course-modes

```
## # A tibble: 92 x 16
##    check SUBJECT type  `online (fall)` `hybrid (fall)` `in-person (fal~
##    <chr> <chr>   <chr>           <dbl>           <dbl>            <dbl>
## 1  o     Air Fo~ depa~               0               4                0
## 2  x     Africa~ depa~              17               3                0
## 3  o     Art Hi~ Art ~               7               4                0
## 4  o     Visual~ Art ~               2              12                5
## 5  o     VMS:    Art ~              32              18                2
## 6  o     Asian ~ Asia~              28               7                0
## 7  o     Biolog~ depa~               0               6                9
## 8  o     Biomed~ depa~               0              11                0
## 9  o     Lat. A~ <NA>                6               1                0
## 10 o     Chemis~ depa~               4               5                0
## # ... with 82 more rows, and 10 more variables: `online (spring)` <dbl>,
## #   `hybrid (spring)` <dbl>, `in-person (spring)` <dbl>, `trinity/pratt` <chr>,
## #   `major/minor/cert/none` <chr>, `BS/BA/both` <chr>, ROTC <dbl>,
## #   language <dbl>, NOTES <chr>, `Additional Notes` <chr>
```

Data cleaning

```
## # A tibble: 92 x 33
##    check SUBJECT type  `online (fall)` `hybrid (fall)` `in-person (fal~
##    <chr> <chr>   <chr>           <dbl>           <dbl>            <dbl>
## 1  o     Air Fo~ depa~               0               4                0
## 2  x     Africa~ depa~              17               3                0
## 3  o     Art Hi~ Art ~               7               4                0
## 4  o     Visual~ Art ~               2              12                5
## 5  o     VMS:    Art ~              32              18                2
## 6  o     Asian ~ Asia~              28               7                0
## 7  o     Biolog~ depa~               0               6                9
## 8  o     Biomed~ depa~               0              11                0
## 9  o     Lat. A~ <NA>                6               1                0
## 10 o     Chemis~ depa~               4               5                0
## # ... with 82 more rows, and 27 more variables: `online (spring)` <dbl>,
## #   `hybrid (spring)` <dbl>, `in-person (spring)` <dbl>, `trinity/pratt` <chr>,
## #   `major/minor/cert/none` <chr>, `BS/BA/both` <chr>, ROTC <dbl>,
## #   language <dbl>, NOTES <chr>, `Additional Notes` <chr>, fall_online <dbl>,
## #   fall_hybrid <dbl>, fall_person <dbl>, spring_online <dbl>,
## #   spring_hybrid <dbl>, spring_person <dbl>, college <chr>, mmcn <chr>,
## #   degree <chr>, per_fall_online <dbl>, per_fall_hybrid <dbl>,
## #   per_fall_person <dbl>, per_spring_online <dbl>, per_spring_hybrid <dbl>,
## #   per_spring_person <dbl>, total_fall <dbl>, total_spring <dbl>
```

Analysis

Some subjects only offered online classes each semester

The following subjects only offered online classes in fall.

SUBJECT	per_fall_online	total_fall
Electrical & Computer Engineering:	1	15
Latino/a Studies in the Global South:	1	5
Sustainability Engagement:	1	1
Hindi:	1	4
French:	1	13
Italian:	1	8
Japanese:	1	3
Kiche:	1	2
Korean:	1	4
Persian:	1	2
Portuguese:	1	3
Spanish:	1	26
Urdu:	1	1
Child Policy:	1	1
Decision Sciences:	1	1
Biochem:	1	1

Of those, 11 subjects offered more than 1 class and 7 subjects offered 4+. Only 2 of these 11 subjects–ECE and Latino/a Studies in the Global South– are non-language subjects.

SUBJECT	per_fall_online	total_fall
Electrical & Computer Engineering:	1	15
Latino/a Studies in the Global South:	1	5
Hindi:	1	4
French:	1	13
Italian:	1	8
Japanese:	1	3
Kiche:	1	2
Korean:	1	4
Persian:	1	2
Portuguese:	1	3
Spanish:	1	26

The following subjects only offered online classes in spring.

