Dual Studies Handbook

Guidelines for Establishing and Implementing
Dual Studies Programs in Palestine

- 2023 -

LIST OF ABBREVIATIONS

AGFE	Al Ghurair Foundation for Education
AQAC	Accreditation and Quality Assurance Commission
AQU	Al-Quds University
DAAD	German Academic Exchange Service
DHBW	Duale Hochschule Baden-Württemberg
DS	Dual Studies
ECTS	European Credit Transfer and Accumulation System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
IQRAD	Loan Fund for Undergraduates in Palestine
MoHESR	Ministry of Higher Education and Scientific Research
MoL	Ministry of Labour

0   INTRODUCTION TO THE HANDBOOK

Background

Dual university studies are a relatively new phenomenon in the international education discussion. However, increasing concerns regarding the employment orientation of purely theory-based academic training have spurred the introduction of dual and practical elements into universities worldwide. Dual Studies refer to a systematic combination of theoretical university education with practical training and industry exposure at the workplace.

The **objective of Dual Studies** is to orient education more towards the qualification needs of the industries (i.e., the market demand), thereby improving both employability of graduates and the access of companies to an adequately trained workforce. Increasing demand-orientation of academic training in the context of Dual Studies does not only mean incorporating practical, industry-based training in the program. It also implies a structured interaction with the industries in order to make the overall curriculum more relevant for the tasks at future workplaces.

Proven **benefits** from Dual Studies programs include improved professional attitudes of students, enhanced employment outcomes, increased industry relevance, and savings in recruitment and training costs for the participating companies. For universities, the improved employability of Dual Studies graduates is a unique selling point for promoting their academic programs.

German institutions have been **pioneers in dual academic education**. For over 50 years different institutions have practiced Dual Studies in a variety of sectors and careers – with enrollment rates steadily increasing. Universities of Applied Sciences have added dual training offers to their portfolio, and new Dual Universities and Professional Universities have emerged. Thereby, the dual approach is not limited to bachelor's degree programs, but also expands to master's degrees programs. Presently, over 100.000 students are enrolled in more than 1.500 Dual Studies programs with over 50.000 partner companies in Germany.

The **Duale Hochschule Baden-Württemberg (DHBW)/Baden-Württemberg Cooperative State University** has been a valued partner for piloting Dual Studies in Palestine. It is the first and largest dual university in Germany. Over 34.000 enrolled students and 9.000 partner companies are presently enrolled in about 40 different study programs in the fields of Business, Finance, IT, Engineering, Health, and Social Work. **[DHBW website]**

Al–Quds University (AQU) in Jerusalem/Abu Dis was the first University in the Middle East to embark on a Dual Studies program to enhance the job opportunities of their graduates. In collaboration with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, AQU has successfully accredited and introduced several Dual Studies bachelor's degree programs in the fields of Engineering, Information Technology, and Business since 2015. AQU's valuable experiences have found their way into **[AQU Dual Studies website]**

this handbook in manifold ways, serving as an example for several processes related to the introduction of Dual Studies in Palestine.

The relevance and success of Dual Studies have been acknowledged by the Palestinian **Ministry of Higher Education and Scientific Research (MoHESR)**, which supports the expansion of the approach to further universities. To this end, regulations concerning dual academic studies have also found **recognition in the regulatory framework (2021)** for higher education in Palestine. The "Instructions for Dual Education Programs" specify several aspects of Dual Studies provisions including e.g., admission, accreditation, and cooperation instructions, and will be referred to in several sections of this handbook.

This handbook mainly refers to "companies" as Dual Studies partners for simplicity and readability reasons. However, the dual approach must not be limited to private sector training partners but may (depending on the study program) also involve **public sector institutions** (e.g., national and municipal administrations) as well as **non-governmental organizations**.

Purpose of the Handbook

The purpose of this handbook is to **inform and guide relevant stakeholders** at universities and supporting partners with regard to setting up and operating new dual academic studies programs at Palestinian universities. To this end, the handbook documents **principles, and examples for key processes** from initial set-up over implementation and collaboration processes to certification and quality management processes.

Given the specificities of every location and educational institution, however, the handbook does not intend to be **an exact blueprint or instruction** to be followed one-on-one by other universities. It is rather a generic guideline that can help universities in defining their own specific processes and priorities, which may differ from the ones outlined here. In this sense, the handbook may be further developed into an individual institutional process manual for Dual Studies.

Structure of the Handbook

The figure below illustrates the **sequence of chapters,** which is derived from the sequence of key processes for the set-up and management of Dual Studies programs.

Figure 1: Handbook structure
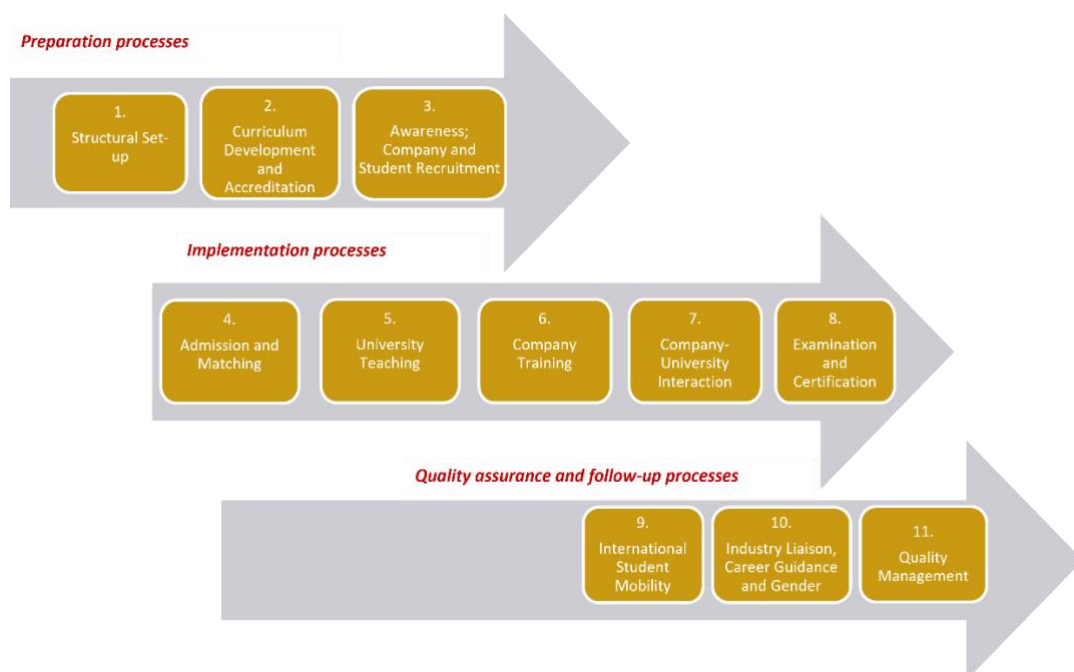
Each **chapter of the handbook** usually consists of:

- a short, **general background** on rationale, framework conditions, principles

- a **description of the main steps** for the implementation of key processes, possibly including different design options and examples (mostly stemming from DHBW and the AQU pilot)

The **hyperlink column** on the right side of the pages refers to relevant websites as well as annexed documents of the handbook. Key references are made to:

- the relevant sections of the **MoHESR instructions for Dual Education**   [MoHESR instructions](#)

- a **checklist of key documents** (regulations, formats, templates) **to be developed** for the establishment of Dual Studies programs   [Checklist](#)

Limitations of the Handbook

In order to maintain a **manageable volume** for a practical guide, the handbook does not describe every detail of the implementation processes. The idea is to summarize the key steps and procedures in the handbook while referring to the regulations and formats to be developed for detailed arrangements in the checklist. Again, as mentioned above, specific procedures will have to be developed individually based on the circumstances, regulations, and bylaws of the implementing universities.

Timeline Overview

The figure below illustrates a suggested timeline for the key processes for the initial set-up of new Dual Studies programs. This, of course, is only indicative and may vary according to different factors.

Figure 2: Timeline overview
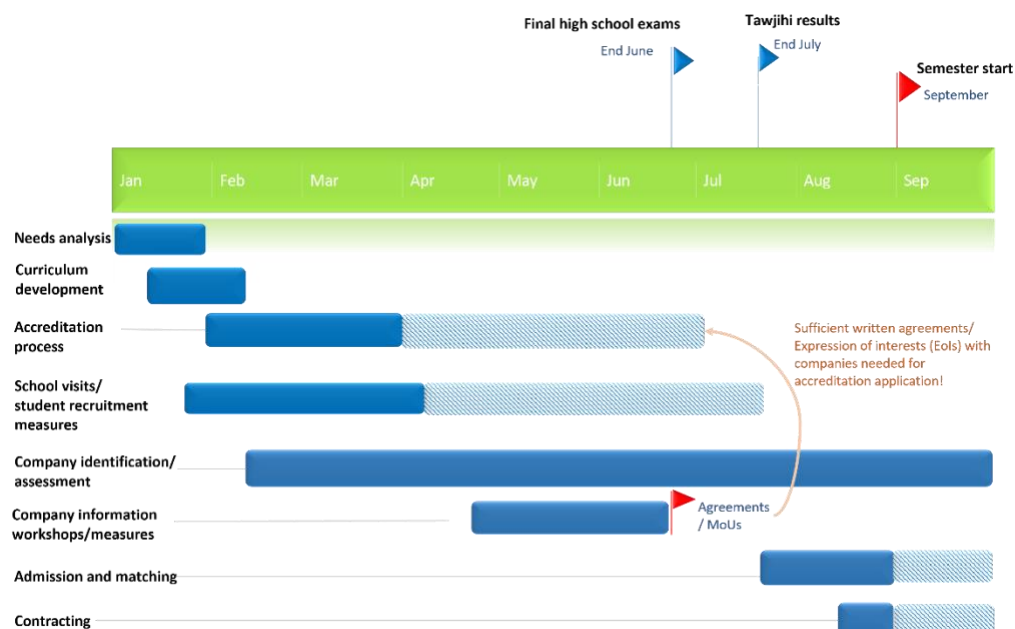
PREPARATION PROCESSES

1 STRUCTURAL SET-UP

1.1 Organizational and HR Structure

Background

When establishing Dual Studies at a university or college, there are three **main options** for the organizational set-up within the university structure (with fluent boundaries and several scenarios in between). They also depend on the intended "intensity" of the dualization:

I) Set up Dual Studies as a "**crosscutting option**" under the roof of existing technical faculties or colleges (e.g., a Dual Studies program under the Engineering Faculty and a Dual Studies program under the Faculty of Medical Science) with some form of joint coordination of dual elements

II) Establishment of a **designated faculty or college for Dual Studies** with its own teaching staff and academic regulations/bylaws, under whose umbrella Dual Studies programs from various scientific fields are managed

III) Transition to a **dual university**, with all study programs being of dual nature

As the third variant is not a relevant scenario for most existing universities, it will be neglected here. On the other hand, there is still little experience with the introduction of Dual Studies programs within existing "regular" university structures. Arguments for one or the other option depend on various factors, including the variety of Dual Studies programs that are planned and the number of students involved in Dual Studies.

Arguments for the crosscutting option (Option I) comprise:

- easier and faster set-up particularly when there is only a small number of students in the DS program
- use of academic synergies within technical faculties
- use of staff synergies (lecturers) with existing technical faculties
- higher acceptance within the university (no "competition" to traditional faculties)

Arguments for the faculty scenario (Option II) include:

- more autonomy in decision making
- direct access and appointment of own Dual Studies lecturers and professors

- centralizing expertise, activities and procedures specific to Dual Studies regulations and interaction with the companies (e.g., promotion)

- increased visibility of Dual Studies and identification with Dual Studies approach by personnel and lecturers

"Hybrid" Solutions in the Transition Process

In order to capitalize benefits from both scenarios, a variety of "hybrid" solutions is considered reasonable, especially if Dual Studies programs shall be set up in sciences in which the university is already implementing traditional study programs.

