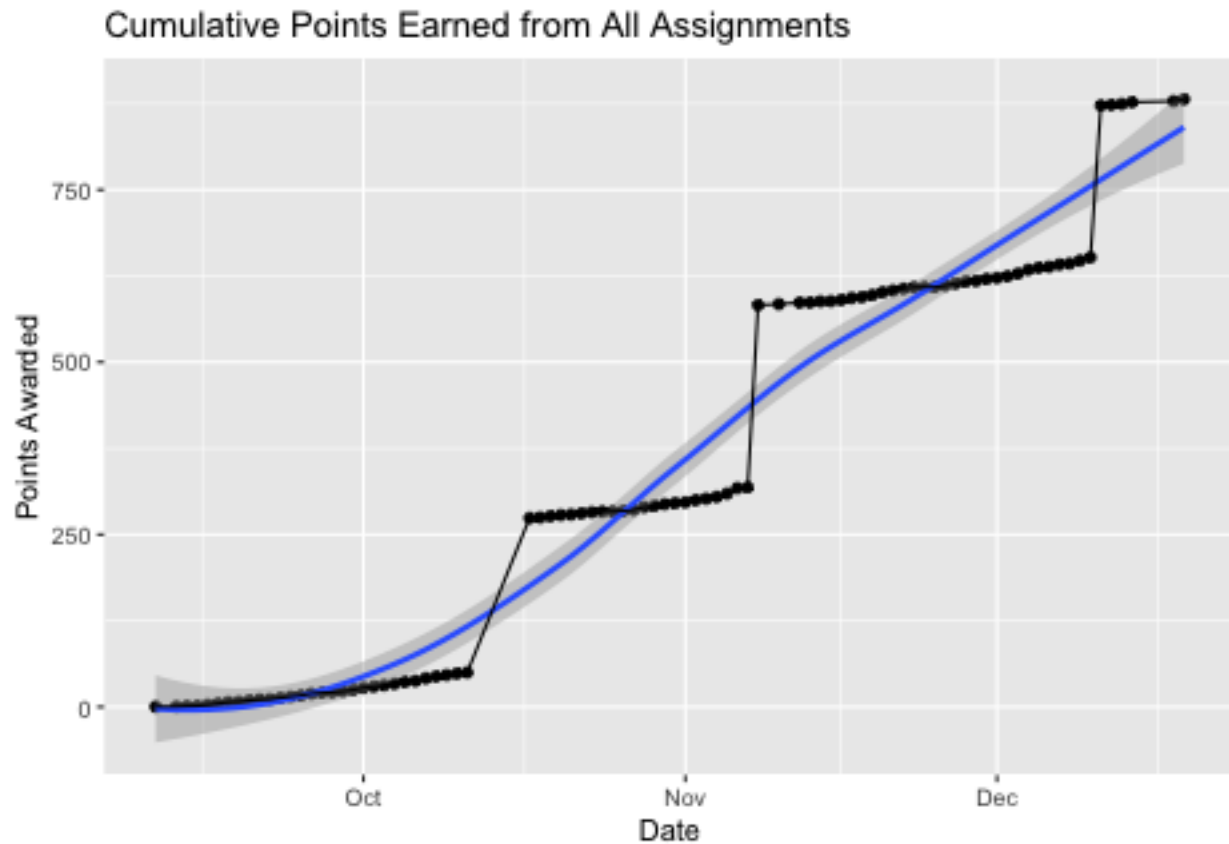
```
midterm.1 <- list(Date.Year=as.Date('2017-10-17'), Score=51*220)
midterm.2 <- list(Date.Year=as.Date('2017-11-08'), Score=51*262)
midterm.3 <- list(Date.Year=as.Date('2017-12-11'), Score=51*216)
```

```
dataset.midterms <-
  dataset %>%
  bind_rows(midterm.1) %>%
  bind_rows(midterm.2) %>%
  bind_rows(midterm.3)
```

```
sum.scores.mt <-
  dataset.midterms %>%
  arrange(Date.Year) %>%
  group_by(Date.Year) %>%
  summarize(Points.Awarded = sum(Score),
            Assignments.Graded = length(Score)) %>%
  mutate(Total.Points = cumsum(Points.Awarded))
```

```
ggplot(sum.scores.mt, aes(y=Total.Points/51,x=Date.Year)) +
  geom_point() +
```

```
geom_smooth() +
geom_line() +
labs(y="Points Awarded",
x="Date",
title="Cumulative Points Earned from All Assignments")
```



## Session Information

```
sessionInfo()

## R version 3.5.0 (2018-04-23)
## Platform: x86_64-apple-darwin15.6.0 (64-bit)
## Running under: macOS High Sierra 10.13.5
##
## Matrix products: default
## BLAS: /Library/Frameworks/R.framework/Versions/3.5/Resources/lib/libRblas.0.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/3.5/Resources/lib/libRlapack.dylib
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## attached base packages:
## [1] stats    graphics  grDevices  utils      datasets  methods   base
##
```

```

## other attached packages:
## [1] ggplot2_3.0.0   bindrcpp_0.2.2   lubridate_1.7.4   tidyr_0.8.1
## [5] dplyr_0.7.6     readr_1.1.1     knitr_1.20
##
## loaded via a namespace (and not attached):
## [1] Rcpp_0.12.17     highr_0.7        pillar_1.2.3     compiler_3.5.0
## [5] plyr_1.8.4       bindr_0.1.1      tools_3.5.0      digest_0.6.15
## [9] evaluate_0.10.1  tibble_1.4.2     gtable_0.2.0     nlme_3.1-137
## [13] lattice_0.20-35  pkgconfig_2.0.1  rlang_0.2.1      psych_1.8.4
## [17] parallel_3.5.0   yaml_2.1.19      withr_2.1.2      stringr_1.3.1
## [21] hms_0.4.2        rprojroot_1.3-2  grid_3.5.0       tidyselect_0.2.4
## [25] glue_1.2.0       R6_2.2.2         foreign_0.8-70   rmarkdown_1.10
## [29] reshape2_1.4.3   purrr_0.2.5      magrittr_1.5     backports_1.1.2
## [33] scales_0.5.0     htmltools_0.3.6  mnormt_1.5-5     assertthat_0.2.0
## [37] colorspace_1.3-2 labeling_0.3      stringi_1.2.3    lazyeval_0.2.1
## [41] munsell_0.5.0    broom_0.4.5

```