SUBJECT	per_spring_online	total_spring
Lat. Am. & Caribbean Studies:	1	3
Computer Science:	1	23
Latino/a Studies in the Global South:	1	10
Romance Studies:	1	8
Sustainability Engagement:	1	2
Hindi:	1	4
Chinese:	1	11
Japanese:	1	4
Kiche:	1	2
Korean:	1	4
Latin:	1	4
Persian:	1	1
Portuguese:	1	4
Turkish:	1	4

SUBJECT	per_spring_online	total_spring
Spanish:	1	29
Urdu:	1	1
Biochem:	1	2
Arts and Science IDEAS	1	2

Of those, 11 subjects offered 4+ courses in the spring. Only 3 of these 11 subjects–CS, Romance studies and Latino/a Studies in the Global South–are non-language subjects.

SUBJECT	per_spring_online	total_spring
Computer Science:	1	23
Latino/a Studies in the Global South:	1	10
Romance Studies:	1	8
Hindi:	1	4
Chinese:	1	11
Japanese:	1	4
Korean:	1	4
Latin:	1	4
Portuguese:	1	4
Turkish:	1	4
Spanish:	1	29

SUBJECT	per_fall_online	total_fall
Electrical & Computer Engineering:	1.000	15
Latino/a Studies in the Global South:	1.000	5
Hindi:	1.000	4
French:	1.000	13
Italian:	1.000	8
Korean:	1.000	4
Spanish:	1.000	26
Computer Science:	0.950	20
Medieval & Renaissance Studies:	0.929	14
Chinese:	0.909	11
Mechanical Engineering:	0.875	16
Lat. Am. & Caribbean Studies:	0.857	7
Statistical Science:	0.857	14
African & African American Studies:	0.850	20
Mathematics:	0.833	30
Asian & Middle Eastern Studies:	0.800	35
Slavic and Eurasian Studies:	0.800	5
Evolutionary Anthropology:	0.778	9
Religious Studies:	0.778	27
German Studies:	0.750	12
Information Science + Studies:	0.750	12
Gender, Sexuality & Feminist Studies:	0.741	27
Writing:	0.735	34
Literature:	0.733	30
International Comparative Studies:	0.725	51
English:	0.714	35
History:	0.712	73

SUBJECT	per_fall_online	total_fall
Romance Studies:	0.700	10
Sociology:	0.684	38
Environmental Sciences and Policy:	0.639	36
Art History:	0.636	11
Study of sexualities:	0.625	8
VMS:	0.615	52
Neurosciences:	0.607	28
House Courses:	0.600	20
Psychology:	0.585	41
Classical Studies:	0.583	12
Jewish Studies Program:	0.583	12
Human Rights:	0.577	26
Earth and Ocean Sciences:	0.571	7
Markets & Management Studies:	0.571	7
Economics:	0.556	45
Policy, Journalism & Media Studies:	0.556	9
Public Policy Studies:	0.556	72
Global Health:	0.536	28
Theater Studies:	0.522	23
Cultural Anthropology:	0.500	32
Documentary Studies:	0.500	26
Arabic:	0.500	4
Latin:	0.500	4
Chemistry:	0.444	9
Philosophy:	0.438	16
Political Science:	0.420	50
Science & Society:	0.417	12
Innovation & Entrepreneurship:	0.375	16
Physics:	0.375	16
Ethics:	0.350	20
Education:	0.348	23
Dance:	0.304	23
Music:	0.268	82
Civil & Environmental Engineering:	0.250	8
Linguistics:	0.250	8
Health, Physical Education, & Recreation:	0.208	24
Russian:	0.200	10
Visual Arts:	0.105	19
Air Force ROTC:	0.000	4
Biology:	0.000	15
Biomedical Engineering:	0.000	11
Military Science, Army ROTC:	0.000	7
Naval Science, Navy ROTC:	0.000	10

SUBJECT	per_spring_online	total_spring
Computer Science:	1.000	23
Latino/a Studies in the Global South:	1.000	10
Romance Studies:	1.000	8
Hindi:	1.000	4
Chinese:	1.000	11
Japanese:	1.000	4

