Models and guidelines for the design and development of joint master's programmes

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These guidelines were carried out at EADTU European Association of Distance Teaching Universities

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Introduction

This e-book provides pedagogical guidelines for designing and developing joint master's programmes, to be published on the BLOOM hub. The hub will present a series of models and guidelines for key educational digital formats for higher education courses and programmes, international collaboration and mobility.

The basic premise is "teaching as a design science" (Laurillard, 2012): educational formats as presented on the BLOOM hub should be the subject of successive design steps, in which teachers and programme boards take the lead, supported by teaching and learning and educational ICT support services. Institutional leadership should promote innovation in higher education through digitization strategies and create the necessary conditions for the design, development and implementation of digitized education.

This eBook first provides a general overview of the successive design and development steps for a joint master's degree. The following sections explain each of these steps, mapping out all actions to be taken along with the guidelines.

Based on the general overview, each module is directly accessible: from the overview the document can be unfolded.

Next eBooks will deal with models and guidelines on the design and development of "joint microcredential courses", "joint microcredential programmes", "curriculum collaboration and mobility", to be followed by "blended higher education", "hybrid higher education" and "MOOCs and microcredentials".

A joint master's programme: the concept

connected with institutional policies and strategies

co-owned and jointly organized by different universities

joint program design and delivery

study load 60-90-120 ECTS

EQF level 7-8

joint master program: the concept

modular structure
- linear
- branched
- microcredentials/microdegrees

face to face and/or digital delivery
- hybrid
- blended
- online

embedded mobility
- individual study plan and learning agreement
- face to face or digital mobility modes

recognition of prior learning and experience

joint master diploma

quality assurance and accreditation

The concept

A joint master's programme can be described as an integrated curriculum jointly designed and delivered by several higher education institutions, each of which co-owns and jointly organizes the programme. The programme is awarded with a joint master's degree:

- A joint master's programme is linked to institutional policies and strategies;
- The study load of a joint master's programme is 60, 90 or 120 ECTS;
- The joint master's award refers to a 7 or 8 European or national level (EQF/NQF);
- The programme is modular, as each partner institution organizes a part of the programme. The structure can be linear, branched, and may consist of microcredentials;
- A joint master's programme can be offered in whole or in part by digital modes of education such as synchronous hybrid, blended or online distance teaching and learning;
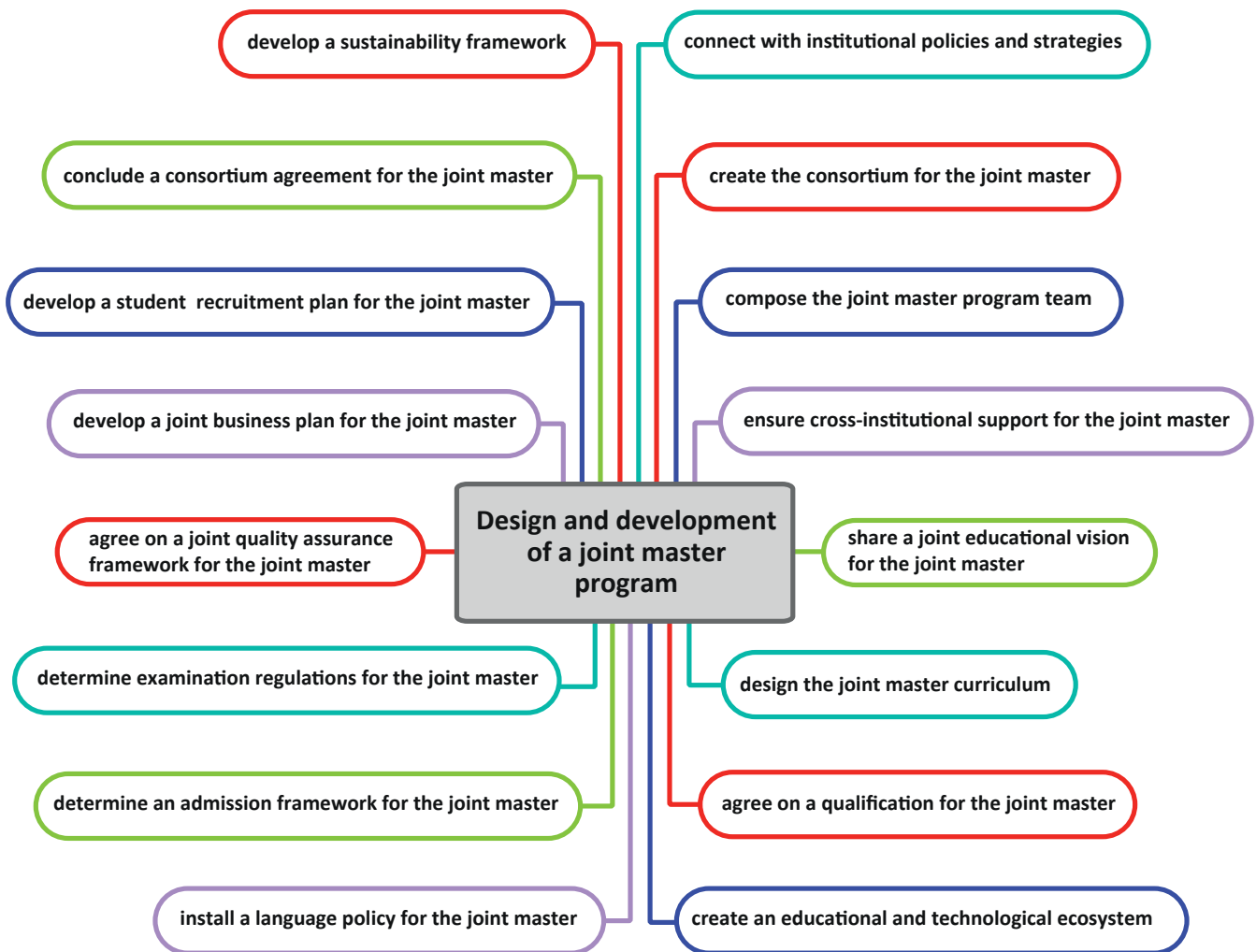
- As students take consecutive modules at different universities based on individual learning agreements and study plans to progress in the joint programme, student mobility is embedded in the curriculum and can be physical or digital accordingly;
- If applicable, joint master's programmes are accessible after recognition of a previous learning or experience procedure (see ECTS Guide)
- A joint master's programme is accompanied by a diploma supplement;
- Joint master's programmes are subject to joint procedures for quality assurance and accreditation by a recognized accreditation agency;

Observations

- Joint Master's programmes have been promoted since 2004 by the Erasmus Mundus Action of the European Commission. This specific action aims to promote excellence and achieve global attractiveness and competitiveness of the higher education institutions concerned. The specificity of Erasmus Mundus joint master's lies in the high degree of jointness/integration between the partner institutions and the excellence of their academic content. The programmes should promote European excellence in higher education and include mandatory individual mobility for all students participating in the programme. The EMJM action funds scholarships for the best international students who apply. The mobility pathways and the mechanism for recognition of study periods between the partner institutions must be agreed within the consortium in the project application phase.

- Other European Commission actions, such as Partnerships for Cooperation, Alliances for Cooperation and the European University Initiative (EUI), promote academic cooperation and mobility between European higher education institutions. Within these frameworks, joint courses and programmes are developed in various fields, as well as short learning programmes and microcredentials for continuing education. These programmes can include physical and digital mobility adapted to the needs of students.

- The Corona crisis had a disruptive impact on the academic collaboration and mobility organized by the alliances of the European Universities. In the European Commission's May 2020 survey, 96% of institutions think they would have been better prepared to deal with this pandemic if their European university had already been fully operational (European Commission, 2020). An example of the most useful features mentioned by them was a fully functional EU digital inter-university campus, where member universities pooling together their on-line courses to offer continuous delivery of high quality education through larger volumes of on-line courses for all their students, sharing operational joint digital learning and teaching environment with common digital governance tools. 85% plan to move quicker towards a European virtual inter-university campus. 90% would find useful that Erasmus+ supports blended mobility formats (ie short physical mobility, blended with virtual mobility).

The design of a joint master's programme: overview

develop a sustainability framework	connect with institutional policies and strategies
conclude a consortium agreement for the joint master	create the consortium for the joint master
develop a student recruitment plan for the joint master	compose the joint master program team
develop a joint business plan for the joint master	ensure cross-institutional support for the joint master
agree on a joint quality assurance framework for the joint master	share a joint educational vision for the joint master
determine examination regulations for the joint master	design the joint master curriculum
determine an admission framework for the joint master	agree on a qualification for the joint master
install a language policy for the joint master	create an educational and technological ecosystem

Design and development of a joint master program

Development steps

Designing and developing joint master's programmes is a complex activity that involves several steps:

- *link the programme to the institution's macro-objectives* related to broader institutional strategies such as promoting a structural and sustainable academic cooperation between universities; creating an international academic experience for students; developing high-quality cooperation in European University Initiative alliances (EUI) and other networks; creating high-quality flexible continuing education and professional development; and developing attractive and competitive master's programmes for the international recruitment of talented students;

- *create the partnership with a clear identity in the field*, by inviting universities based on trust and previous collaborations or common interests in research and innovation. Involve non-degree awarding partners for co-design, co-development or co-delivery, if this is preferred for the target group envisaged;

- *assemble a course team* led by a competent course team leader, share leadership with key personnel of the respective institutions and involve teachers in the implementation of the programme. Define the roles of the partnership related to programme design and development; the implementation of the programme; admission, exams and qualifications; quality assurance, continuous evaluation and accreditation; the educational and technological ecosystem; recruitment of students; the business plan and the sustainability framework;

- *Provide (cross-)institutional support* through teaching and learning, internationalisation, ICT for education and legal services and the student administration;

- *share a joint educational vision on the joint master's degree*, based on a needs analysis; defining an academic and professional profile; describing the intended characteristics of the student; defining the macro-objectives and a unique selling point of the master's programme and defining the relationship with other master's programmes;

- *design the programme according to state-of-the-art principles,* ensuring that it can be successfully developed and implemented, defining the intended learning outcomes and competences, designing a coherent curriculum in content and structure; aligning delivery modes, media and tools; designing room for flexibility; enhancing the student learning experience ; determining the study load; making the programme inclusive and designing student and staff mobility modes.