Figure 3: Faculty examples

A "faculty-like"
Department for Dual Studies

could be established, centralizing **key functions and processes related to the training elements**, such as the recruitment and liaison with companies and monitoring of practical phases.

Established Traditional Faculties

may be responsible for (all or only selected) **matters of the academic education elements**; including, e.g., organization of the academic semesters, the appointment of lecturers, approving of graduates, and certification.

Human Resources Structure

It must not be ignored that the operation of Dual Studies programs includes numerous **additional tasks and requires staff resources** that usually go beyond the implementation of regular academic programs. This concerns particularly the liaison and coordination with companies as well as additional promotional activities.

Irrespective of the agreed organizational structure, the **following key positions or functions** are considered essential for setting up and operating Dual Studies programs and should be factored into the human resource plan.

Table 1: Dual Studies – necessary roles and responsibilities

HEAD/DEAN OF DUAL STUDIES	The key responsibility of the dean or head of Dual Studies shall be the central coordination and management of all Dual Studies programs. Main tasks include: ■ Overall coordination and management of all Dual Studies programs at the university ■ Development and implementation of Dual Studies procedures and regulations (e.g., bylaws) ■ Representation and reporting of Dual Studies matters towards the university (e.g., university president, university councils, and committees), relevant ministries, the public, alumni and, most importantly, the partner companies. ■ Strategic development of Dual Studies ■ Human resource and budget management for the Dual Studies programs (depending on the agreed organizational structure and staff) ■ Possibly, management and supervision of academic matters of Dual Studies programs or liaising with deans of traditional faculties/departments for the alignment of academic semesters
STUDY DIRECTORS (PER DUAL STUDIES PROGRAM)	Study directors are generally in charge of the overall coordination of academic, administrative, and cooperation processes within their assigned study program. It may be part-time assignments with corresponding reductions in teaching quotas. Main tasks may include: ■ Process steering of initial and further development of their Dual Studies programs, including curriculum, course structure, and accreditation documents ■ Semester planning for the university training offer ■ Management of academic matters in the respective study program ■ Oversight of the development of company training plans for the students (see Chapter 6.2) in collaboration with relevant staff (e.g., company coordinators, lecturers) ■ Oversight of the coaching of companies and monitoring of students during the practical phases, including student evaluations

	- Planning and moderating meetings and workshops with partner companies (e.g., program workshops/company workshops) - Participate in promotional activities - Support matching and industry liaison activities in cooperation with the liaison officers/company coordinators - Responsible for the laboratories (if applicable)
DUAL STUDIES COMPANY COORDINATOR(S)/ LIAISON OFFICER(S)	Coordination with partner companies is a crosscutting task in Dual Studies programs and may require more than one full-time staff member depending on the scope of the Dual Studies programs. Main tasks related to the "administrative" coordination for Dual Studies include: - Recruitment and selection of new partner companies - Leading the matching process between students and companies - Managing the matching portal (if applicable) - Interaction with companies and students on administrative matters related to the practical training phases (e.g., contracts, change of companies) - Possibly, support the development of the company training plans for students in collaboration with the study directors or designated supervisors/lecturers - Possibly, support and document monitoring visits at the companies Additional company liaison and career management tasks may be assigned to the Dual Studies team (in collaboration with central university services) or directly integrated into central university services (career office, financial aid department, international office) - Acquisition and management of scholarships for Dual Studies students - Support internship opportunities for Dual Studies students abroad - Capitalization and management of the network of partner companies for systematic career guidance and job placement activities - Support the establishment of a Dual Studies Alumni network

LECTURERS	Depending on the agreed structure and arrangements, **lecturers** for the academic courses may be appointed from the own Dual Studies Faculty, other faculties or from outside university (including the private sector) for the **elements** of the Dual Studies programs.
	Lecturers tasks include:
	▪ Preparation of syllabi for the assigned lectures
	▪ Planning and delivering of the university lectures
	▪ Conduct examinations according to regulations
UNIVERSITY SUPERVISORS (FOR PRACTICAL PHASES)	The supervision and monitoring of the practical training at companies is a central element for the quality assurance of Dual Studies programs (see Chapter 6.2). Depending on the scope and arrangements made, the task may be assigned either to the company coordinators (see above), the study directors or distributed among other academic staff, or lecturers. Assigned supervisors should be qualified and able to communicate with companies at eye level.
	Tasks of company supervisors include:
	▪ Monitoring and coaching visits to companies in the practical phases as per agreed monitoring structure
	▪ Documentation of company visits and conduct of relevant student evaluations (as per agreed monitoring and evaluation forms)
	▪ Involvement in the preparation of training plans
LAB ENGINEERS	Depending on the study program and infrastructure of the university, lab engineers may be needed to support the academic practice in the labs:
	Key tasks may include:
	▪ Organization and implementation of practical lab courses for students
	▪ Procurement management and maintenance of the technical equipment in the labs
PROMOTION OFFICER/OFFICE	Especially at the beginning of new Dual Studies programs, targeted promotion efforts are required. These may be implemented by a designated promotion officer for Dual Studies or organized by central university offices/services.
	Main tasks include:
	▪ Management of promotion and recruitment activities for students of new programs

	- Support in the promotion and recruitment activities for companies - Design and development of promotion materials (e.g., brochures, banners, media coverage, flyers) - Management of Dual Studies website and social media channels (if applicable)
ASSISTANT(S)	Assistant positions may be split into regular assistance to the academic organization and specific assistance to Dual Studies and company relations. Main tasks include: - Support in the overall office and administrative management for Dual Studies programs (e.g., minutes, filing, letters, correspondence) with focus on academic parts as well as company cooperation aspects - Support in the application, admission, and matching process - Support in the management of the matching portal (if applicable) - Advice and support students in the registration and payment process - Planning and preparation of events, program workshops and company workshops (e.g., invitations, booking, catering) - Central information desk (by phone and in person) for interested students, parents, companies
CONSULTANTS, EXPERTS, ADVISERS (SHORT-TERM)	On a short-term basis, national and international experts may be hired for different needs: - Advisory for dual curriculum development and international academic liaison - Support in the development of new Dual Studies programs and accreditation processes - Software development for student admission and registration portals, designated portals for interaction with companies - Support in developing program processes, steering structures and procedures - Tracer studies, quality assurance

The table above shows only one out of many **possible distributions of tasks** and responsibilities in Dual Studies on different positions and persons. Certainly, the areas of responsibility can be assigned to other positions, as long as all tasks are reflected and clearly assigned in the overall HR structure.