SUBJECT	per_spring_online	total_spring
Korean:	1.000	4
Latin:	1.000	4
Portuguese:	1.000	4
Turkish:	1.000	4
Spanish:	1.000	29
Mathematics:	0.944	36
Literature:	0.938	32
Medieval & Renaissance Studies:	0.938	16
French:	0.933	15
Italian:	0.933	15
Statistical Science:	0.923	13
Information Science + Studies:	0.889	18
Religious Studies:	0.875	24
Electrical & Computer Engineering:	0.864	22
Sociology:	0.846	39
African & African American Studies:	0.842	38
Mechanical Engineering:	0.833	12
Art History:	0.824	17
Asian & Middle Eastern Studies:	0.811	37
History:	0.810	79
Writing:	0.806	36
Gender, Sexuality & Feminist Studies:	0.793	29
Human Rights:	0.781	32
VMS:	0.778	72
English:	0.761	46
Jewish Studies Program:	0.750	8
Psychology:	0.744	43
Documentary Studies:	0.735	34
Evolutionary Anthropology:	0.727	11
Global Health:	0.714	21
Science & Society:	0.700	10
Physics:	0.684	19
International Comparative Studies:	0.678	59
House Courses:	0.667	36
Cultural Anthropology:	0.642	53
Economics:	0.630	46
Neurosciences:	0.611	18
Public Policy Studies:	0.600	80
Arabic:	0.600	5
Environmental Sciences and Policy:	0.590	39
Political Science:	0.579	38
Education:	0.562	16
Markets & Management Studies:	0.556	9
Biology:	0.542	48
Innovation & Entrepreneurship:	0.533	15
German Studies:	0.500	14
Linguistics:	0.500	16
Slavic and Eurasian Studies:	0.500	4
Philosophy:	0.500	12
Earth and Ocean Sciences:	0.455	11
Theater Studies:	0.455	22
Classical Studies:	0.444	9

SUBJECT	per_spring_online	total_spring
Ethics:	0.429	21
Visual Arts:	0.387	31
Policy, Journalism & Media Studies:	0.333	6
Health, Physical Education, & Recreation:	0.318	22
Music:	0.313	99
Chemistry:	0.308	13
Civil & Environmental Engineering:	0.250	12
Dance:	0.240	25
Russian:	0.200	15
Biomedical Engineering:	0.118	17
Air Force ROTC:	0.000	4
Military Science, Army ROTC:	0.000	7
Naval Science, Navy ROTC:	0.000	8

- percent online, hybrid, in person for every subject

- percent online, hybrid, in person for every subject affiliated w a dept

- percent online, hybrid, in person for every subject that's ROTC

- fall vs. spring for ROTC (no online, more in person in spring)

SUBJECT	per_fall_online	per_fall_hybrid	per_fall_person	total_fall
Air Force ROTC:	0	1.000	0.000	4
Military Science, Army ROTC:	0	0.571	0.429	7
Naval Science, Navy ROTC:	0	1.000	0.000	10

SUBJECT	per_spring_online	per_spring_hybrid	per_spring_person	total_spring
Air Force ROTC:	0	0.000	1.000	4
Military Science, Army ROTC:	0	0.000	1.000	7
Naval Science, Navy ROTC:	0	0.125	0.875	8

- percent online, hybrid, in person for every subject that's a major

SUBJECT	per_fall_online	per_fall_hybrid	per_fall_person	total_fall	degree
Biomedical Engineering:	0.000	1.000	0.000	11	BSE
Civil & Environmental Engineering:	0.250	0.750	0.000	8	BSE
Linguistics:	0.250	0.750	0.000	8	BA
Music:	0.268	0.646	0.085	82	BA
Visual Arts:	0.105	0.632	0.263	19	BA
Physics:	0.375	0.625	0.000	16	both
Russian:	0.200	0.600	0.200	10	BA
Philosophy:	0.438	0.562	0.000	16	BA
Chemistry:	0.444	0.556	0.000	9	both
Political Science:	0.420	0.480	0.100	50	BA
Theater Studies:	0.522	0.478	0.000	23	BA
Cultural Anthropology:	0.500	0.469	0.031	32	BA
Economics:	0.556	0.444	0.000	45	both
Dance:	0.304	0.435	0.261	23	BA
Classical Studies:	0.583	0.417	0.000	12	BA

