

Creating Synergies among Institutions in Higher and Continuing Education:

Flipped Classrooms and Project-Based Learning with Open edX

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Isabelle Druet - Project Manager

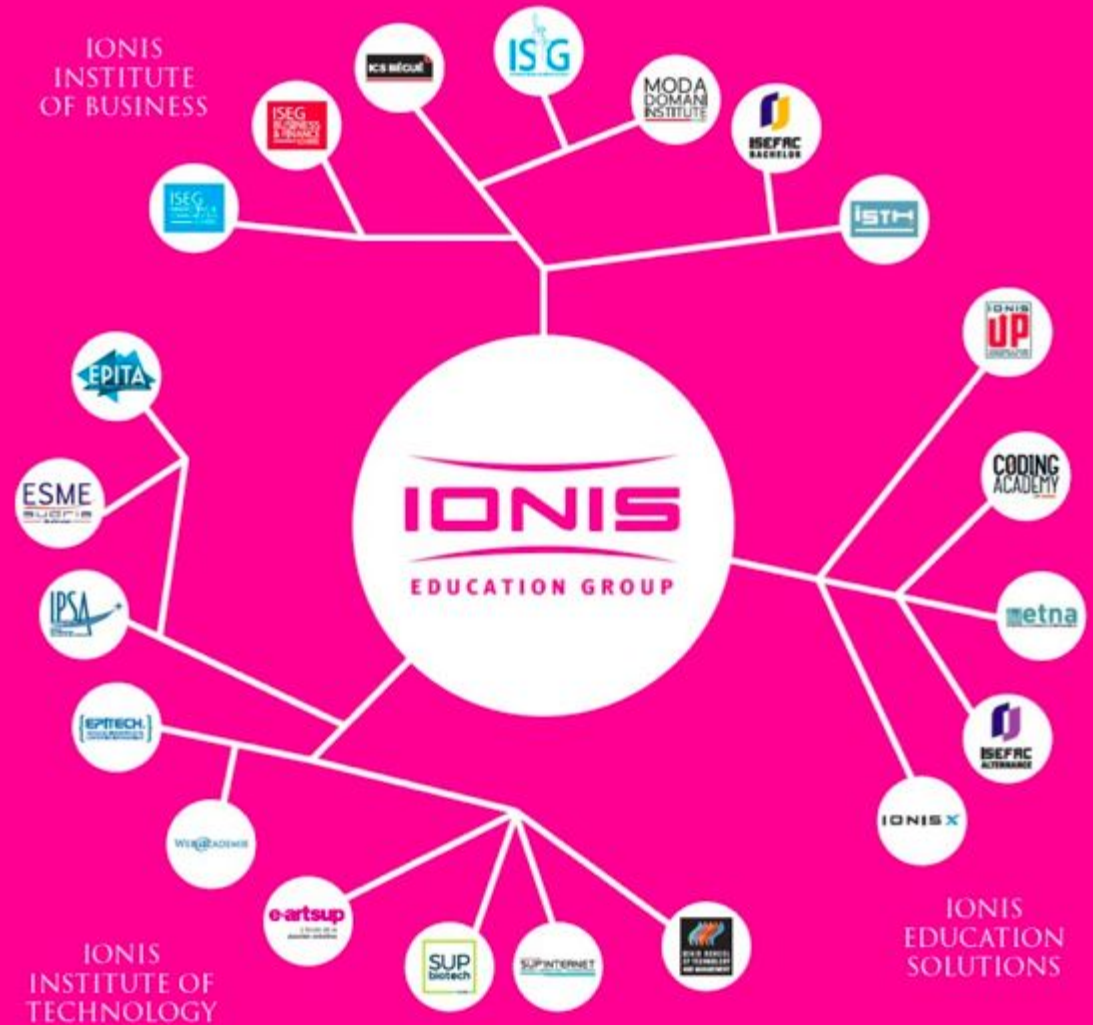
Madrid, Open edX Conference, May 2017

IONISX

IONISx, the online branch of IONIS Education Group

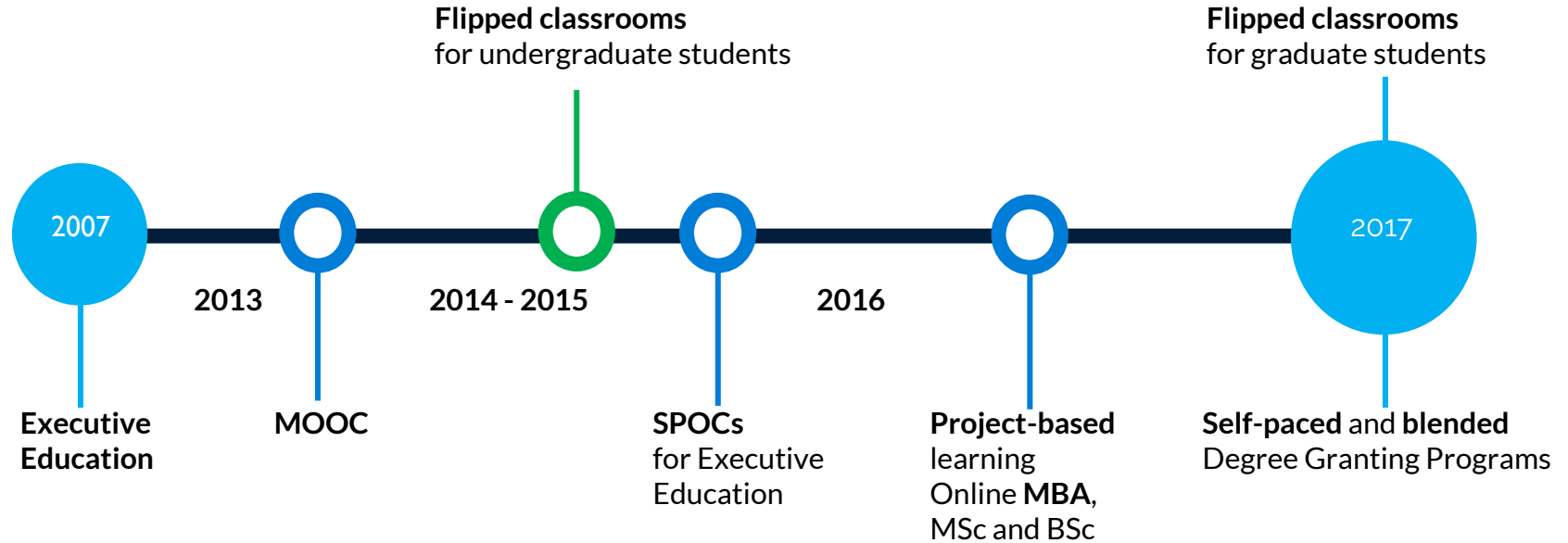
- 25,000 students
- 22 schools
- 12 cities in France
- 65,000 alumni

France Leading Private Higher Education Group



From MOOCs to Degree-Granting Programs

Continuing Education Higher Education



Sharing experience, tools & processes

1. Enabling synergies among institutions:
Flipped classrooms for undergraduate students
 2. From higher education to lifelong learning:
Project-based learning for working professionals
- Keys to success & new needs

1. Flipped classrooms

To enable synergies among institutions



Flipped classrooms in practice:

- Customise the angle of the course - both online and in class.
- Vary the type of learning - alternating between distance and face-to-face.
- Avoiding passive lectures - devote class time to interactions & experimentations.