- *agree on the joint qualification to be awarded*, justifying the diploma to be recognized; agreeing on the name of the joint master's degree and possibly on a corresponding professional qualification; defining any modular qualifications; agreeing on the descriptors for the diploma supplement;

- *create an educational and technological ecosystem for the joint master's*, by selecting a digital learning environment; sharing educational and technological resources, access to libraries and other facilities and to research and innovation in the partner universities;

- *introduce a language policy* to make the programme accessible to the whole partnership and to wider geographical areas;

- *establish an admission framework* with joint admission criteria, a joint application and admission procedure, including credential evaluation and joint registration for the degree programme;

- *establish joint examination regulations*, including the organization of the examinations, a joint grading system and rules for awarding a joint master's degree;

- *agree on a common quality assurance framework*, involving institutional frameworks for quality assurance and compliance with accreditation requirements;
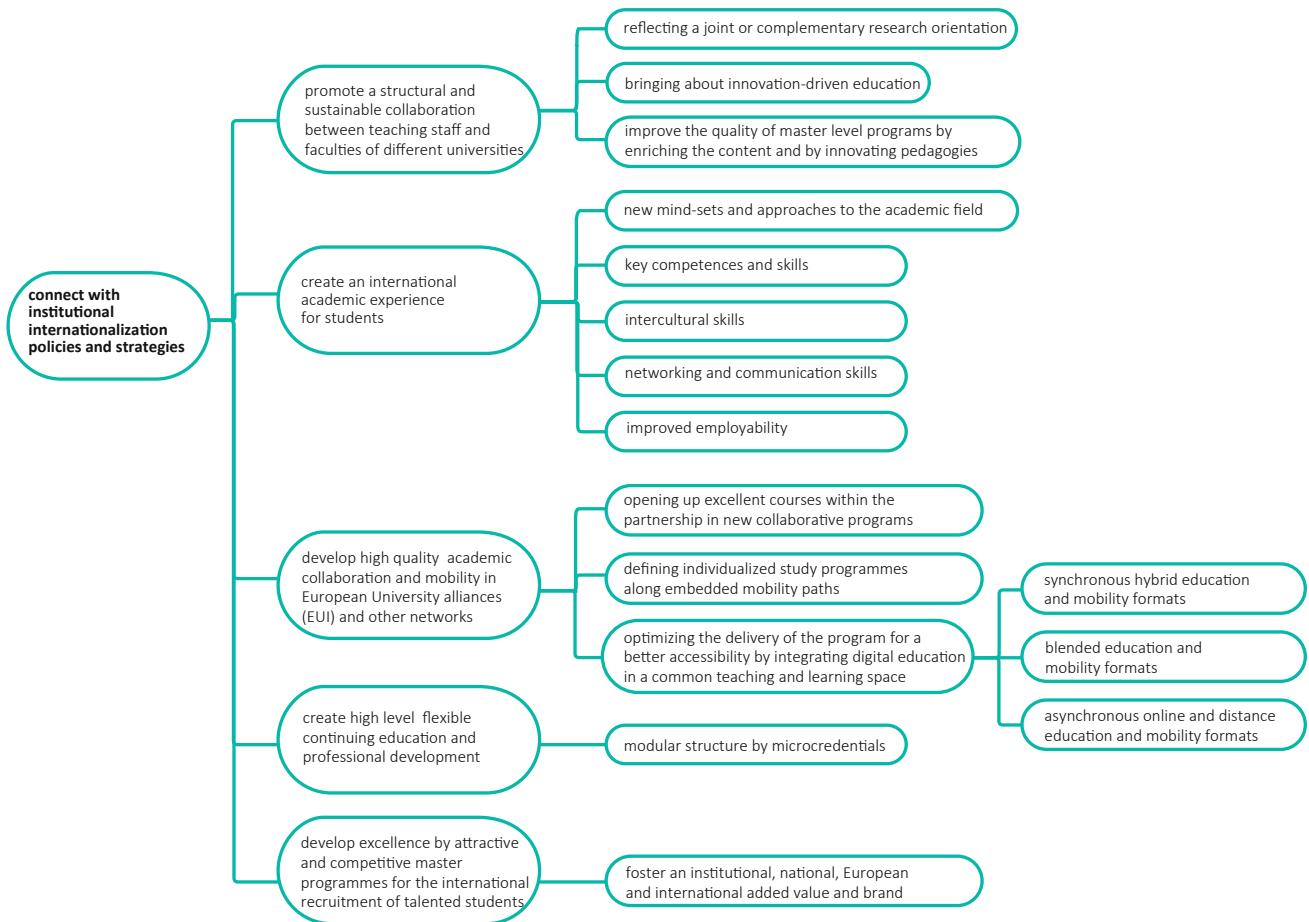
- *Develop a joint business plan*, balancing public funding, student enrollment fees and funding from external stakeholders;

- *Develop an international student recruitment plan*, including multi-segment recruitment campaigns;

- *conclude a consortium agreement* in which responsibilities and tasks are laid down;

- *develop a sustainability framework*, with a commitment from universities for at least five years to ensure basic sustainability; an annual institutional evaluation and improvement plan and a sustainable financial framework.

Observations

- Expertise in the design and development of joint master's programmes and related mobility is increasing at all levels, in particular through the involvement of universities in Erasmus Mundus programmes (European Commission, 2021). This strengthens the scientific basis for designing and developing joint master's degree programmes;

- EUI alliances cooperate in many areas on joint programmes at bachelor, master's and doctoral level and in continuing education and provide a natural environment for the development of joint master's (European Commission, 2021);

- EIT Knowledge Innovation Communities develop and recognize international master's programmes in their respective priority areas (European Commission, 2021);

- The European Commission has prepared a proposal for Recommendation to the Council of Education Ministers on a framework for microcredentials (European Commission, 2021), which will stimulate the modularization of university education and the development of continuing education and professional development. This is part of the Digital Education Action Plan (European Commission, 2020) and the European Education Area (European Commission, 2020).

Connect with institutional policies and strategies

connect with institutional internationalization policies and strategies

- promote a structural and sustainable collaboration between teaching staff and faculties of different universities
  - reflecting a joint or complementary research orientation
  - bringing about innovation-driven education
  - improve the quality of master level programs by enriching the content and by innovating pedagogies

- create an international academic experience for students
  - new mind-sets and approaches to the academic field
  - key competences and skills
  - intercultural skills
  - networking and communication skills
  - improved employability

- develop high quality academic collaboration and mobility in European University alliances (EUI) and other networks
  - opening up excellent courses within the partnership in new collaborative programs
  - defining individualized study programmes along embedded mobility paths
  - optimizing the delivery of the program for a better accessibility by integrating digital education in a common teaching and learning space
    - synchronous hybrid education and mobility formats
    - blended education and mobility formats
    - asynchronous online and distance education and mobility formats

- create high level flexible continuing education and professional development
  - modular structure by microcredentials

- develop excellence by attractive and competitive master programmes for the international recruitment of talented students
  - foster an institutional, national, European and international added value and brand

Joint master's programmes engage universities as an institution and should connect writ institutional policies strategies and frameworks for internationalization:

- promote a structural and sustainable collaboration between teaching staff and faculties of different universities

- create an international academic experience for students;

- develop high quality academic collaboration and mobility in EUI alliances aner networks;

- create high level flexible continuing education and professional development;

- develop excellence by attractive and competitive programmes for talented international students.

Guidelines

Promote a structural and sustainable collaboration between teaching staff and faculties from different universities

Universities promote academic collaboration between teachers and faculties from different universities. Joint master's programmes reflect this policy, as teaching staff and faculties initiate curriculum collaboration or accept the invitation of peers from other universities to join a programme with them. In most cases, this collaboration is based on a joint or complementary research orientation or on previous educational collaboration and/or mobility (e.g. Erasmus mobility).

This collaboration leads to the creation of an innovation-driven joint master's degree that prepares students for a strong contribution to the economy and society.

Through this common and complementary nexus in research and innovation, the partner universities improve the quality of the master's programme offered by enriching the content and innovating pedagogical methods to make the programme accessible to students in the partnership and beyond.

Joint master's programmes should base their curriculum on this common and complementary link between research, innovation and education.

Create an international academic experience for students

Universities want to create an international academic experience for their students. In joint master's programmes, this experience is structurally embedded in the curriculum through successive mobility periods.

Throughout the programme, students study in a cohort of international students taught by international staff in a common learning space created by partner universities. They learn new ways of thinking and strengthen their core knowledge and skills in their academic field.

This international experience gives students the opportunity to develop intercultural, networking and communication skills in physical and digital environments.

This leads to better (international) employability of students.

Joint master's programmes should consciously integrate these institutional mobility objectives into the curriculum to provide a strong international academic experience.

Develop high-quality academic collaboration and mobility in alliances of European universities (EUI) and other networks

Many universities are members of European University Initiative alliances (EUI) and other networks that take initiatives for joint programmes at all levels (bachelors, master's, doctorate, microcredentials).

Alliances and networks or structured collaborations between universities that share a common mission and a similar academic culture. They develop collaborative programmes that open up excellent courses to the entire partnership and enrich the content of the common educational offer. Individualized curricula for their students along with embedded mobility paths are integrated into the programme.

To make the programme and mobility pathways accessible, affordable and more effective for all students, university alliances and networks are integrating digital education and mobility formats into the collaborative programmes. Current approaches mainly include synchronous hybrid (e.g. virtual classrooms, webinars, lecture series) (Raes, 2020), synchronous and asynchronous blended (Goeman et al., 2019; van Valkenburg et al., 2020) and asynchronous online forms of distance education and mobility.

Joint programmes should develop innovative forms of education and mobility that can be integrated into a common teaching and learning space for all staff and students involved in the programme.

Create flexible continuing education and high-level professional development

Universities are increasingly developing policies and creating extension schools for continuing education and professional development, using digital education formats to scale and make their offerings more flexible, especially for students who combine work and study.