The distribution of tasks and responsibilities does not only need to be clearly defined **within the designated Dual Studies team**, but also clarified and aligned with the **"traditional" faculties** (especially the deans) as well as **central university offices** (e.g., career center, international office, PR and marketing department, registration office).

It is recommended to develop a detailed **Responsibility assignment (RACI) matrix** together with the individual organizational and HR structure outline. The matrix should specify responsibilities and consultation needs for key tasks such as the development of training plans for students in the companies, the monitoring of practical phases, development of semester plans and assignment of lecturers, company recruitment, matching tasks, and promotion tasks.

Depending on the envisaged scope of Dual Studies and the expected workload, not all positions must be assigned as full-time jobs but may be combined with teaching responsibilities. A **transparent structure for the reduction of teaching quota** in return for taking over different management tasks should be defined in that case.

1.2   Steering Structure

Background

The steering structure is closely linked to the organizational and HR structures and defines the decision-making powers and paths on a strategic and management level.

The steering structure should reflect **consultation and decision making** with regard to:

- Strategic orientation
- Resource management
- Quality control and monitoring

A key **success factor of Dual Studies** is the **involvement of the private sector** not only in the implementation of training but also its representation in the strategic orientation of Dual Studies. Representatives of the private sector and partner companies should be involved in steering and decision-making processes **both on the study program level** and also on an **overall strategic level**. This involvement is crucial to constantly orient the training towards the needs of the private sector and in order to keep companies motivated and engaged.

At DHBW, for example, representatives of the partner companies are involved in the local **DHBW University Council(s)** on campus level, which is responsible for discussion and strategic decisions concerning overall study programs and examination regulations at the locality. Further, the DHBW University Councils take decisions about the establishment, modification, or cancelation of study programs, admission regulations, and matters related to the interaction between the university and partner companies.

Further, the partner companies at DHBW are actively involved in faculty or study program-specific **technical commissions or working groups**, which are mainly in charge of developing recommendations with regard to the **revision of curricula** and company training plans.

Lastly, regular meetings or **workshops** with all partner companies on the study program level take place.

1.2.1 Cooperative Steering Structures with the Private Sector

The **principle of cooperative steering** (i.e., involving both university and company stakeholders) on all levels of interaction should also be reflected in the consultative structure of Dual Studies programs at regular universities wherever possible. The detailed arrangements will certainly depend on the overall structure and goals of the Dual Studies programs at each university, as well as the existing private sector collaboration structures of the university.

The following figure highlights the **elements of cooperative steering and consultation** that should be considered.

Figure 4: Elements of cooperative steering and consultation

Dual Studies board/steering committee: Cooperative, program-overarching board on *faculty or university level* for overall strategic decisions with regard to the further development of Dual Studies

Cooperative technical commissions or working groups on *faculty or study program level* to review and develop recommendations for academic and curricular innovations

Program workshops/partner workshops for interaction, discussion and sharing of experiences with all partner companies on *local/ or study program level*

See Chapter 7

Dual Studies Board/Steering Committee

The establishment of a **cooperative steering committee** or board is essential for decision-making regarding Dual Studies on the **management level.**

The **functions of a steering committee** shall be:

- Formulation of policies and development of strategies for Dual Studies

- Decisions regarding new establishments, modifications, or cancellation of Dual Studies programs

- Strengthening the relations with the private sector

- Approval of suggestions made by the Dual Studies program workshops and working groups

The Dual Studies steering committee shall meet **at least once a year** (or as required).

Members of the steering committee (around 8-12) should include high-ranking representatives of the university, from ministries, and from the private sector:

- Representatives of the **university**, e.g., university president or relevant vice-presidents, dean of Dual Studies

- Representatives from the **private sector**, e.g., representatives of partner companies, members of chambers and associations

- Representatives from relevant **ministries**, e.g., Ministry of Labour (MoL), MoHESR

Cooperative Working Groups and Program Workshops

Possible further consultation structures and committees on a more operational level are introduced in [Chapter 7.1 – Cooperative consultation structures on study program level.](#)

1.2.2 Internal Steering Structure

In addition to consultation with partner companies and private sector representatives, the steering structure also needs to reflect internal decision-making processes. Councils and committees may be set up to structure decision making in the following aspects:

- **Coordination and consultations on the level of faculties/deans**, targeting specifically the alignment of Dual Studies with other concerned traditional faculties of the university, e.g., division of tasks, clarification of roles, conflict resolution, alignment of academic program and other overarching questions

- **Coordination and consultation within Dual Studies team**; targeting all operational matters such as curriculum structures, Dual Studies regulations, matching processes, program development and review of formats for contracts and monitoring

- **Academic councils**, responsible for tasks such as approval of students, awarding of grades, decisions on critical cases, approval of missing exams

1.3 Dual Alternation Structure

Background

An important aspect of Dual Studies is the **share and organization of workplace training or so-called practical phases**, which needs to be synchronized with the academic program. The industry share may differ according to:

- the **share of time** spent at the workplace

- the **share of credits received** for workplace training/practical phases

The timeshare usually does not correspond to the credit share – often the share of time spent at the workplace is higher than its share of credits earned.

At DHBW in Germany, the time spent at the workplace is 50%, while the share of credits earned for the practical phases is around 25% (48 out of 210 European Credit Transfer and Accumulation System (ECTS) credits for most Bachelor programs.

For **Palestine**, the *MoHESR Instructions for the Additional Standards for Dual Education Programs (2021)* stipulate that the share of training received at the workplace should be **between 40% and 50%** of the overall program.

Regarding the organization of the practical phases, i.e., the **rotation cycle** between the university and the companies, different options are possible:

- **Daily/weekly integration**, e.g., 2 days each week spent at the workplace.