4 Engineering schools:



Common Content in **Maths, Physics and I.T.** Curriculum

Specialisations:

Generalist

Biotechnology

Aeronautics

Information
Technologies

The scenario solution : Standardise online components while allowing for specialisation online and in class

| Code MIMO | Chapitre | Notion (Titre du MIMO) | Niveau | | | |
|-----------|--------------------------------------|---|--------|------|------|--------------|
| | | | EPITA | IPSA | ESME | Sup' Biotech |
| SN1 | Séries numériques | Généralités sur les séries numériques | S3 | S4 | S3 | 0 |
| SN2 | Séries numériques | Séries à termes positifs (1/2) | S3 | S4 | S3 | 0 |
| SN3 | Séries numériques | Séries à termes positifs (2/2) | S3 | S4 | S3 | 0 |
| SN4 | Séries numériques | Séries à termes quelconques | S3 | S4 | S3 | 0 |
| DMC1 | Diagonalisation des matrices carrées | Déterminant d'une matrice carrée - Définition | S3 | S3 | S4 | S3 |
| DMC2 | Diagonalisation des matrices carrées | Déterminant d'une matrice carrée - Applications | 0 | S3 | S4 | S3 |
| DMC3 | Diagonalisation des matrices carrées | Généralités sur la diagonalisation des matrices carrées | S3 | S3 | S4 | S3 |