The European Institute of Innovation and Technology supports digital master's schools in the Knowledge Innovation Communities (KICs) in all areas such as energy, climate, health, urban mobility, raw materials, manufacturing and food. This demonstrates the need for cooperation in continuing education and professional development.

Joint master's programmes for these target groups can be built modularly on the basis of microcredentials and microdegrees in line with the proposal for EC Recommendation to the Council of Ministers on Microcredentials (European Commission, 2021). This will encourage students to take smaller programmes that respect their work-life balance and push them to continue their studies to a master's degree.

Scalable and flexible continuing education and professional development solutions are needed to meet the needs for innovation and entrepreneurship in priority sectors of the economy.

Develop excellence through attractive and competitive master's programmes for the international recruitment of talented students

A large number of European universities participate in the Erasmus Mundus programme that develops joint master's (EMJM) to recruit talented international students for further study at their institutions. The European Commission provides scholarships to attract students to selected programmes (European Commission ,2021).

In Erasmus Mundus programmes, physical mobility is mandatory for following the individual learning paths. Innovative digital teaching methods are applied, for example to make the study more effective through blended learning or to bring dispersed groups of students together in the partnership through virtual classrooms and webinars or through joint projects online.

Erasmus Mundus programmes provide institutional, national, European and international added value. Collaboration between existing master's programmes in the relevant disciplines can deliver on this promise and organize a competitive offer.

These programmes are labeled with Erasmus Mundus, profiling them worldwide.

Interested consortia can apply for a preparation grant to design an Erasmus Mundus joint master's.

Create the partnership for the joint master's programme

The creation of the partnership for the joint master's program is based on several criteria:

- The participation of degree awarding and non-degree awarding partners;
- The identity of the partnership to be developed;
- Mutual trust;
- Operational size.

Guidelines

Degree awarding and non-degree awarding partners

- The initiative for a joint master's programme can be taken by an individual member of staff, by a programme committee at faculty level, or by a rector or vice rector at institutional level. In practice, initiatives arise on the basis of previous collaboration or within the framework of a European University Alliance (EUI) or other network;

- Non-degree awarding partners can contribute to the joint master's by strengthening the research, innovation and professional base. Examples are research and innovation institutes, professional organisations and workplace providers that offer internships.

Identity

- The identity of a partnership is largely geographically determined by its national, European or international base. Together, partners find a common identity in a combined research and innovation orientation or collaboration. Throughout this common identity, partners also want to maintain their own profile.

Trust

- Mutual trust is a basic condition for the realization of a successful joint master's. This is based on the educational, organizational and technological capacity of each partner institution to fulfill its role. The joint master's must also create benefits for each individual partner, creating win-win situations through complementarity and multiplying effects.

- Partners show a collaborative attitude and a long-term commitment to the joint master's programme (minimum 5 years).

Operational size

- As setting up a joint master's programme is a complex activity, the typical number of partners will range from two to six partners. A higher number will be complicated, because more perspectives may need to be reconciled and more institutional and national regulations need to be taken into account;

- In case more partners participate, core partners can take the lead, while associate partners play a specific role, eg additional labs, specific seminars, mobility programmes, guest lectures, etc.

- Associated partners can be institutions that do not award a degree, such as museums, national scientific institutions, professional organizations, industry sectors or companies.
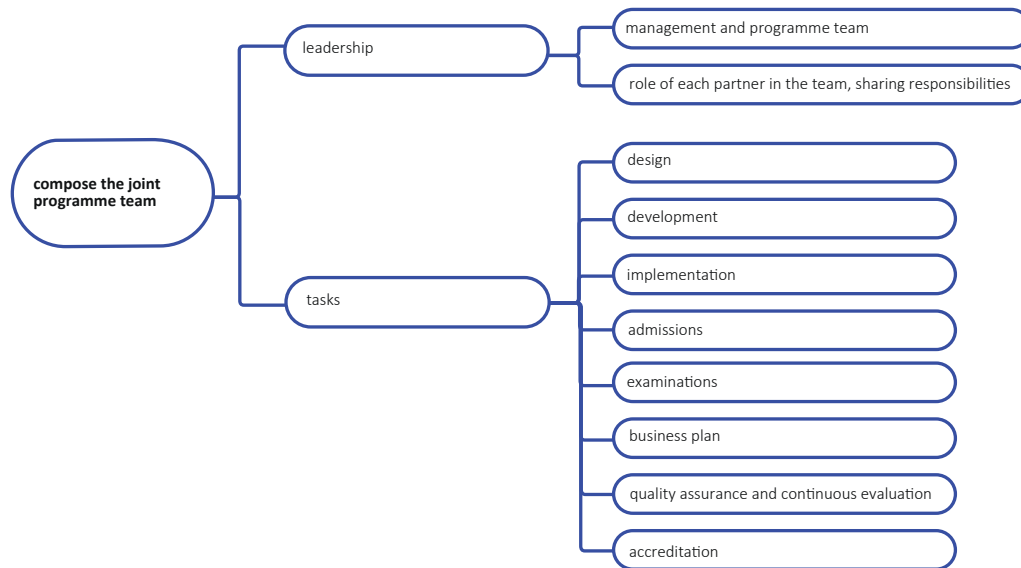
Observations

- Individual teaching staff will start with the development of a joint master's because of different motivations related research and innovation in a certain scientific and professional domain. Due to their reputation, they can also be invited by colleagues from other universities or networks.

They need a dialogue and an agreement with the faculty or the institutions at an early stage in order to comply with the institutional rules for programming joint programmes . From the outset, they should receive advice and support from various services in the university, especially teaching and learning, IT, the international office, the student administration and legal services;

Compose the programme team: structure and tasks

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                                              │ role of each partner in the team, sharing  │
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   │ programme team   │                       │ design                                     │
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The partners have to agree on the composition of the joint programme team:

- Leadership and role of each partner in the team;

- Tasks assigned to the team and individual partners.

Guidelines

Leadership and roles

- The success of a joint master's is largely dependent on the work of the programme management and the programme team. The programme leader is a university staff member who assumes overall academic and administrative responsibility for the joint master's degree;

- This responsibility is shared with the other members of the programme team, each representing and engaging his or her partner university;

- In all cases, leadership is of a collegial / consensual nature.

Tasks of the team and individual partners

- The programme team is responsible for all phases of setting up a joint master's: design, development and implementation. It takes into account institutional and national regulations;

- The programme team determines the admission criteria for the study programme and the admission procedures;

- The programme team acts as an examination committee and determines the examination rules, including the assessment system and the conditions for awarding credits and the joint diploma;

- The university of the course leader is responsible for the (internal) quality assurance of the study programme, while each partner university provides all the data necessary to fulfill this task. Together they develop a procedure for the continuous evaluation of the programme;

- This continuous assessment forms the basis for a formal (national, professional) accreditation on request.

Recommendations

- The team leader involves his university and seeks affiliation with the chosen partners. As a penholder, he must lead the design, development and implementation processes. He invites partners to provide their best input in each phase. The team leader ensures that he receives the educational, organizational and technological support from his faculty and university to lead these processes. Partners do the same on their part;

- The programme team must distinguish the respective phases when setting up a joint master's programme. Each stage requires a certain amount of time. Depending on the institutional support of the team leader and the partners, the design phase lasts at least three months, followed by a development phase of at least six months after which the programme can be implemented.

Ensure (cross-) institutional support
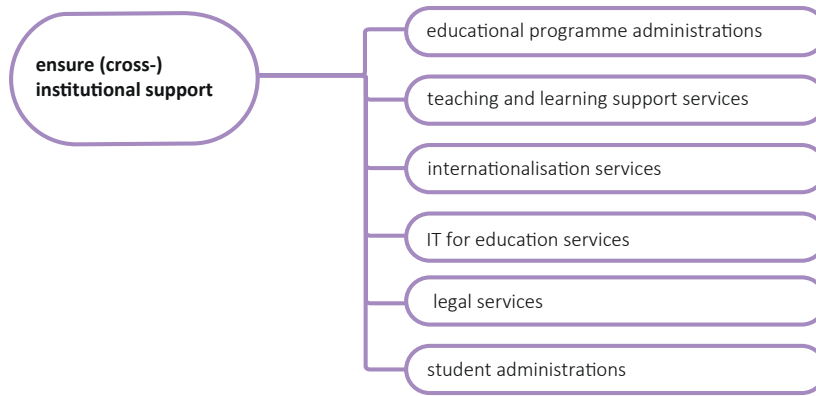
The team leader and the team partners need institutional and faculty support, which is given by professional expert services in the partnership:
• The educational programme administration ;
• Teaching and learning services
• Internationalization services
• IT for education services
• Legal services
• The student administrations

Guidelines

The educational programme administration

New programme initiatives usually have to go through a faculty or university approval process. A dialogue should be started as soon as possible with the education administration at central or faculty level, in which the programme leader and the team are informed about all preconditions and steps to be taken from the start of the programme design to its publication in the relevant programme guides and its implementation.

Teaching and learning services

The teaching and learning support services are essential for designing a joint master's programme. They have expertise in course and curricula development, as well as collaborative approaches to this development. Consulting through this service will dramatically reduce the time and therefore the cost required to design the programme as they are familiar with all aspects of the design to be covered.

Internationalization services

Internationalization services also have expertise in international course and programme design. In addition, they are used to develop mobility formats for teaching staff and stu–

dents in line with the curriculum. They are also familiar with all kinds of agreements that are necessary for a joint master's.

IT for education services

IT services will advise the team on all digital aspects of the curriculum, including synchronous and asynchronous online delivery and online group collaboration. A major issue concerns the common platform or learning environment to be used for the delivery of the programme. For pragmatic reasons, the platform of the leading institution is generally used. In newly established EUI alliances, a new common platform is envisaged for the delivery of common course offerings, but this has not yet proven to be an easy solution.

Legal services

Legal services have the task of resolving all (legal) regulatory issues and converting restrictions into opportunities in dialogue with partner institutions. This will sometimes lead to changes in institutional rules. It can also lead to advice or requests to the national government to change regulations.

The student administrations

The student administrations will advise the team on the central enrollment of students and on secondary enrollments at partner institutions for participation in subsequent parts of the programme. Multiple enrollments are required to ensure that students can achieve a joint qualification and that institutions ultimately receive public funding for all parts of the programme.