SUBJECT	per_fall_online	per_fall_hybrid	per_fall_person	total_fall	degree
Public Policy Studies:	0.556	0.403	0.042	72	BA
Biology:	0.000	0.400	0.600	15	both
Psychology:	0.585	0.390	0.024	41	both
Art History:	0.636	0.364	0.000	11	BA
VMS:	0.615	0.346	0.038	52	BA
Romance Studies:	0.700	0.300	0.000	10	BA
Earth and Ocean Sciences:	0.571	0.286	0.143	7	both
English:	0.714	0.286	0.000	35	BA
History:	0.712	0.274	0.014	73	BA
Sociology:	0.684	0.263	0.053	38	BA
International Comparative Studies:	0.725	0.255	0.020	51	BA
Environmental Sciences and Policy:	0.639	0.250	0.111	36	BA
German Studies:	0.750	0.250	0.000	12	BA
Neurosciences:	0.607	0.250	0.143	28	both
Literature:	0.733	0.233	0.033	30	BA
Evolutionary Anthropology:	0.778	0.222	0.000	9	both
Asian & Middle Eastern Studies:	0.800	0.200	0.000	35	BA
Slavic and Eurasian Studies:	0.800	0.200	0.000	5	BA
Religious Studies:	0.778	0.185	0.037	27	BA
Mathematics:	0.833	0.167	0.000	30	both
African & African American Studies:	0.850	0.150	0.000	20	BA
Statistical Science:	0.857	0.143	0.000	14	both
Mechanical Engineering:	0.875	0.125	0.000	16	BSE
Gender, Sexuality & Feminist Studies:	0.741	0.111	0.148	27	BA
Medieval & Renaissance Studies:	0.929	0.071	0.000	14	BA
Computer Science:	0.950	0.050	0.000	20	both
Electrical & Computer Engineering:	1.000	0.000	0.000	15	BSE

SUBJECT	per_spring_online	per_spring_hybrid	per_spring_person	total_spring	degree
Civil & Environmental Engineering:	0.250	0.667	0.083	12	BSE
Music:	0.313	0.586	0.101	99	BA
Classical Studies:	0.444	0.556	0.000	9	BA
Theater Studies:	0.455	0.545	0.000	22	BA
Biomedical Engineering:	0.118	0.529	0.353	17	BSE
German Studies:	0.500	0.500	0.000	14	BA
Philosophy:	0.500	0.500	0.000	12	BA
Russian:	0.200	0.467	0.333	15	BA
Earth and Ocean Sciences:	0.455	0.455	0.091	11	both
Environmental Sciences and Policy:	0.590	0.385	0.026	39	BA
Biology:	0.542	0.375	0.083	48	both
Linguistics:	0.500	0.375	0.125	16	BA
Visual Arts:	0.387	0.355	0.258	31	BA
Economics:	0.630	0.348	0.022	46	both
Public Policy Studies:	0.600	0.325	0.075	80	BA
Dance:	0.240	0.320	0.440	25	BA
Chemistry:	0.308	0.308	0.385	13	both
Political Science:	0.579	0.289	0.132	38	BA
International Comparative Studies:	0.678	0.271	0.051	59	BA

SUBJECT	per_spring_online	per_spring_hybrid	per_spring_person	total_spring	degree
Physics:	0.684	0.263	0.053	19	both
Slavic and Eurasian Studies:	0.500	0.250	0.250	4	BA
Cultural Anthropology:	0.642	0.245	0.113	53	BA
English:	0.761	0.239	0.000	46	BA
Neurosciences:	0.611	0.222	0.167	18	both
Evolutionary Anthropology:	0.727	0.182	0.091	11	both
History:	0.810	0.177	0.013	79	BA
Art History:	0.824	0.176	0.000	17	BA
Mechanical Engineering:	0.833	0.167	0.000	12	BSE
Psychology:	0.744	0.163	0.093	43	both
Asian & Middle Eastern Studies:	0.811	0.162	0.027	37	BA
VMS:	0.778	0.139	0.083	72	BA
Gender, Sexuality & Feminist Studies:	0.793	0.138	0.069	29	BA
African & African American Studies:	0.842	0.105	0.053	38	BA
Electrical & Computer Engineering:	0.864	0.091	0.045	22	BSE
Sociology:	0.846	0.077	0.077	39	BA
Statistical Science:	0.923	0.077	0.000	13	both
Medieval & Renaissance Studies:	0.938	0.062	0.000	16	BA
Mathematics:	0.944	0.056	0.000	36	both
Religious Studies:	0.875	0.042	0.083	24	BA
Literature:	0.938	0.031	0.031	32	BA
Computer Science:	1.000	0.000	0.000	23	both
Romance Studies:	1.000	0.000	0.000	8	BA

(maybe do some sort of test to see if degree and percent hybrid are related)

- percent online, hybrid, in person for every subject that's not a major
- percent online, hybrid, in person for every subject that's a BA
- percent online, hybrid, in person for every subject that's a BSE
- percent online, hybrid, in person for every subject that's both (BA/BS)
- fall vs. spring for languages