| Code MIMO | Chapitre | Notion (Titre du MIMO) | Niveau | | | |
|-----------|---------------------|--|--------|------|------|--------------|
| | | | EPITA | IPSA | ESME | Sup' Biotech |
| CD5 | Calcul différentiel | Différentiabilité des fonctions de 2 variables à valeurs réelles | 0 | S3 | S4 | S4 |
| CD6 | Calcul différentiel | Extrema locaux d'une fonction de 2 variables | S4 | S3 | S4 | S4 |
| CD7 | Calcul différentiel | Différentiabilité d'une fonction vectorielle | 0 | S3 | S3 | S4 |
| CD8 | Calcul différentiel | Introduction aux EDP : le problème de transport. | 0 | 0 | S3 | 0 |
| AC1 | Analyse complexe | Fonctions holomorphes. | 0 | 0 | S4 | 0 |
| AC2 | Analyse complexe | Intégration le long d'un chemin de C. | 0 | 0 | S4 | 0 |
| P1 | Probabilités | Généralités sur les probabilités | 0 | 0 | S4 | S4 |
| P2 | Probabilités | Variables aléatoires réelles et lois de probabilité usuelles. | 0 | 0 | S4 | S4 |
| P3 | Probabilités | Inégalités et théorèmes limites classiques. | 0 | 0 | S4 | 0 |
| SE1 | Séries entières | Généralités sur les séries entières | 0 | S4 | S3 | 0 |

Creating independent micro-modules to take advantage of possible synergies

| | | | | | | |
|------|------------------------------|--|----|----|----|---|
| I12 | Intégrales impropres | Intégrales impropres de fonctions positives | S3 | S4 | S3 | 0 |
| I13 | Intégrales impropres | Autres critères | S3 | S4 | S3 | 0 |
| I14 | Intégrales impropres | Convergence absolue d'une intégrale impropre | S3 | S4 | S3 | 0 |
| EPR1 | Espaces préhilbertiens réels | Généralités sur les espaces préhilbertiens réels | S4 | S3 | 0 | 0 |

| | | | | | | |
|-----------------------------|-------------------------------------|-------------------------|-----------|-----------|-----------|-----------|
| IM1 | Intégrales multiples et curvilignes | Formes différentielles | 0 | S3 | S4 | S4 |
| IM2 | Intégrales multiples et curvilignes | Intégrales multiples | 0 | S3 | S4 | S4 |
| IM3 | Intégrales multiples et curvilignes | Intégrales curvilignes. | 0 | S3 | S4 | S4 |
| Nombre de MIMO total | | | 32 | 29 | 32 | 12 |

Revenir au cours Start with the raw data

Contenu du cours Wiki Progression Instructeur

Start with the raw data

Objectives and Content

Collecting Data Learning and Training


Coding the possible values of the variables Learning and Training

Data File Learning and Training

Synthesis

Evaluation Self-Evaluation

Collecting data



6:00 / 3:45

Training: Question 1 (1 point possible)

Check right sentences:

- A single individual is statistical unit of the study in a row.
- A individual mix is the statistical unit of the study in a row.
- A multiple item in a single column.
- A item in a single column.

Revenir au cours Start with the raw data

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Evaluation Self-Evaluation

Define the type

- Binary qualitative variable
- Continuous quantitative variable
- Nominal qualitative variable
- Ordinal qualitative variable

And the missing value

- NA
- 99.999...

Valider Afficher la réponse

Vous avez utilisé 0 essais sur 1

HISTORIQUE DES SOUSSIONS INFO DE DÉ

Congratulation, you finished this course!

Evaluez votre niveau de compréhension

★★★★★

Evaluez la qualité de ce cours

★★★★★

Terminer ce module et revenir au cours

Start with the raw data

Programmé : 01 janv 2020, à 00:00 UTC

Objectives and Content

Programmé : 01 janv 2020, à 00:00 UTC

Collecting Data

Programmé : 01 janv 2020, à 00:00 UTC

Learning and Training

Coding the possible values of the variables

Programmé : 01 janv 2020, à 00:00 UTC

Learning and Training

Data File

Programmé : 01 janv 2020, à 00:00 UTC

Learning and Training

Synthesis

Programmé : 01 janv 2020, à 00:00 UTC

Evaluation

Programmé : 01 janv 2020, à 00:00 UTC

Self-Evaluation

New Sou

A typical 30-minute module

- Content & objectives
- Videos
- Training exercises with solutions
- Summary in pdf format
- Additional content and links to explore
- Self-evaluation quiz
- Feedback component for quality

Revenir au cours Start with the raw data

Contenu du cours Wiki Progression Instructeur

Start with the raw data

Objectives and Content

Collecting Data Learning and Training

Coding the possible values of the variables Learning and Training

Data File Learning and Training

Synthesis

Evaluation Self-Evaluation

Synthesis

UNIVARIATE ANALYSIS
START WITH THE RAW DATA

COLLECTING DATA

All data should go into a single data file or instructions.