- **Block rotation cycles**, alternating some months at a stretch of company and university phases

While the weekly integration has benefits in terms of continuity for the student and the company, **block rotation** may be better practically and logistically manageable in most university contexts, particularly in universities that also offer conventional study programs.

Exemplary 3-Month Theory-Practice Alternation Structure for Dual Studies

At **DHBW** in Germany, most Dual Studies programs operate under a **3-month theory-practice alternation** scheme, the same applies to Dual Studies at AQU. Given the logistical challenges in Palestine and the fact that participating companies may be spread over the country, a **3-month block theory-practice rotation** is considered the most suitable. Thereby, university periods can be as much as possible aligned with the academic semesters of the regular programs, and the practical phases may overlap with the semester breaks.

The parallel operation of different academic schedules, however, does pose a challenge for **synchronization and coordination with the regular**

academic programs regarding e.g., the organization of classrooms, lecturers, and other resources.

Figure 5: Exemplary Dual Studies calendar vs. "traditional" academic calendar
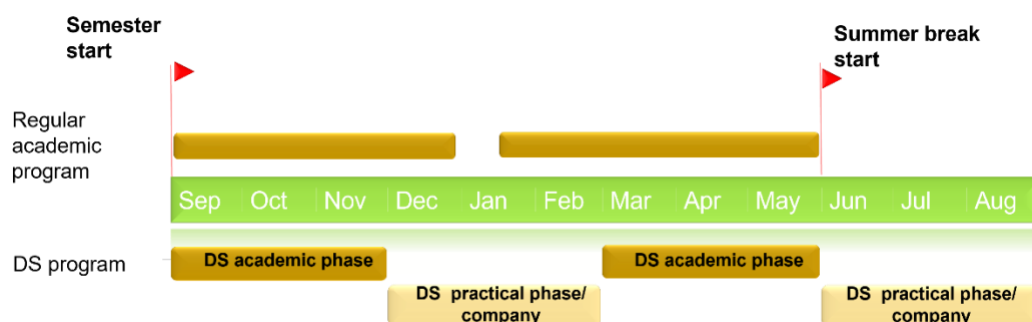
In this scenario, each semester consists of 12 weeks of theory and 12 practical weeks per semester of 24 weeks.

Since Dual Studies students usually do not benefit from semester breaks, reasonable **leave entitlements** need to be specified for the students. This can be either by scheduled breaks between or during theoretical and practical phases or by granting students a specified yearly leave allowance to be individually taken during practical phases.

A 3-month rotation cycle for a 4-year bachelor program (as usual in Palestine) would result in the overall scheme illustrated below.

Figure 6: Exemplary 4-year structure
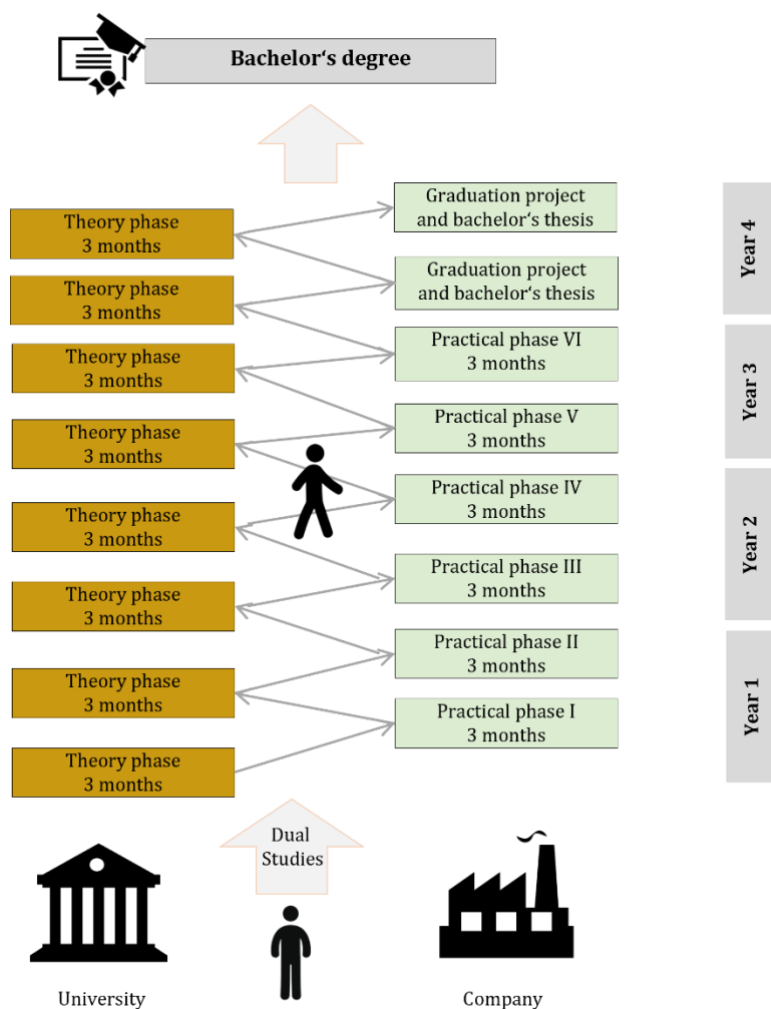
Alternative Scenarios

The following alternatives can also be considered for new Dual Studies programs:

- Starting with **two terms at the university** to prepare students better for practical phases, including their professional skills and behavior. The *MoHESR Instructions for Dual Studies* foresee the practical training to start at *the end of the first academic year at the latest* and thus would allow for this scenario. This will not necessarily need to be followed by two practical phases. Since the MoHESR instructions only foresee a minimum of **40% practical training**, it is generally possible to have more theory than practice phases.

- To cater to more students and given a limited number of appropriate companies, a system with **inverted shifts,** in which continuously one batch of students is at the university and the other at the companies, is often desired by partner companies. However, this requires significant efforts on the university side, as the academic program would have to run continuously throughout the year (or have two universities synchronizing their Dual Studies programs in the long run).