Recommendations

• In order to improve programme quality and reduce design and development costs, support services should be contacted from the start of programme design;

• In general, the team leader will first engage the support services of his university and then try to align and engage the partners in common approaches that require them to seek advice in their institutions;

• Professional representatives from the support services of all partner universities might establish a joint task force or expert group to support teaching staff in the design, development and implementation of the programme. They can build on mutual expertise and act as a point of contact for solving problems that have arisen.

Share a joint educational vision on the master's programme to be developed

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│                     │        ┌─────────────────────────────────────┐
│                     │────────│ objectives and USP of the joint master program │
│                     │        └─────────────────────────────────────┘
│  share a joint      │        ┌─────────────────────┐    ┌─────────────────────────────┐
│  educational vision │────────│ academic profile    │────│ define the nexus research-innovation and │
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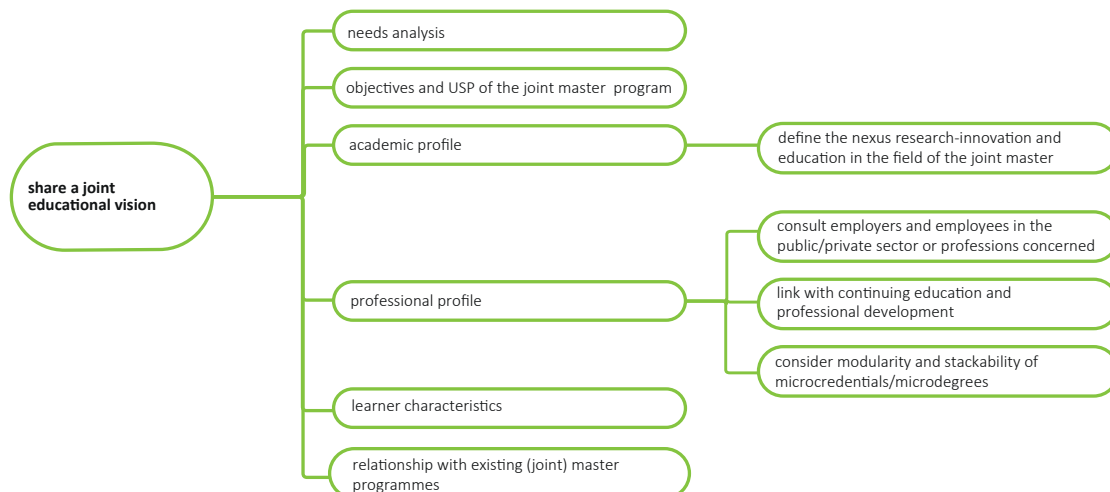

As a first step, partners have to develop a joint educational vision for the joint master's-programme, consisting of:

- A needs analysis;

- The academic and professional profile;

- The characteristics after learners envisaged;

- The objectives and the unique selling point of the programme;

- The relationship with existing courses and programmes.

Guidelines

A needs analysis

A needs assessment in the targeted area is carried out on the basis of existing documents or through stakeholder consultation. The EU also defines priority areas, such as in the case of Erasmus+ Alliances for Innovation and the European Institute of Innovation and Technology (EIT) (European Commission, 2021). National governments regularly communicate about critical shortages in the labor market. Already at this stage, it is useful to rely on associated partners such as professional organizations, research and innovation institutes, sectors and companies or public services.

The academic and professional profile

The academic and professional profile of the joint master's is determined on the basis of the identified needs, the nexus research-innovation-education, the link with other study programmes and its relevance to the economy and society in general. Successful researchers and research departments often want to organize a master's programme to attract international students to transfer scientific knowledge and recruit doctoral students.

Technical and medical departments often organize postgraduate master's programmes to train experts and specialists.

The characteristics of the intended learners

The partnership defines the main target groups for the joint master's programme and the expected student characteristics. This includes the admission rules for students based on prior knowledge and any professional experience.

The goals and unique selling point of the programme

The general objectives of the programme are defined at national and European level in economic, social and cultural terms.

The objectives of the joint master's programme are then defined from an academic and professional point of view, including the possible contribution to the innovation and competitiveness of the universities involved.

A unique selling point is sought for a sufficient target group in the partnership and beyond.

The relationship with existing courses and programs.

The relationship with other master's-level offers in the partnership is clarified. Possible collaborations at the course level are explored. The added value of the programme compared to existing master's courses in the same field at national and European level is explained. It is also indicated to what extent this added value contributes to university excellence, innovation and competitiveness.

Design the joint curriculum

design the joint curriculum

- define programme objectives, intended learning outcomes, competences
  - EQF level 7 or 8
- design a coherent curriculum in content and structure
  - content and structure
    - linear structure
    - branched structure
  - modularity and optional pathways/ISPs
  - interaction with the professional sector
    - integrate internships, projects, field work
- define course delivery modes
  - synchronous hybrid teaching and learning, eg virtual classrooms
  - synchronous and asynchronous blended teaching and learning
  - asynchronous, online and distance teaching and learning
- design student and staff mobility modes
  - staff mobility
    - internal mobility, delivering a transnational course in a joint programme
    - external mobility, guest lectures
  - student mobility, individual study paths (ISPs)
    - embedded mobility in transnational courses of a joint programme
    - external, to a third institution
- share, evaluate and align media and tools
- design room for flexiblity
- enhance the student learning experience
  - (self)-regulation
- determine the study load
- make the program inclusive

For the design of the curriculum of a joint short learning programme, successive joint decisions have to be made as the programme is co-owned and co-delivered by all partners in a distributed environment:

- Define the learning objectives of the curriculum;

- Design a coherent curriculum in content and structure;

- Define course delivery modes;

- Design staff and student mobility modes;

- Design room for flexibility;

- Enhance the student learning experience;

- Determine the study load of the programme and its components;

- Make the programme inclusive.

Guidelines

Define the goals of the curriculum

• Define and justify the relevance of the learning outcomes of the joint master's degree in view of the students' future academic and professional opportunities;
Eventually translate the outcomes into competence categories to be covered
(see European Skills and Competences, ESCO, https://ec.europa.eu/social/main.jsp?catId=1326&langId=en

• Define the European Qualifications Framework level for the joint master's curriculum
(http://www.ehea.info/Upload/TPG_A_QF_RO_MK_1_EQF_Brochure.pdf
Joint master's programmes can be designed at a 7 or 8 EQF level.

In the further design process, next to specific guidelines for joint programmes, we follow maturity dimensions for programme design, based on recent research and developed in the European Maturity Model for Blended Education (van Valkenburg et al., 2020; Goeman et al.,2021; Dijkstra & Goeman, 2021). Although these dimensions are developed for blended education in particular, we assume that they are relevant for digital education in general.

Design a coherent programme in content and structure

• Define the main educational topics of the programme in relation to the programme objectives and the needs of the field. Seek complementary expertise from key academic staff in the partnership to achieve the joint master's objectives and involve them in delivering the required subjects. Compile the curriculum from existing courses in the partner institutions. Courses can also be newly designed, although this requires considerably more preparation time. However, many collaborative programmes provide a small amount of new components in different formats, such as lecture series, webinars, collaborative learning communities, independent research, which requires the commitment of the teaching staff;

• Order and structure the courses in a coherent curriculum. The curriculum can have a linear or branched structure. In a linear programme, all students of a cohort follow the same learning path after the learning modules at successive universities. In a branched programme, students follow differentiated learning paths that are laid down in their individual study plans (ISP). Mobility is embedded in the programme. The programme board describes and demonstrates the academic and professional relevance of such differentiated options or learning paths;

• To make the programme coherent, both the vertical (course-programme) and the horizontal coordination (between courses) are looked at from a shared vision on the content of the programme;

- If applicable, explain how the internship / internship / fieldwork activities fit into the joint programme objectives and explain the interaction of the joint master's with the relevant professional socio-economic / scientific / cultural sectors. What kind of involvement, if any, do these actors have in the implementation of the curriculum (co-creation of content, evaluation of courses, internship / placement providers, financial sponsors, research providers, employment prospects, etc.)? To what extent are they involved in the programme?

Define delivery modes

Determine which modes of delivery will be used for the joint master's programme and for each course, next to physical delivery. Make coherent agreements about digital education.

International programmes request flexibility in order to make them accessible for all students. Digital teaching and learning provisions are suitable as the internet is accessible anywhere by anyone.

Digital teaching and learning is also more scalable and therefore an important asset for international education.

Three main approaches to digital education, we were further developed during the Corona crisis are (Pieters, 2021):

- *Synchronous hybrid teaching and learning*: based on institutions that have in common that both local students or "here" and remote or "there" students are simultaneously included (Raes, 2019);
- *Blended teaching and learning* with a mix of synchronous and asynchronous methods: based on a course design with a conscious combination of online and offline learning activities (Laurillard, 2012, 2015; van Valkenburg et al., 2020);
- *Asynchronous online teaching and distance learning*: based on a course design with a continuous physical separation between teacher and student (Castro et al., 2019; Martin et al., 2020)

These approaches can be combined. In a curriculum, one of these approaches can be dominant, while another can be complementary.

Design mobility modes for staff and students

In the design phase of the programme, when ordering and structuring the courses in the curriculum, the added value and relevance of the (virtual) mobility component must also be accounted for De Moor & Henderikx, 2015; Henderikx & Ubachs, 2019). How to make the mobility of staff and students relevant and instrumental for the purposes of the curriculum? How are the mobility paths designed and embedded in the joint master's?

- Mobility of staff is necessary at all stages or when setting up a common curriculum:

    - internal or embedded staff mobility within the partnership: the staff of the partner institutions contribute, among other things, to the joint curriculum; develop the courses and the planned technological resources; install the administrative framework; the joint implementation of the programme, including the admission, examination and certification of students;
    - Mobility of external staff from outside the partnership: external staff and experts can be invited, for example to guest lectures, webinars, projects or to demonstrate good practices.

- Student mobility must be structurally provided in a joint curriculum:

    - internal or embedded student mobility as students participate in the joint curriculum at successive partner universities. In linear curricula, all students follow the same mobility path. In branched curricula, they follow the core curriculum and individual pathways of study (ISPs), which are planned in the learning agreement when students start the joint master's;
    - external student mobility as learners can still take courses in a third institution as part of a learning agreement between the learner, the partnership and the host university. However, in a joint curriculum, the mobility of external students is quite exceptional.