The quality control of the initial data is essential for the analysis.

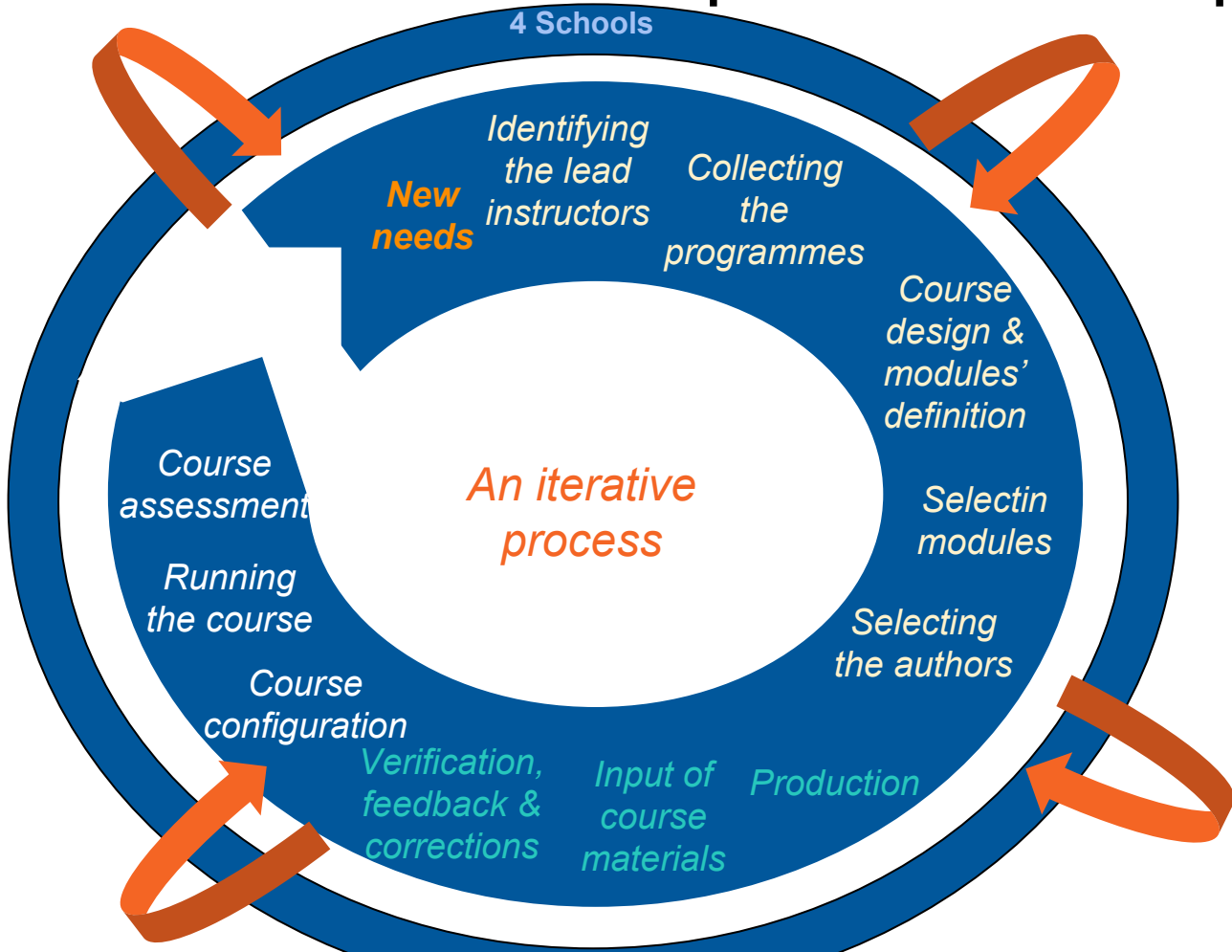
- Responsibility of the investigator rather than statisticians.
- Initial collection of the data.
- Deliver and validate the "raw" data of the analysis: "Data File"

All the data required for the analysis gathered in a single file.

Basic data = 8 Eqs.

1. Define statistical unit of the study.
2. A single individual observation = Statistical unit of the study in a row.
3. A item feature (of critical data is questionnaire) in a single column.
4. All values are coded in numeric way = answers have to be coded.

