Beautiful Patterns Curriculum

**CONFIDENTIAL - FOR INSTRUCTORS ACCEPTED TO THE COURSE ONLY**

**Curriculum, schedule and resources for each day**

[https://dreamgrande.io/workshop/](https://owa.exchange.mit.edu/owa/redir.aspx?C=F8nPf1LR_RNlPwnKejn7yfaK-ebTmsRaMIQqX7wepZVnRwQwDtvWCA..&URL=https%3a%2f%2fdreamgrande.io%2fworkshop%2f)​

This year’s curriculum, daily schedule, past lecture’s slides, more content than last year

(*Last year’s instructors*: download this again!)

**Guidance and structure videos for each day:**

* Monday video - bit.ly/BP-Course-Day1
* Tuesday video - bit.ly/BP-Course-Day2
* Wednesday video - bit.ly/BP-Course-Day3
* Thursday video - bit.ly/BP-Course-Day4
* Friday
  + Half of AM: students finish final projects;
  + Rest of AM and half of PM: final project presentations;
  + Rest of PM: instructors and TAs tell class about themselves, their background and motivations for studying STEM; country-wide closing ceremony.

**Example of past instructor slides**

* English slides: (Olivia Waring)
  + Day 1: <https://docs.google.com/presentation/d/1NhzbhBQ-6A95-lPDd3_rDkf3Chv3rozKPpmwJ31ZeII/edit?usp=sharing>
  + Day 2: <https://docs.google.com/presentation/d/1CXNx41373rjEkYg4IWxNKEkrKaaC4UPZzLa2EM5h5Ak/edit?usp=sharing>
  + Day 3: <https://docs.google.com/presentation/d/1hGQYVmDGl6LFjV_0FqXNg3qGKIvWQ4xon6xi7C_GTkE/edit?usp=sharing>
  + Day 4: <https://docs.google.com/presentation/d/1FsqHfsQ-FpYC58tkZmai0s3S58s0RHatL2zdusXgaMg/edit?usp=sharing>
  + Day 5: <https://docs.google.com/presentation/d/1bfgsHBesMq8hE-Nheo-XfViGEKE-Uh7hmT5cn8kP2Lo/edit#slide=id.g3b88539e5f_0_145>
* Spanish slides: [bit.ly/patrones-hermosos-kasturi](http://bit.ly/patrones-hermosos-kasturi) (Kasturi Shah)
  + This includes how to open a console in Google Chrome and code in it

**Research-focussed data collection in classroom**

Collaborative wall

Every day, your classroom will have a big chart paper provided by the faculty at the campus you are based at. Each day you and your TA’s will write a new question on the chart paper in the morning and leave it there until the end of the day. Please tell your students what the question is for today and that they can come up to the chart paper at any time and answer it anonymously. There will also be post-its for the students to write their answers on.

Student reflections

* Students to video themselves answering the following questions for one-minute at the end of class.
* If you prefer them to fill out a form, they can fill out this form (same questions): <http://bit.ly/BP-Pensamientos-Estudiantes-2019>

However based on last year, the response rate goes down and filming a video is less tiring than typing in a form.

See the table below summarising classroom activities to be conducted each day:

|  |  |
| --- | --- |
| Day | Activity |
| Monday May 27, Day 1 | Draw an engineer task  Pass out a blank sheet of paper to each student, and write on the board (English & Spanish): “Draw an engineer. Then in words, describe the engineer that you drew.” Make sure students write their names on the paper, collect them, and upload pictures of them to Dropbox [link TBD]  Collaborative wall question:  *If you have the chance to write a book, what would it be about?* [*¿Si tuvieras la oportunidad de escribir un libro, de que se trataría?]*  Student reflections:   * In a single sentence, what were you most confused about today? / ¿qué es lo que menos entendiste, lo más te confundío, el dia hoy? * Reflect on your thinking, learning, and work today. What were you most proud of? / Piensa sobre tu trabajo el dia de hoy. ¿De qué estas de que estas mas orgullosa? |
| Tuesday, May 28, Day 2 | Collaborative wall question:  *What are you nervous about this week?* [*¿Sobre qué estás nerviosa esta semana?]*  Student reflections:   * In a single sentence, what were you most confused about today? / ¿qué es lo que menos entendiste, lo más te confundío, el dia hoy? * What was a challenging moment of today? What made it challenging, and what would you do differently next time? / ¿Cuál fue un momento desafiante de hoy? ¿Qué lo hizo desafiante, y qué harías diferente la próxima vez? |
| Wednes., May 29, Day 3 | Collaborative wall question:  *What problems could patterns help solve in the real world?* [*¿Que problemas de la vida real podrían ser solucionadas por patrones?*]  Student reflections:   * In a single sentence, what were you most confused about today? / ¿qué es lo que menos entendiste, lo más te confundío, el dia hoy? * What made you curious today? What might you do to learn more about it? / ¿Qué te dio curiosidad hoy? ¿Qué podrías hacer para aprender mas al respecto? |
| Thursday, May 30, Day 4 | Collaborative wall question:  *What was your favorite part of yesterday?* [*¿Cuál fue la parte del día de ayer que más te gustaba?]*  Student reflections:   * In a single sentence, what were you most confused about today? / ¿qué es lo que menos entendiste, lo más te confundío, el dia hoy? * Thinking about this entire week and your team project, what are your goals for yourself and for your team by tomorrow? / Piensa en toda esta semana y en tu proyecto de equipo, ¿cuáles son tus metas y cuales son las metas pare tu equipo? |
| Friday, May 31, Day 5 | Collaborative wall question:  *Thinking about your final project, what are you most proud of or excited about?* [*¿Pensando en tu proyecto final, qué te enorgullece más o qué te emociona sobre lo mismo?*]  Student reflections:   * In a single sentence, what were you most confused about today? / ¿qué es lo que menos entendiste, lo más te confundío, el dia hoy? * Reflect on this entire week. What was the most powerful learning moment or experience for you? What did you learn, and what made it powerful? / Piensa sobre toda esta semana. ¿Cuál fue el momento o experiencia de aprendizaje más impactante para ti? ¿Qué aprendiste y qué lo hizo impactante? |

**Research-focussed data collection outside classroom**

Instructors and TAs reflections

* You should individually fill out this short reflections survey each day, link here: <http://bit.ly/BP-Instructor-Reflections-2019>
* We also encourage you strongly to debrief with your TAs at the end of the day, discussing what went well, what needs repetition tomorrow, which students need more guidance, plan for tomorrow, etc.

Pre/Post Course Surveys

This is not administered by our instructors (i.e. you do not have to do anything), but just as a general announcement, we do send short online surveys the students and parents both before and after the course. The aim of this is to see any shifts in perception of women in STEM/coding and to further assess what has been learnt.

**General Advice/Observations:**

* The final project is a source of stress for your students that mounts from Thursday onwards. Thursday afternoon is reserved for students to finish the projects and practice their presentations. Make sure to talk at length with each group about what the specific pattern/algorithm they propose to implement, what the inputs/outputs will be, how they would collect this data etc.
* If students experience trouble at school or fall sick, we recommend you let your TA’s deal with that. They are all very experienced and understand the school system in the city in which you are placed. This frees you up to keep teaching the rest of the class. Make sure to check in with them periodically if you sense something is going on!
* Engage your students! Walk around the classroom, do live demos of code, have students shout out answers … avoid the lecture format, if possible. They love this course because it is not school, so feel free to explore teaching techniques!