- If the "catchment area" of the university is rather small and partner companies are not too widespread, an ongoing **weekly/daily alternation** is more likely to be successful and can be considered.

1.4   Financing Structure

Background

A viable **financing structure for Dual Studies programs** is highly context-dependent. Compared to "traditional" university studies, Dual Studies involve additional costs for both university and students, but also additional potential financing sources.

Costs specific to dual approaches include, e.g.:

- Costs for promotional, training, and networking activities for/with partner companies

- Additional staff costs, e.g., for company coordinators, additional working hours for the development of training plans, monitoring, and supervision of practical phases

- Students' insurance during practical phases

- Salaries or compensations for students during practical phases

The decision on a financing structure **depends on the context and several influencing factors**, e.g., the status of the university (i.e., public, or private), the country standards in terms of tuition fees, and the willingness and ability of companies to contribute financially to the program.

In dual education approaches it is common that students are paid compensation or **allowance during practical phases**. The compensation assures company commitment and allows the student to cover some of his education and living expenses. It can also be seen as compensation for the work delivered, as usually the practical phases are never purely training related, but the students also contribute with their workforce to the companies' productivity and benefit.

In **Germany**, for example, where higher education usually does not attract any tuition fees, university costs are covered by the government. Further, Dual Studies students receive a monthly salary from the companies - not only during their practical phases but throughout the whole course of their studies!

Financing Structure for Dual Studies in Palestine

In Palestine, where the bulk of the university costs is usually covered by tuition fees, the financing structure may look as illustrated below.

Figure 7: Possible Dual Studies financing structure
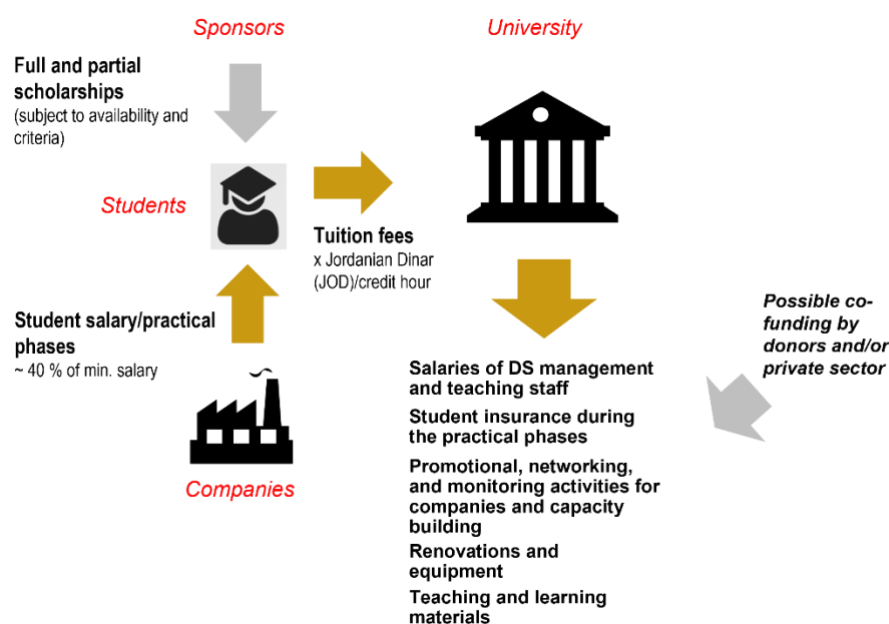
Tuition fees: Tuition fees are the main source of funding at Palestinian universities and are calculated on the basis of credit hours. Depending on the study program, the total amount of required credits (1 course generally corresponds to 2-3 credits hours) for most 4-year bachelor programs in Palestine is usually between 130 and 170 credits. Depending on the fee per credit hour, the total cost for the student is substantial with around 8.000-12.000 USD depending on the program. It is to be decided whether fees should also be paid for credits earned for practical phases. While this may seem inappropriate at first sight, it could be justified with additional coordination costs (s. above) of the university in Dual Studies programs.

Scholarships: Scholarship opportunities are often available to Palestinian students to fully or co-fund their tuition fees from a variety of sources. Given the innovative and challenging nature of Dual Studies programs, dedicated students are likely to be able to obtain full or part-time scholarships. In order to attract students, the universities' financial aid department should actively support students in their application for scholarships. Options include e.g., the *Hani Quaddumi Scholarship Foundation*, the *Al Ghurair Foundation for Education* (AGFE), the *Loan Fund for Undergraduates in Palestine* (IQRAD) (under MoHESR), or international donors such as *Enabel* (Belgian Technical Cooperation).

Student salary: In Dual Studies it is common that students receive an allowance during practical periods as compensation for the students' contribution to companies' productivity. The *MoHESR Instructions for Dual Studies* foresees compensation of at least **40% of the minimum wage in Palestine**, which presently corresponds to about 200 USD. Some companies may be willing to pay higher salaries. Allowing diversity in company compensations is generally beneficial, as it creates some competition among the companies to attract students, ultimately increasing companies' ownership and financial involvement in the program. On the other hand, it

MoHESR Instructions Article (3)

may lead to a disturbance among the students with lower salaries. As a consequence, it is suggested that the standard contract signed between the university, company, and student (see Chapter 4) shall always be based on the minimum salary, while other compensations or allowances may be arranged extra-contractually.

Student insurance: Student insurance for the practical phases is often an issue of concern and hassle for newly involved partner companies. The *MoHESR instructions* thus stipulate that insurance should be **provided by the university**. Ideally, this can be solved in form of group insurance which should cover all kinds of health hazards and accidents that may occur to students at the workplace.

MoHESR Instructions Section II

Other costs specific to the Dual Studies approach (e.g., promotional and training activities for companies) or targeting a qualitative improvement of teaching (e.g., equipment of labs, training of university personnel) require significant resources that need to be budgeted in. They may be subject to possible co-funding, e.g., by donors or the private sector.

A **financial plan** should be developed detailing the involved costs and revenues. This is usually also a requirement for the accreditation documents.