High level of coordination for the conception and selection process



Navigating in our shared production dashboard

| Description | | | | | Selection by each School + Semester planning | | | | Author | Production Status | | | | | Link | Review |
|-------------|---------|---------|---------------------|---|--|----------|----------|----------|----------|--------------------------|-------------|--------------|--------------|--------------|-------------------------------|--------------------|
| Reference | Chapter | Module | Objectives & skills | Content | School 1 | School 2 | School 3 | School 4 | Author | Status | Preparation | Shooting | Input | Release | Link to Prof | Corrections needed |
| C1 1 | Chap1 | Title A | Being able to... | Context of ... Definition of... Application to... | S1 | S2 | S1 | S2 | Author 1 | Last action & next steps | Done | Done | In process | Planned week | Link module A | Corrections needed |
| C1 2 | Chap1 | Title B | | | S1 | S2 | S1 | | Author 1 | | Done | Done | In process | Planned week | Link module B | |
| C1 3 | Chap1 | Title C | | | | S2 | S1 | S2 | Author 1 | | In process | Planned week | Planned week | Planned week | Link module C | |
| C2 1 | Chap2 | Title D | | | S1 | S2 | | S2 | Author 2 | Last action & next steps | | | | | | |
| C2 2 | Chap2 | Title E | | | S1 | S2 | | | Author 2 | | | | | | | |

T224 – Algorithmique S3-S4 (Intégral)

Réinitialiser... Dupliquer Rendre obsolète Voir le Parcours

Description Détails Accès Apprenants Certifications Staff Composants

Titre * 30/50
Algorithmique S3-S4 (Intégral)

Description courte

Publication 16/06/2016

Les modules précédents doivent être terminés pour accéder aux suivants

Inverser la numérotation des modules et des chapitres

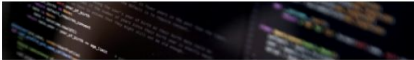
Catégorie Sciences & Technologies

Mots-clés 1/3
algo x Ajouter un mot-clé


Description détaillée


Édition Aperçu

Produits débloquant l'inscription
L'inscription à ce parcours ne nécessite aucun produit.
Modifier

Image de couverture 1920x270

<https://files.ionisx.com/resources/course/5762b5263a6f80285f9687d2/cover-14>

Vignette bloc (new) 280x160
Uploader une image...

Vignette contenu du cours 130x130
 <https://files.ionisx.com/resources/course/5762b5263a6f80285f9687d2/th>

Open Graph (Facebook, LinkedIn, Google) 1200x630
 <https://files.ionisx.com/resources/course/5762b5263a6f80285f9>

T224 – Algorithmique S3-S4 (Intégral)

Réinitialiser... Dupliquer Rendre obsolète Voir le Parcours

Description Détails Accès Apprenants Certifications Staff Composants

1 Méthodes de hachage
modifier - supprimer

2 M1126 – Hachage : principe et méthodes de base
paramètres - modifier - supprimer

3 M1289 – Hachage : résolution des collisions par chaînage
paramètres - modifier - supprimer

4 M1290 – Hachage : résolution des collisions par calcul

74 Mimos

Nouveau

Filtres

Afficher uniquement les Mimos non-atomiques

Rechercher algo

| # | Titre | Description |
|-------|-----------------------------------|--------------------------------|
| M2138 | Jointures | bdd - algo - sqj |
| M2137 | Ordre et regroupement | bdd - algo - sqj |
| M2136 | Introduction aux bases de données | bdd - algo - sqj |
| M2107 | Algorithme Neighbor-Joining | arbres - phylogénétique |
| M1852 | Algorithmes U/W-PGMA | arbres - phylogénétique - algo |

IONISX

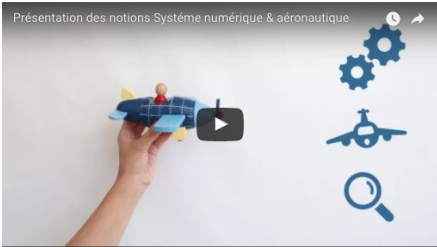
Isabelle Druet

Rechercher un cours

Fabien Bonnefoi

Intérêt des notions : Pourquoi étudier l'informatique en aéronautique ?

Présentation des notions Système numérique & aéronautique



1 Introduction à la programmation

Course configuration with skills' indexed modules, chapters, introductory videos, authors' bios...