Since courses can be delivered in different ways, mobility can also be synchronous hybrid (eg Virtual classrooms, webinars), mixed (face-to-face and online combined) or virtual / online, always in accordance with the courses.

Tools from the ECTS Users' Guide (European Commission, 2017) are used when organising mobility in a joint curriculum:

- all parts of the joint programme are recognized by awarding ECTS credits (learning outcomes, workload);
- a learning agreement between the student and the partnership regarding his individual study track (ISP) is signed before the start of the joint study programme and confirms to the student that the credits obtained will be recognized for the award of the joint master's degree;
- the transfer of records (credits and grades for the mobility components are stored in the central database for the joint master's).

Share, evaluate and fine-tune tools

Learning tools are used for many functions in education, such as assessments and assignments, collaboration, communication, conference calls, virtual classrooms, polls and surveys, and feedback and videos.

The alignment and coherence of the learning tools (learning environment, software, media, …) used in the programme should be based on the type of learning activities organized by the courses. Decisions are made by the teaching and support staff in the programme and based on evidence or experience.

In an inter-institutional setting, there are likely to be many tools available in the respective learning environments that can be shared. However, they must be coordinated and used in a coherent way in the programme.

This rubric supports a multi-dimensional evaluation of functional, technical and pedagogical aspects of eLearning tools.
https://teaching.uwo.ca/pdf/elearning/Rubric-for-eLearning-Tool-Evaluation.pdf

Design room for flexibility

Although joint master's programmes are already flexible, mainly due to the modularization and use of digital delivery methods, learners at work and international learners need a maximum degree of flexibility (Zone Flexible Education, 2019).

Consider whether students can have the opportunity to modify certain features of the programme. This includes features such as alternative delivery methods (blended courses, remote online courses, traditional courses), workload (full-time / part-time), pace (institution pace / own pace), optionally the ability to take courses at other institutions.

The flexibility in a programme must be deliberately designed. Learners have the opportunity to customize certain features of the programme and receive advice on their options.

Improve the student learning experience

To reach maturity, a programme must actively provide support and guidance to students to develop and improve the learning process and their self-regulatory learning skills (SRL). This means that SRL-related activities are included in every course of a programme and that SRL skills are regularly monitored. Methods and tools to measure self-regulated learning are described and based on both qualitative (eg, surveys, observations, interviews) and quantitative data (eg, from learning platforms, student information systems or other applications) (Winne & Perry, (2012); Gonzales-Torres & Torrano (2008).

Determine the study load of the programme

- Define the study load of the curriculum in terms of ECTS credits.
- The study load of the various components of a joint master's programme should be deliberately geared to each other. The study load and peaks of parallel courses in a course are taken into account.

- The total study load of a study programme and the courses must be monitored, evaluated and adjusted.

Make the programme inclusive

Consider the diverse needs and backgrounds of students to create a programme where all students feel valued, safe and at home and where all students have equal access to the programme. Tailor inclusivity to all courses of the programme. The sense of inclusion is based on evidence or experience.

Agree on qualifications
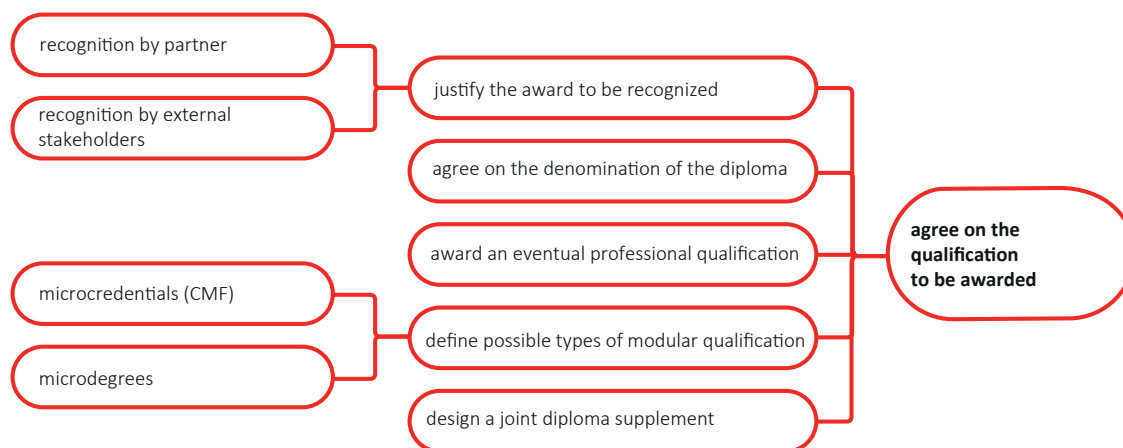
The partnership has to agree on a qualification for the joint master's. Successive decisions have to be made:

- Justify the master's degree to be recognized;
- Agree on the denomination of the diploma;
- Award a professional qualification;
- Define possible types of modular qualifications;
- Design a diploma supplement.

Guidelines

Justify the award to be recognized

Indicate why the joint master's programme should lead to academic recognition by the partner universities and which joint diploma should be awarded. Think of the content, EQF level and size of the programme.

Also seek recognition from outside stakeholders such as professional organizations and employers to enable learners to valorize joint master's degree for professional development credits or for accreditation by professional bodies (e.g. related to professions in psychology, IT, medicine / healthcare, accountancy, education, sectors).

Agree on the name of the diploma

A joint master's programme results in a joint master's degree, signed by all rectors of the universities involved in the partnership. The degree is awarded on a single document according to the rules applied in the leading university. A joint diploma may be bound by national regulations, especially given the language of the diploma. If two universities are involved, in such case a certificate is issued on both sides of the document, signed by both universities.

If, for an important reason, no joint diploma can be awarded, a double or multiple diploma will be issued. In the case of a joint study programme with two universities, this means that the student receives two documents, one from each university. The award of this double or multiple diploma is stated on both diploma supplements.

Normally, a double or multiple qualification is issued in case a learner follows only a substantial mobility window or course package at an individual university (see e-book on curriculum collaboration and mobility). This case is apparently very different from a joint programme that is co-owned by universities in a consortium, for which, as a rule, a joint degree and diploma supplement must be awarded.

Define possible types of modular certification

If the joint master's is structured in a modular way, certificates can eventually be issued after each consistent module. This is especially relevant when the joint master's is organized in the context of continuing education and professional development. Students can then individually follow a micro-credential or micro-degree or they can flexibly spread their master's studies over a longer period of time. This flexibility is easier to organize when digital teaching and learning methods are used.

In the context of the European Education Area and the European Digital Education Plan, the European Commission has prepared a proposal of Recommendation to the Council of Ministers on Micro-credentials (European Commission, 2021), which is expected to be implemented by Member States by 2024. institutions for a more harmonized approach to qualifications for lifelong learning and professional development. It also encourages modular studies.

In the Common Microcredential Framework (European MOOC Consortium, 2018), a microcredential qualification meets the following requirements, addressing the study time horizon of learners who combine work and study:

- An EQF qualification level of 5 to 8 (;
- A study load of 4 to 6 ECTS or 100 to 150 study hours;
- A reliable and valid assessment;
- Stackable to other programmes.

Current qualifications assigned to for longer modules or micro degrees (20-40 ECTS) are for example: "Undergraduate / Postgraduate Certificate", "Undergraduate / Postgraduate Module", "Expert track Certificate" "Specialization in ...," Expert in ... ", "Professional Certificate", "Focus Diploma".

Some microdegrees contain MOOCs or are fully MOOC-based programmes with qualifications such as "MicroMaster's" and "Nanodegrees".

Provide a professional certificate

In some cases, short learning programmes are co-developed or accredited by professional organizations, business sectors or public services. These organizations will recognize and accredit these programmes as an ongoing professional development activity. In some cases, they issue a specific professional certificate in addition to the academic award of the programme consortium. They can also support the programme with funding or grants.

In some countries, students can take advantage of a "personal learning account" when taking such a recognized programme.

Design a joint diploma supplement

A joint master's diploma is accompanied by a joint diploma supplement with information as described in the ECTS Users' Guide and Europass. This is important for the valorisation of the certificate in academia and by employers. Descriptors are:

- information identifying the holder of the qualification;
- information identifying the qualification;
- information on the level and duration of the qualification;
- Information about the completed programme and the results achieved;
- Information about the function of the qualification (eg Stackability)
- the certification of the supplement;
- information about the national higher education system;
- Extra information.

In addition, it must contain:

- information on the mobility scheme followed in the joint programme;
- Information about the delivery method.

(see: http://ehea.info/Upload/document/ministerial_declarations/EHEAParis2018_Communique_AppendixIV_952782.pdf)

Create an educational and technological ecosystem
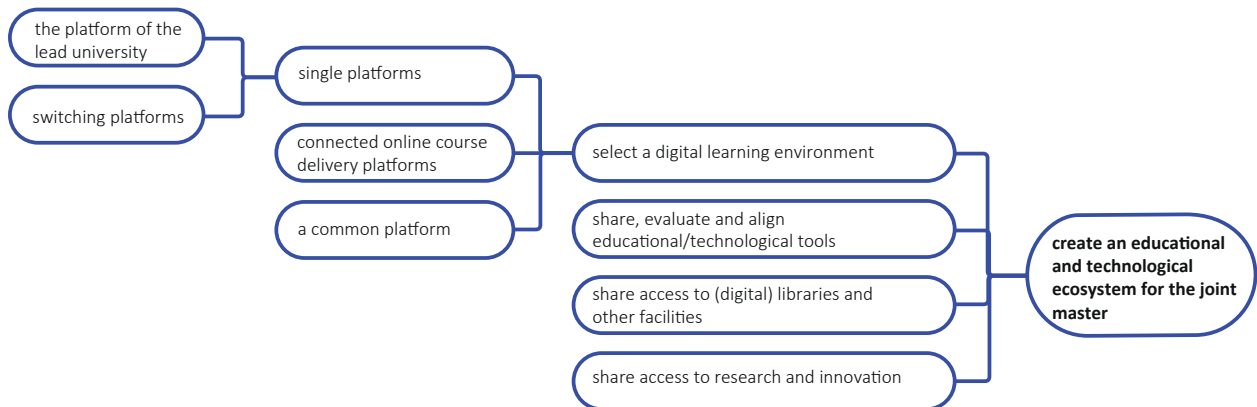
The partnership has to take decisions on sharing a joint educational and technological ecosystem for the joint master's programme:

- Choose a digital learning environment;
- Share, evaluate and align tools;
- Share access to digital libraries and other facilities
- Share access to research and innovation

Choose a digital learning environment

Determine on which learning environment / platform partners will organize learning activities.