Checklist – Financial plan/budget

2   CURRICULUM DEVELOPMENT AND ACCREDITATION

2.1   Development of Dual Curricula

Background

Dual curricula emphasize the attainment of professional competencies in the respective academic field. Practical orientation is not only targeted in the company periods but also theoretical modules shall include elements of an application and real-world reflection. In addition to technical and academic knowledge and competence, Dual Studies further emphasize the development and promotion of personal, methodological, and social skills.

In a nutshell, the following **principles** are crucial to be considered for the development of dual curricula:

- Overall **orientation on the (present and future) industry and labor market demand**
- Inclusion of **personal, methodological, entrepreneurial, and social skills** in the learning objectives
- **Involvement of industry representatives** in the development, validation, and review of the curriculum
- **Synchronization of theoretical and practical phases** in a complementary way
- **Increased share of self-organized and project work** toward the end of the program

Framework Regulations for Dual Studies

As Dual Studies shall lead to a formal academic qualification, the relevant regulations for the development and accreditation of higher education programs need to be observed. The **requirements** include the **accreditation criteria** by the **Accreditation and Quality Assurance Commission (AQAC)** in [AQAC website] Palestine, which is the accreditation body for Higher Education programs in Palestine under the MoHESR.

Also, **university-specific regulations and bylaws** must be observed. These regulations usually foresee minimum credit achievements for the different faculties. Also, university requirements often include, in addition to the specific program-related courses, several generic course categories ("university requirements") from language to history classes.

The *MoHESR Dual Studies instructions* further stipulate that new Dual Studies programs should **fulfill or exceed the number of credit hours of equivalent full-time "traditional" courses** at the institution. Total credit requirements for most bachelor programs in Palestine presently require **between 130 and 170 credit hours**.

Curriculum Elements and Development Process

Against the background of the framework regulations, the strategic orientation for the development of the curricula has the **main requirements**:

- to fit the dual structure,
- to comply with local academic and accreditation standards and
- to address local industry needs.

The figure below illustrates the **key elements for dual curriculum development** in terms of experts to be involved and inputs to be considered.

Figure 8: Key elements in the curriculum development process
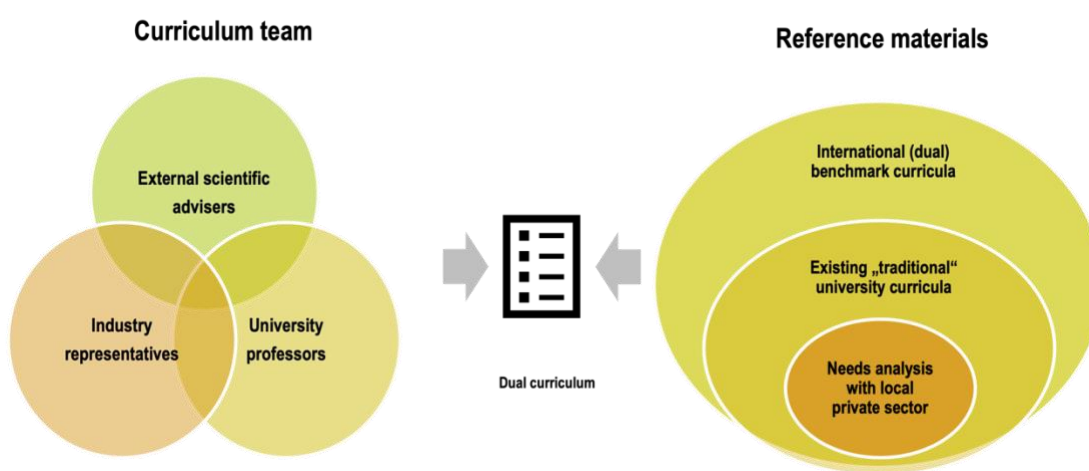
Dual curricula should be developed in consultation with partners from **academia and industry** in order to assure quality and relevance. In addition to academic staff from the university and industry representatives, a **commission or working group** may also **involve external scientific advisers** or experts, which ideally bring in the experience of practice-oriented curricula in dual university studies. Industry and company representatives should be involved particularly at the beginning (needs analyses, see below) and towards the end of the development process (feedback to and validation of curricula).

The following **key inputs** shall be taken into consideration for the formulation of new dual curricula:

- **Local needs analyses**: In order to meet the need of future employers and training partners with the study programs, it is essential to assess the local environment and demands of companies in the selected sectors. This may occur by "informal" company visits as well as by structured focus group discussions, surveys, and workshops with private sector representatives (companies, but also chambers and associations in the relevant fields).

- **Existing university curricula** of the already accredited non-dual (traditional) studies programs in related fields at the university shall be taken into consideration (if related traditional study programs are offered at the university).

- **International (dual) curricula** (e.g., dual curricula from DHBW) should be consulted as benchmarks or references in the development process in order to identify and reflect specificities of the dual approach as well as possibly general international benchmarks for selected technologies.

Credit Framework for Theory and Practical Phases

The credit framework and minimum amount of total credits stipulated in university regulations for academic programs must be observed.

Dual Studies curricula usually define a **content and credit framework** for both **theoretical education** at the university, and **practical training** at the companies:

I) **Academic courses** (university), which may comprise university requirement courses, courses required for all Dual Studies programs, and program-specific courses, possibly including specialization and elective courses (if applicable). Program specific courses should include labs and other practice-oriented course formats depending on the study program. In order to "fit in" the dual credits, some university conditions with regard to the distribution of credits may have to be amended, as e.g., a reduction of "university requirements" in the overall dual curriculum.

II) **Practical phases** (company)**,** based on joint core module descriptions for the practice phases and including the graduation project and thesis

There are no specific regulations in place to define the **share of the credits earned for practical modules** in the overall curriculum. At DHBW in Germany the share is around 25%, for Dual Studies programs at AQU the share ranges between **15-30 %**, which is also considered a reasonable range for new programs in the country.

Framework Contents for Practical Phases

For the contents of the practical phases, the challenge is to find a **balance** between a framework of key topics and competences binding for all companies to assure a **minimum standardization**, and the flexibility needed for the individual companies to adapt the training to their specific circumstances and technical focus.