Flipped classrooms with Open edX : key takeaways

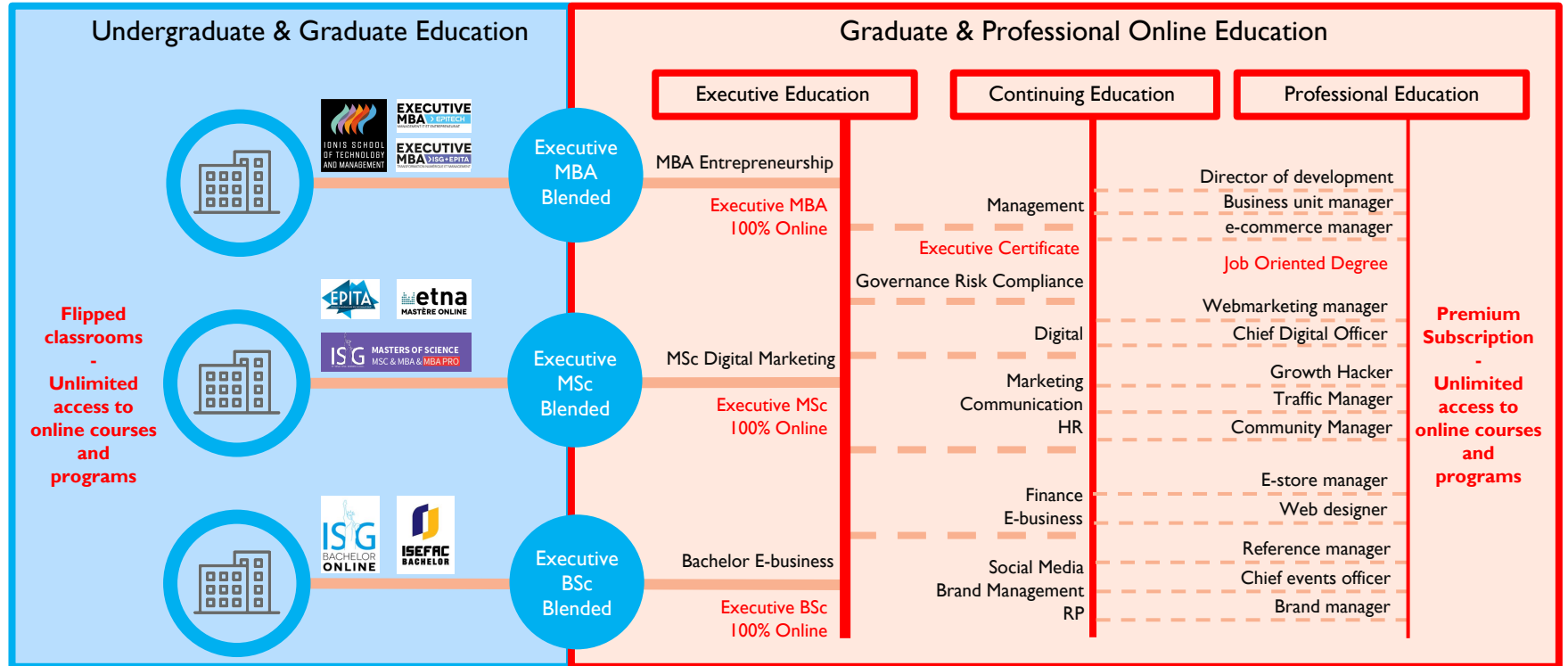
After 3 years, we've established a successful model for:

- Collaborating with teachers from different institutions and animating the community (collaboration tools, the role of the lead instructors, the course authors, the pedagogical coordinator...)
 - Splitting courses into small, independent units.
 - Organising flipped classrooms for undergraduates.
- Using the benefits of edX to create synergies for several institutions who want to use content that is similar but not exactly the same.

2. Project-based learning

From higher education to lifelong learning

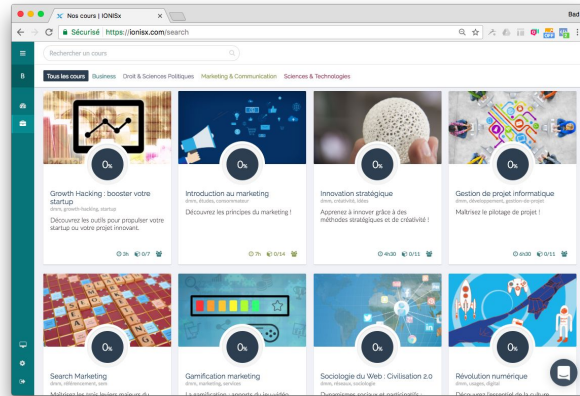
Digital Transformation to Online University