A first option is that all partners organize online learning activities on one learning platform, preferably the platform of the leading university, which is comfortable for the learners as they do not have to switch platforms during the programme.

A second option is that learners do indeed switch learning platforms when starting a course at another partner university, which is probably comfortable for teaching staff, but less so for students. In this case, the platform is linked to the course followed. The learning platform is the linked to the physical mobility paths in the joint programme: students switch platforms as the curriculum progresses. In this case, teachers can easily use software and extensions that are linked to the learning platform they are used to.

A third option is that institutional learning platforms are interconnected. In alliances of European Universities (EUI), many courses are planned to be organized together in a blended or online format. In this case, it makes sense to look for a smart connection between institutional platforms in the alliance for all collaborative courses and programmes and mobility schemes. OpenU prepares middleware for making such connections.

A fourth option would be to support online courses and programmes on a national or European platform accessible to all learners. Such a common platform supports universities and teaching staff in the design of courses and programmes, including interactive learning communities. Some countries, such as Finland, are experimenting with such national platforms.

In practice, the European MOOC platforms already fulfill this task for online courses (MOOCS) and (MOOC-based) programmes up to university level, in particular (eg Futurelearn; France Université Numérique, FUN; Miriadax; EduOpen).

Share, evaluate and fine-tune tools

See above under "design the joint curriculum Share, evaluate and fine-tune tools

Share access to digital libraries and other facilities

Share access and guide students in using resources in digital libraries in the respective partner universities and faculties, extending and enhancing their learning environment for assignments, project or thesis work.
Provide students with access to other institutional facilities such as digital labs, simulations, learning games, where applicable.

Share access to research and innovation

At universities, research, innovation and education are intertwined (the knowledge triangle). Ensure students have access to relevant research and innovation in the partnership, for example for preparing projects and thesis work.

Select a digital learning environment

Decide on which learning environment/platform partners will organize their learning activities.

A first option is that all partners organize online learning activities on a single learning platform, preferably the platform of the leading university, which is comfortable for the learners as they don't have to switch platforms during the course of the programme.

A second option is that learners indeed switch learning platform when they start a course at another partner university, which is probably comfortable for teaching staff, but less for students. In this case, the platform is connected with the course followed. Actually, this is connected with the physical mobility paths in the joint programme. Students switching university as the curriculum proceeds. Teaching staff can easily use software and extensions connected with the learning platform they are used to.

A third option is that institutional learning platforms or connected with each other. In European University alliances (EUI), many courses are planned to be co-organized in a blended or online format. In this case, it is useful to look for a smart connection between institutional platforms in the alliance, serving all collaborative courses and programmes and mobility schemes. OpenU is preparing middleware for making such connections.

A fourth option would be that online courses and programmes are supported on a national or European platform, accessible for all learners. On such common platform, universities and teaching staff are supported for designing courses and programmes, including interactive learning communities. Some countries, eg Finland, experiment with such national platforms.

In practice, the European MOOC platforms fulfil already this task for online courses (MOOCS) and (MOOC-based) programmes up to a degree level, notably (eg Futurelearn; France Université Numérique, FUN; Miriadax; EduOpen).

Share, evaluate and align tools

See above, under "design the joint curriculum Share, evaluate and align tools

Share access to digital libraries and other facilities

Share access and guide students to use resources in digital libraries in the respective partner universities and faculties, extending and strengthening their learning environment for doing assignments, project or thesis work.
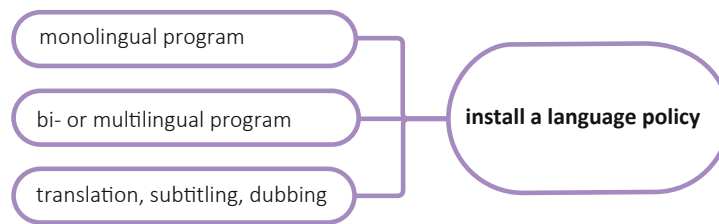
Give students access to other institutional facilities such as digital labs, simulations, learning games, where appropriate.

Share access to research and innovation

In universities, research, innovation and education are intertwined (the knowledge triangle). Make sure that learners have access to relevant research and innovation in the partnership available on databases, websites and learning environments, for example to research documents, thesis work, webinars, projects and conferences.

Install a language policy

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┌─────────────────────────┐
│   monolingual program   │───┐
└─────────────────────────┘   │
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│ bi- or multilingual program │─┼───│ install a language policy │
└─────────────────────────┘   │   └─────────────────────────┘
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│ translation, subtitling, dubbing │─┘
└─────────────────────────┘
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Guidelines

Most collaborative programmes use one language as the teaching language, usually English. In joint master's programmes, students deal with different languages and associated cultural backgrounds. Improving intercultural and communication skills can therefore be an explicit objective of a joint master's. In some joint programmes, each university therefore teaches in its own language, which is a challenge with "minor" languages.

In a digital environment, the programme board can also opt for the translation of a course or a course package in the programme. This has become easier with modern language software. The interaction between peers who speak different languages is then still a challenge, although in the European context most (young) learners have some level of English language skills.
In such environment, lectures or videos that are part of the programme can eventually be under-titled or dubbed, as is the case, for example, with many MOOC courses.

Determine a joint admission framework
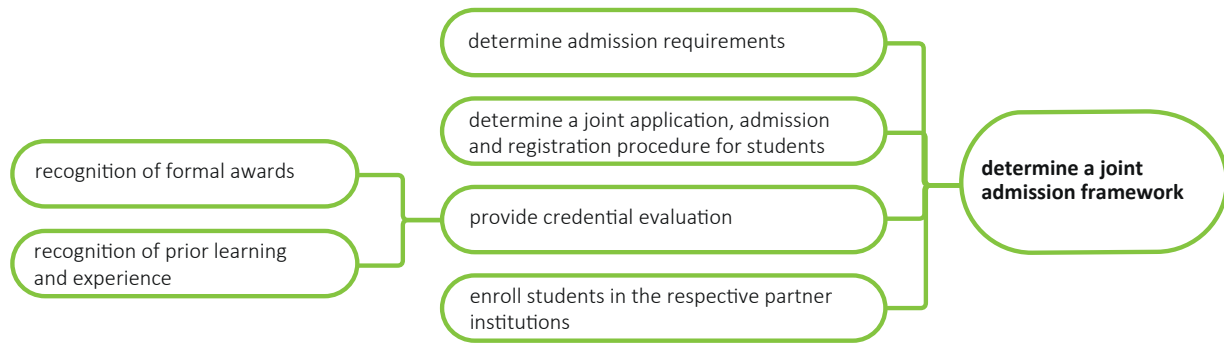
The programme team must establish a joint admission framework, which includes the following tasks:
• Determine admission requirements;
• Determine a joint application, admission and registration procedure for students;
• Provide credential evaluation;
• Enroll students.

Guidelines

Determine admission requirements

The programme team can determine various entry requirements:

• A bachelor or master's degree in a relevant field;
• Proof that the student has already acquired prior competences (knowledge, skills) needed in order to follow successfully the joint master's programme, showing his CV or learning portfolio, work experience and professional development certificates.

On this basis, the board will evaluate the student's readiness for the programme and advise him for admission, eventually proposing a preparatory course or course unit.

Determine a joint application, admission and registration procedure for students

The programme team, chaired by the lead university and constituted by a representation of each of the partner universities, meets on admissions before each time a cohort of new students is entering the programme.

The programme team adopts a joint application and admission procedure which is transparent, fair and objective. It will also assure equity, taking into account the life conditions of students with special needs or different social backgrounds.

Provide credential evaluation

Credential evaluation is sometimes needed in case the admission committee can't estimate the validity of formal qualifications obtained in international universities. The programme team will evaluate these qualifications or course credits, supported by institutional credential evaluation services and the NARIC office (European Commission, 2020).

The team can also assess and formally recognize prior knowledge or experience according to institutional rules and it can award credits (ECTS) for it. This exempts the student from units or parts of the joint master's programme. In this regard, most institutions follow the rules of the ECTS Guide.

Enroll students in the respective partners institutions

For being awarded course credits and the joint master's diploma at the end of the programme, students must be enrolled in each of the partner institutions. A student can register for the programme at any partner institution, by which he gets a main registration and a secondary registration in the other institutions according to schemes to be elaborated between the respective student administrations. This results in the capacity for each of the rectors or deans of faculty to sign certificates and diplomas.

The fees associated with the registration are distributed among partners according to joint rules (see below).

Determine examination regulations

agree on the organizational framework of the examinations

agree on a joint grading system

agree on awarding the joint diploma and on possible modular awards or microcredentials

define the descriptors of he joint diploma supplement

determine examination regulations
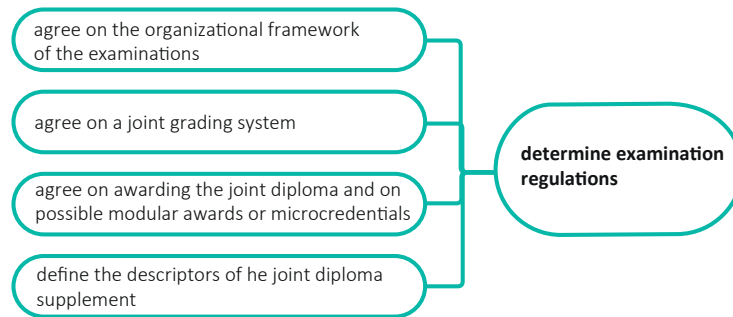
The programme team develops joint examination regulations by which following aspects have to be considered:

- agree on the organizational framework for the examinations;

- agree on a joint grading system;

- agree on awarding the joint diploma and on possible modular awards or microcredentials

- define the descriptors of the joint diploma supplement.

