

# **Education Meeting Agenda Item: On-site teaching of Data Science certificate courses**

## **1. Requesters**

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## **2. Background**

The CS Department currently offers a four course Graduate Certificate in Data Science. The four courses (CMSC 641-4) are currently offered on campus, each meeting once a week for 3 hours according to the regular academic calendar. We have established conversation with companies, Capital One in particular, discussing the certificate and options for their employees taking these courses. One consistent request we have heard is the possibility of offering versions of these courses on-site.

## **3. Purpose**

The purpose of this agenda item is to discuss and vote on moving forward with the possibility of offering these courses on-site. If positive, a formal proposal to campus will be prepared and presented for approval to Education Committee at a later time. We also request opinion and discussion on possible delivery formats for these courses. The on-campus certificate program and course content for its four courses are in place and approved, and thus not the purpose of the vote in this meeting.

## **4. Format options**

Students from industry partners seeking certification would need to complete these four courses, each delivered in a manner that ensures the same instructional time as the current on-campus offerings (3 hours per week, regular 14 week academic calendar).

#### **4.1 On-site only**

The four courses would be offered in 3 hour weekly sessions following the regular academic calendar (14 weeks). They would be offered on-site, or an alternate off-campus location, e.g., Shady Grove campus. Projects and assignments are completed both in-class and off-class time as is current practice for on-campus courses.

#### **4.2 Online/in-person blended with high frequency**

Some of the course content is delivered via online lectures along with in-person lectures (on-site or alternate off-campus location). In-person lecture/lab bi-weekly sessions of 3-6 hours each, depending on course length. Project and assignments are completed both in-class and off-class time.

#### **4.3 Online/in-person blended with low frequency discussion**

The majority of course content is delivered via online lectures. In-person sessions (on-site or alternate off-campus location) are strictly discussion and lab sessions. In-person bi-weekly or monthly sessions of 5 hours each, depending on course length. Project and assignments are completed both in-class and off-class time.

#### **4.4 Online/in-person blended with low frequency lectures**

A portion of course content is delivered via online lectures. In-person lectures (on-site or alternate off-campus location) will include discussion but no lab sessions. In-person bi-weekly or monthly sessions of 5 hours each, depending on course length. Project and assignments are completed strictly off-class time.

### **5. Other campus efforts**

The CMNS Science Academy will be pursuing this option as well, so we will have to coordinate with them. Note, however, that their current proposals to PCC do not cover this. For the CS department to offer this to industry partners, a formal proposal will need to be prepared for campus, and will only move forward with formal approval of CS Education Committee.

## Additional Material

- Certificate program information:
  - <https://www.cs.umd.edu/data-science>
  - <https://oes.umd.edu/graduates-post-baccalaureates-professionals/professional-graduate-programs/data-science>
- Certificate courses:
  - CMSC641 Principles of Data Science
  - CMSC642 Big Data Systems
  - CMSC643 Machine Learning and Data Mining
  - CMSC644 Algorithms for Data Science