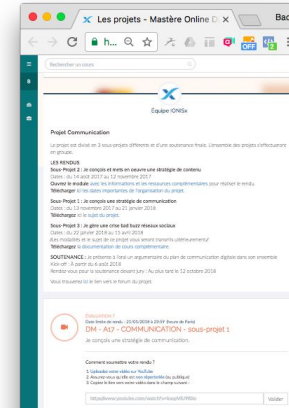
Graduate and Professional Online Education



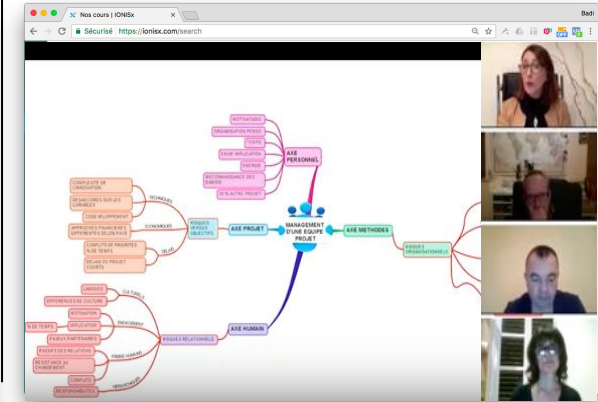
Content library indexed by degrees, competencies and job orientations



Projects : Individual & Group



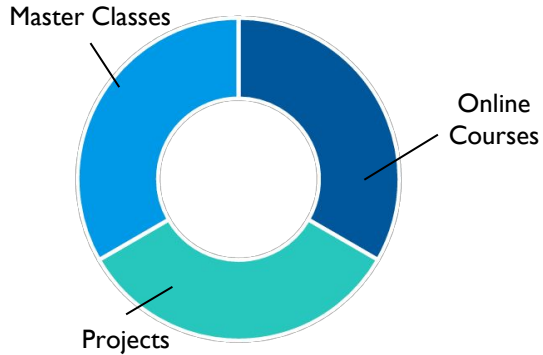
Coaching : Experts and Community



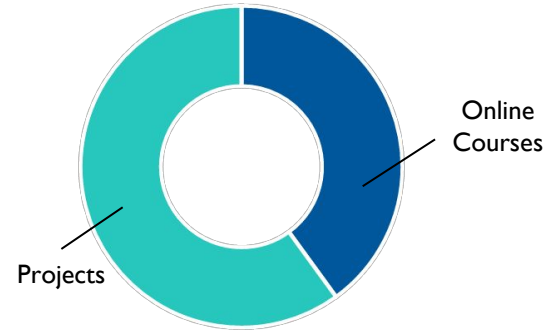
→ **Deliverables:** recognized degrees, skills and career paths

Project + skills oriented pedagogical model

Blended Model Structure



Self-paced Model Structure

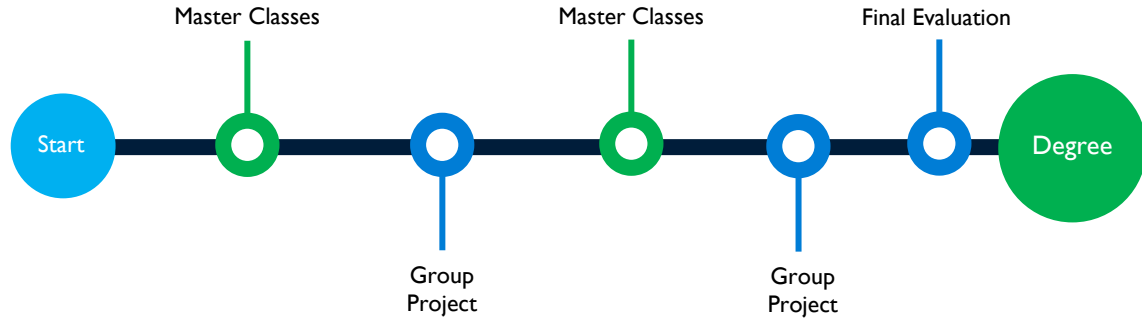


- **Online courses** = mutualisation of learning content across blended and self-paced programs
- **Projects** = individual and group work to validate skills acquisition
- **Master classes** = synchronous or asynchronous content provided face-to-face or remotely