Guidelines

Agree on the organizational framework for the examinations

The partners should agree on common exam methods and mechanisms to assess students' performance, in particular with regard to identity verification, proctoring exams, academic and professional recognition and exam types.

Formative assessment and feedback, as well as peer evaluation, are tools to improve learning during the course and to promote effective learning.

Valid final exams are required to award credits and certificates for the joint learning programme.

Partners need to agree on a common approach to both.

Agree on a joint grading system

European universities probably use different grading scales, for example 1-20; 1-10; 1-5 or 1-30. In some countries, almost a binary pass-fail system is used without further distinction. Performance on these different grading scales is often difficult to compare and can complicate the transfer of records as the examination committee must reach consensus for awarding a final grade or certificate to each student.

That is why it is important that partners use a common grading scale for the programme (preferably the scale of the main university, for example 1-20).

In addition, the transcript or records should be based on the student's performance against pre-specified learning outcomes or competences (assessment based on criteria). It should not be based on a student's (normalized) statistical place in the class (norm-referenced assessment), which would raise ethical considerations. Partners should retain exam copies to ultimately enable the examination committee to rescale performance according to the chosen grading scale prior to the awarding of certificates.

Agree on awarding the joint diploma and on possible modular awards or microcredentials

The teaching staff organizing a course in the joint programme is academically responsible for the final examination of the course. Consequently, the exam must always be conducted by this staff. The credits are awarded accordingly by the university to which the staff belongs.

The certificate for the entire joint master's programme is awarded by the joint examination committee or programme board, based on the total performance of the student on all courses. This requires common rules and sometimes a collegiate deliberation and jurisprudence at the end.

From an administrative point of view, students' grade records should be stored in the joint database developed in the leading university's system. The diploma supplement can be rolled out through this system.

Define the descriptors of the joint diploma supplement

The certificate for the short learning programme must be accompanied by a joint certificate supplement consisting of information as described in the ECTS Users' Guide and Europass (see above, under "Agreement on qualifications"). The examination committee must agree on the descriptors of this diploma supplement.

Agree on a joint quality assurance and accreditation scheme
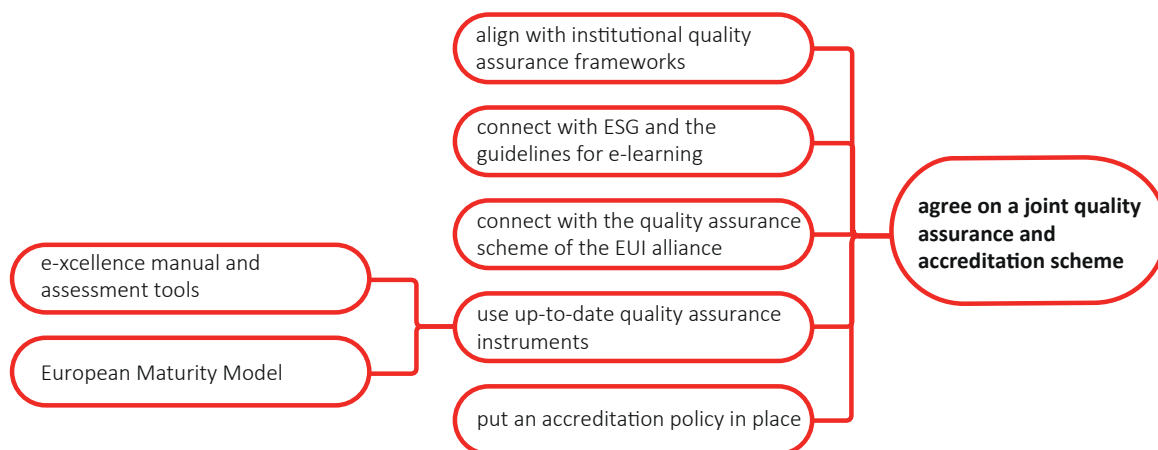
> **The quality assurance for a joint master's programme is a common responsibility of the partnership. In this respect decisions have to be taken about:**
>
> - Align with the institutional quality assurance frameworks;
> - Connect with Standards and Guidelines for Quality Assurance in the European Higher Education Area;
> - Connect with the quality assurance scheme of the EUI alliance;
> - Use state-of-the-art quality assurance instruments
> - Accreditation.

Guidelines

Align with institutional quality assurance frameworks

The programme team draws up an integrated quality assurance plan for the joint pro-gramme, building on the internal quality assurance of the respective universities.

Teaching staff is responsible for the scientific content and the level of the courses within the joint curriculum. As an institution, each partner university is responsible for the quali-ty assurance of the courses taught by its teaching staff in the programme. The programme team can add quality criteria and procedures for the entire programme, for example with regard to specific (joint) learning activities or aspects of the curriculum.

The joint programme team draws up the quality assurance reports and discusses the re-sults of the institutional quality assurance.

Quality assurance takes into account several criteria and indicators, in particular:

- study progress and success;
- correspondence of the study results with the learning outcomes and pre-specified competences;

- learning experience satisfaction during the programme;
- the content and level of the programme;
- data from learning analytics.

Connect with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)

The institutional quality assurance procedures should comply with ENQA Standards and Guidelines (ESG) (ENQA, 2015).
For the aspects of online learning, they follow the Considerations of the ENQA Working Group for Quality Assurance and E-learning Huertas, 2018).

Connect with the quality assurance scheme of the EUI alliance

The EUniQ project (2019-2021) is developing a quality assurance approach for alliances of European universities (EUI). This approach focuses on multicampus education of which joint programmes are a backbone. The project develops a truly European approach to quality assurance, allowing the replacement of multiple national quality assurance procedures in the alliances.
The EUniQ consortium consists of eight quality assurance (QA) agencies, six ministries and the European stakeholder organizations EUA, ESU and ENQA. It will help the alliances to both define and self-assess their quality.

These key questions were leading in the pilot phase:

Use up-to-date quality assurance tools

Right from the start of Erasmus Mundus, EUA and ENQA have developed a quality assurance framework for joint master's programmes responding to institutional and inter-institutional challenges (EUA, ENQA, 2006). Later, EQAR linked quality assurance of joint master's programmes to European Standards and Guidelines (EQAR, 2016).

E-xcellence

E-xcellence is a quality assurance tool for online, open and flexible education (Ubachs et al., 2015). The self-assessment tool is accompanied by a comprehensive manual that provides guidelines for improvement, covering the design of blended and online courses and curricula, student and staff support, and strategic management. E-xcellence also offers on-site assessments.

EMBED

The European Maturity Model for Blended Education (EMBED) can be used to assess the maturity level of courses, programmes and institution-wide facilities (van Valkenburg et

al., 2020). The concept of maturity refers to the degree of regular formal and deliberate optimization of the design and the implementation of a programme, based on the evidence-based decision-making by the programme team and individual teaching staff.
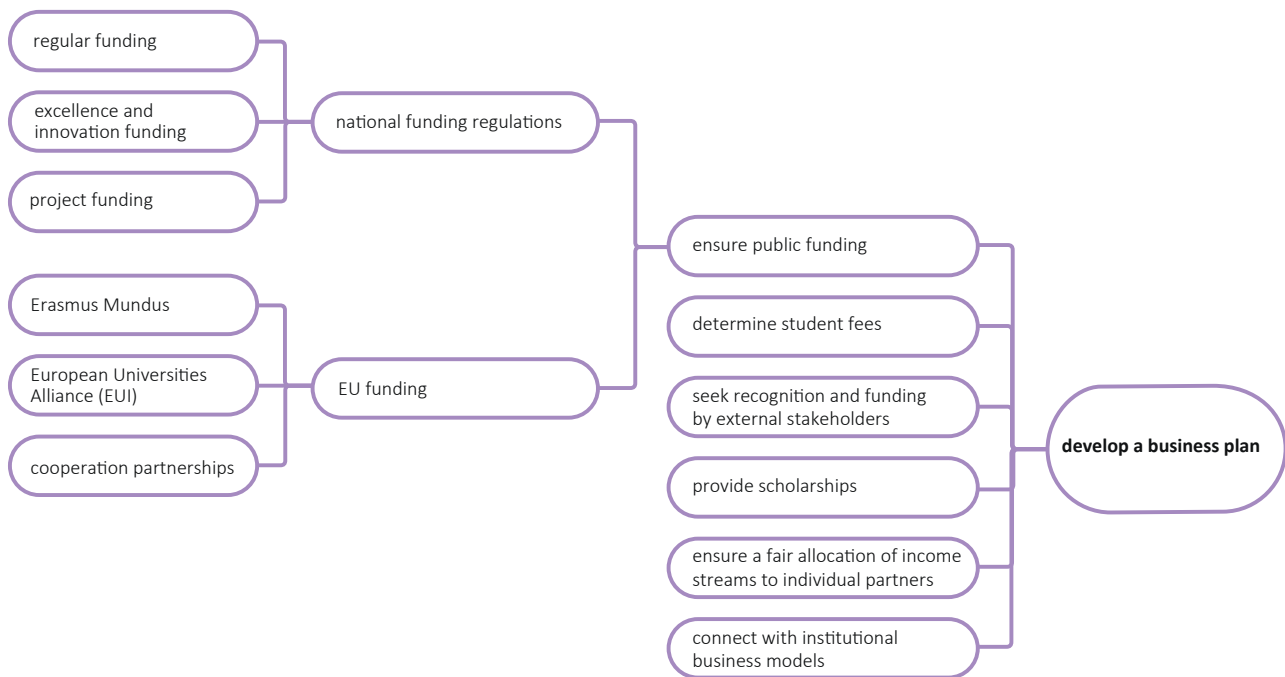
Put an accreditation policy in place

In most European countries, universities are now accredited at the institutional level. As a result, degree programmes are no longer systematically accredited at the programme level. Institutional accreditation means that the institution has internal procedures in place guaranteeing the quality of courses and programmes.

However, even within an institutional accreditation framework, it is still possible that an individual university programme will undergo an accreditation procedure when it is selected for doing so by an external review committee.