Tailored models for blended or self-paced

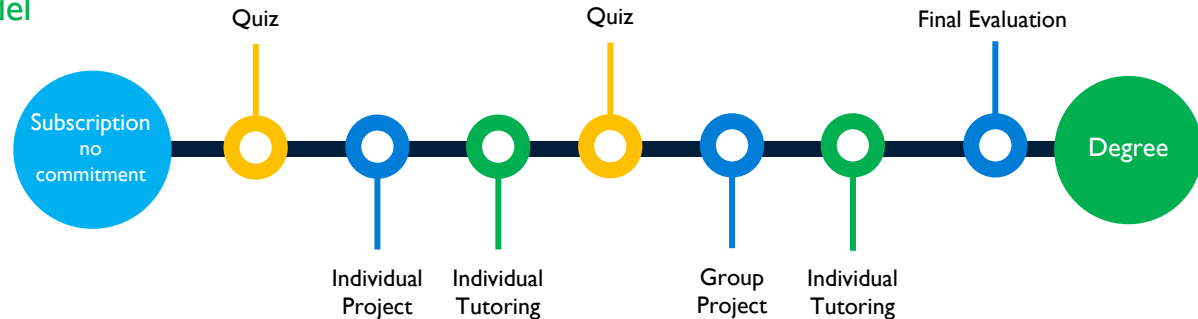
Key Success Factors for blended model

- Flexible yet synchronous learning paths
- Group projects and assessments
- Tutoring and master classes



Key Success Factors for self-paced model

- Auto enrollment
- Asynchronous learning paths
- Individual projects and automated assessments
- Tutoring and peer-to-peer support
- Community Management



Online platform supported by Open edX

The image displays several screenshots of the IONIS X Digital marketing manager interface. The interface is dark-themed with a sidebar menu on the left. The main content area is divided into several sections:

- ACTUALITES:** A list of news items with dates and authors.
- CALENDRIER:** A calendar view showing events and their durations.
- STATISTIQUES PARCOURS:** A bar chart showing course statistics.
- DERNIERS PARCOURS:** A list of recent courses with progress indicators.
- PROJETS:** A list of projects with dates and status.
- Prise de parole en public:** A module for public speaking, including a timer and a checklist of tasks.
- Programme:** A list of learning paths with checkboxes for completion.

Green callout boxes highlight the following features:

- notifications and alerts:** Located in the top right corner of the interface.
- progress tracking indicators:** Located in the center of the interface, pointing to the calendar and statistics sections.
- social and collaborative tools:** Located on the left side of the interface, pointing to the messaging and student list sections.
- project support:** Located in the bottom center of the interface, pointing to the projects section.
- multi-environment:** Located at the bottom left of the interface, pointing to the navigation menu.
- custom learning paths:** Located on the right side of the interface, pointing to the learning paths section.

Custom tools for better user experience

DM - O16 - COMMUNICATION ORALE ET MÉDIATRADING

Alexandra Fleury

Correction terminée



i

DMM 2016 PRESENTATION 120 SEC ALEXANDRA FLEURY



0:00 / 1:56

APPRÉCIATION GLOBALE

90/100

Bonjour Alexandra, belle présentation professionnelle. vous souriez, c'est un vrai plus. votre posture est bonne ainsi que votre contact regard. à certains moments la gestuelle est convaincante, à d'autres éviter de toucher vos doigts lorsque vous parlez, gardez un geste d'ouverture et libérez complètement votre geste. il manque votre chapeau distinctif qui permettrait d'introduire en impactant tout de suite.

christine abadie - le 13/11 à 12:41

00:04

beau sourire d'entrée

christine abadie - le 13/11 à 12:42

00:28

l'insertion des textes n'est pas obligatoire mais en effet vient renforcer vos propos

christine abadie - le 13/11 à 12:43

00:06

où est votre chapeau distinctif conforme à la vidéo se présenter en 120 secondes

christine abadie - le 13/11 à 12:43

00:31

là la gestuelle est convaincante

Key Takeaways

Since the launch of our first Online MBA in January 2016, we've successfully:

- Used Open edX to create synergies for continuing education programs.
- Adopted competency-based and project-based pedagogical models.
- Developed models for blended and self-paced learning to suit all students.

Conclusion

- Modular content → synergies between different schools or programs, and different level of students.
- To design modular content, many people need to be involved at the stage of course conception, before the production starts. The importance of advance planning can't be overstated.
- Support to both learners and teachers is also key: change management is a big component of the projects.
- The content of the online class is only part of the learning/teaching experience: learning scenarios are highly important. This is thought out/anticipated from the stage of conception.

Thank you for your attention.

Let's talk!

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isabelle.druet@ionisx.com