The programme team has to put an accreditation policy in place, taking into account procedures in the respective countries. This policy can assure that a joint master's programme has to undergo only one procedure by a (national) agency recognized by EQAR., if such procedure is requested.

Develop a business plan

back to overview

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regular funding ──┐
                  │
excellence and    ├── national funding regulations ──┐
innovation funding│                                   │
                  │                                   │
project funding ──┘                                   ├── ensure public funding ──┐
                                                      │                            │
                                                      │   determine student fees ──┤
Erasmus Mundus ───┐                                   │                            │
                  │                                   │   seek recognition and     │
European Universities├── EU funding ──────────────────┘   funding by external     ├── develop a business plan
Alliance (EUI)    │                                       stakeholders ────────────┤
                  │                                                                │
cooperation       │                                       provide scholarships ───┤
partnerships ─────┘                                                                │
                                                          ensure a fair allocation │
                                                          of income streams to     │
                                                          individual partners ─────┤
                                                                                   │
                                                          connect with institutional
                                                          business models ─────────┘
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The partnership has to develop a business plan for the joint master's programme which is dependent from a set of parameters and national and institutional policies and strategies:

- Ensure public funding;

- Determine student fees;

- Seek recognition and funding by external stakeholders;

- Provide scholarships.

- Ensure a fair allocation of income streams to individual partners;

- Connect with institutional business models.

Guidelines

Ensure public funding

The national funding of joint master's programmes can vary widely from country to country. Master's programmes are funded from primary funding from universities. Since a master's programme is composed of several courses from different universities, the overall government funding of a joint master's can be challenging.

When the funding is based on the number of students, European students count in the same way as national students, while the regime for non-EU students can be quite different.

National project funding is supportive for the development of new joint master's programmes, but not sufficient to ensure their long-term sustainability.

European funding for the preparation, the development and implementation of joint master's programmes can be found in the Erasmus Mundus scheme as well as by integration of joint programmes in Cooperation Partnerships (European Commission, Erasmus + Programme Guide, 2021)

Most importantly, the development of joint master's programmes is also funded "indirectly" under the European Universities Initiative (EUI), with which alliances develop innovative education and mobility formats.

Provide student fees

The partners jointly set a registration fee for the joint master's programme. Possibly, they can differentiate this fee for individual and collective registrations. They must ensure that individual fees are affordable for learners.

A complicating factor is that tuition fees for higher education generally differ from country to country and in some countries even tuition fees are not paid.

In determining enrollment costs, partners need to balance fees in different national systems and other public and private revenue streams on the one hand, and the operational costs of the programme on the other.

Seek recognition and funding by external stakeholders

In some areas relevant to employability and innovation, partners may seek the interest of external stakeholders such as companies, business sectors or professional organizations to recognize and support a joint master's programme, for example through sectoral funds.

In some countries, personal learning accounts are created and can support students participating in joint master's programmes eligible for continuing education.

Provide scholarships

in the case of high enrollment costs, joint learning programmes can provide scholarships to individual students, sponsored by companies or other stakeholders.

Ensure a fair allocation to partners

With government funding, partners are bound by national regulations. When developing business models, fees and private funding flows can be split between partners based on their actual contribution to the programme.

Connect with Institutional business models

Joint master's programmes form an integral part of an institution's education offer. At the same time, they are co-owned by each individual partner university. Consequently, they should be managed as a separate entity in each institution. In order to promote innovation, the income streams for joint programmes should be allocated directly to the faculty and to the joint programme team.

Develop a student recruitment plan
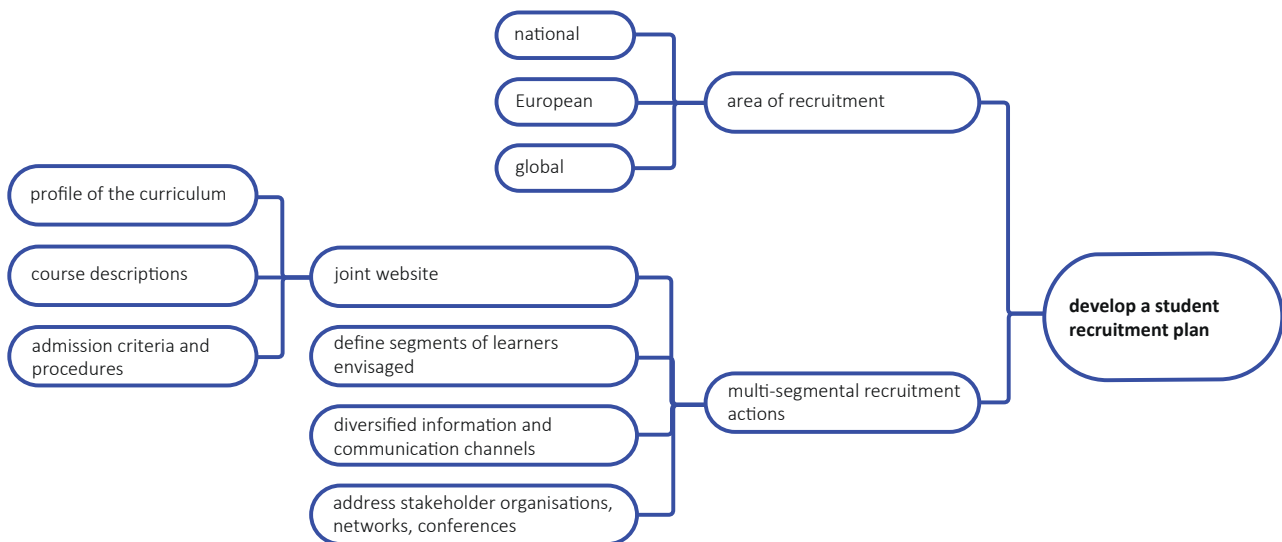
Partner universities have to conceive a joint student recruitment action plan for the joint master's programme, determining:

- Define your recruiting area
- Organize multi-segmental recruitment campaigns

Guidelines

Define your recruiting area

Depending on the objectives and design of the joint master's programme, partner institutions can recruit students at national, European and global levels. In the case of a transnational delivery, course and programme designers must consider the characteristics of the students and contexts that transcend their institutions or partnership.

Organize multi-segment recruitment campaigns

The partnership should organize recruitments for transnational delivery. A joint website for the joint master's gives students access to information about European joint master's programmes and links them to an application form to start the admission process. It clarifies the objectives and profile of the study programme, the course descriptions and testimonials, the student profile and the admission criteria.

In specific cases, a link can be published on the Erasmus Mundus or the EIT websites.

Recruitment campaigns will be launched for universities around the world, scientific and professional organizations, business sectors, alliances and networks, as well as individual students.

Various communication channels can be used, such as mailings, social media and participation in conferences and student recruitment fairs. Communication and recruiting actions should be set up per target segment of students.

Develop a sustainability framework
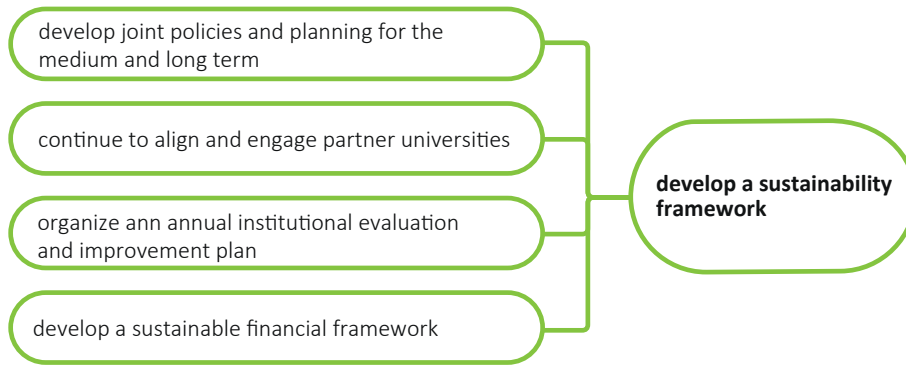
The partnership develops a sustainability framework for the joint master's programme, based on strong basis:
• Develop joint policies and planning for the medium and long term;
• Continue to alignment and engage partner universities;
• Organize an annual programme evaluation and improvement plan;
• Develop a sustainable financial framework.

Guidelines

Common policy and planning for the medium and long term

The partner universities have a medium and long-term policy and planning for the joint programme with qualitative and quantitative milestones related to attracting national and international students, income streams, study progress and success, learning agreements with third universities, collaboration with stakeholders and other factors that they take into account want to keep.

Coordination and involvement of the partner universities

The partner universities remain aligned and committed to the shared objectives, main structure and pedagogical principles of the programme and the qualifications awarded. They regularly assess the relevance of the programme for the partnership and the individual universities.

Annual evaluation and improvement of the programme

The partnership carries out an annual course and programme evaluation with recommendations for improvement. The evaluation may cover dimensions such as the relevance and coherence of the programme, its alignment with the technology ecosystem for course delivery, the interactions between staff and students, learning communities and discussi-

on forums, the learning experience and workload of students, and the inclusiveness of the programme.

With regard to digital teaching and learning, the E-xcellence instrument can contribute to this evaluation.

The European Maturity Model for Blended Education is suitable for assessing the maturity of digital learning aspects of the programme, especially for blended programmes.

A *sustainable financial framework*

The partnership should develop a medium and long-term financial plan, starting from the original business plan, consisting of revenue streams from government funding, tuition fees, outside stakeholders and sponsored scholarships. The plan also covers the allocation of income streams to individual partners.

The respective institutional frameworks must also ensure that the programme revenues are allocated to the faculty and to the joint programme team according to the financial planning.

The plan will also be flexible, taking into account foreseeable and unforeseen changes. Therefore, it should be reviewed annually with advice from financial experts.

Conclude a consortium agreement

To consolidate joint responsibilities and activities, a consortium agreement is to be concluded which will concern:

- The composition of the partnership;
- The role of the programme team;
- The objectives of the programme;
- The main structure of the programme;
- The main pedagogical principles;
- The mode of delivery;
- Mobility agreements;
- The qualification awarded;
- The language policy;
- The admission;
- The examination committee;
- Quality assurance mechanisms;
- The financial management.

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