The **MoHESR instructions** foresee that **course descriptions** shall be provided for **both academic and practical phases**. The contents in the practical phases shall be linked to the academic contents, but do not need to be chronologically aligned.

The dual curriculum must thus include module descriptions for each practical phase as well.

The **module descriptions** should define:

- the **broad technical contents** for each practical phase
- as well as **social and communication skills** to be acquired.

Based on the framework contents, again, **individual educational plans** for the practical phase shall be developed for each company and student (see [Chapter 5 – Company training](#)).

Curriculum Revision

Given the rapid changes in the private sector in a digitalized and globalizing economy, a **regular review of the course contents** is a central element of quality assurance of educational programs. The curriculum review shall be conducted in collaboration with the partner companies, picking up their ideas, suggestions, and innovations. Consultations during program workshops or collaborative technical working groups for each study program are an operational approach for the review.

Most ongoing adaptation needs (e.g., technological changes) can usually be addressed with modifications in the individual course syllabi (course curricula), and can thus be flexibly managed by the university. Changes in the overall curriculum framework, in turn, would impact the accreditation of the program and thus should only be targeted at longer intervals.

The options are further illustrated in [Chapter 7 – Company-University Interaction](#).

2.2   Accreditation Process

Background

The accreditation of Dual Studies programs must follow the **country-specific higher education accreditation standards**, which differ between countries and accreditation bodies.

Accreditation criteria, however, are usually similar, using qualitative and quantitative indicators for assessing the **demand, viability, and quality** of new study programs. This usually includes the program rationale (i.e., the labor market demand), the intended learning outcomes, detailed curriculum and contents, credit structure, qualification of management and lecturing staff, availability and appropriateness of infrastructure and equipment as well as the financial viability of new programs.

Challenges and Lessons Learned

Challenges to the accreditation of Dual Studies programs may result in the **assignment of credits for the practical phases**, which alters the overall credit structure as compared to regular academic programs.

Further challenges encountered and lessons learned with the accreditation of Dual Studies in Palestine are not necessarily related to the acceptance of the dual approach, but rather to general accreditation matters.

This includes e.g.:

- Challenges with the accreditation of Dual Studies programs may occur where similar regular study programs exist at the applying university. The **demand for two parallel programs** and the available resources may be questioned – a clear formulation of the *additional* need and resource availability is required.

- The identification and involvement of **evaluators** (from the AQAC side) that are **familiar with Dual Studies programs** in the accreditation process is highly advisable. Experts with this capacity and international experience are not widespread and need to be identified as early as possible

Palestinian Accreditation Requirements

In Palestine, the **Accreditation and Quality Assurance Commission (AQAC)**, operating under the MoHESR, is the responsible body for the accreditation of all new academic programs.

The core **accreditation standards** are formulated in the AQAC Summary of Standards for Accreditation. The standards cover different fields of quality and structural criteria:

- Administrative structure and governance

- Faculty and staff qualification

- Curriculum

- Students and admission requirements

- Assessment

- Program resources

The *accreditation application* for new higher education programs, including Dual Studies, postulates the following **documentation requirements**:

- Completed *accreditation form*

- **Approval of documents** from the quality assurance unit in the organization (e.g., academic/university council)

- *Program description*, containing:

  o Consistency with National Strategy

  o Economic Feasibility Study and Labor Market Study (graduates' specifications and employability opportunities)

  o General and specific mission and objectives and intended educational outputs/Intended Learning Outcomes (ILOs)

  o Dual Studies curriculum, incl. course names and numbers, credit hours, course descriptions, assessment regulations, tracks and specializations, and admission requirements

  o List and CVs of academic staff

- o Implementation plan
- o Related programs
- o Building and equipment
- o Written agreements with partner companies

The **MoHESR instructions** specify **additional requirements** for the accreditation of Dual Studies programs, including **written agreements** with a sufficient number of qualified company partners willing to provide training places.

Accreditation Steps for (Dual) Studies Programs in Palestine

The following steps must be followed in the accreditation process for Dual Studies programs.

Figure 9: Accreditation steps

1. Preparation of accreditation documents by university team and approval by relevant university council
2. Submission of *accreditation application* to AQAC by university president
3. *Accreditation report* by independent evaluators appointed by AQAC
4. Revision of application by university team *(accreditation supplement report)*
5. Assessmet of accreditation supplement report by evaluators and submission of *review report* to AQAC
6. Final accreditation decision and issue of certificate by AQAC

1. Preparation of **accreditation documents** for each study program; e.g. by the designated study director in collaboration with international Dual Studies experts (parallel to curriculum development). Then submission **of program(s) and accreditation documents** to the **academic/university council** for approval.

2. The submission of the *accreditation application* (see above) to AQAC is carried out by the university president.

3. **Assessment of the application** by AQAC evaluators based on the *AQAC Summary of Standards for Accreditation*. While evaluators

must be independent and commissioned by AQAC, it is advisable to facilitate contact with accreditation experts with experience in Dual Studies.

Evaluation results are summarized in the *accreditation report*, which contains requirements for immediate action or clarification and requirements for later action. The accreditation report is sent from the evaluators to AQAC, and from AQAC forwarded to the university.

4. Based on the *accreditation report,* the appointed university team prepares the *accreditation supplement report*, in which clarifications and amendments are provided according to the immediate action requirements. The accreditation supplement report is submitted to the evaluators via AQAC.

5. The evaluators prepare a *final accreditation report* in which the fulfillment of required actions in the supplement report is acknowledged.

6. Based on the Final Accreditation Report **AQAC takes the accreditation decision** and issues the **accreditation certificate**.

A **minimum duration of 6 months** should be planned for the overall accreditation process. Due to the diverse steps and the dispatch of all documents through AQAC delays must be expected.

3   AWARENESS MEASURES AND RECRUITMENT OF COMPANIES/STUDENTS

Background

The concept of dual higher education is still unknown in most countries but is becoming more and more popular. In the context of Palestine (and other countries wishing to introduce Dual Studies programs), it is necessary to create awareness of the benefits of the dual approach and generate interest in the concept. The better the concept is understood and acknowledged, the better the grounds will be paved for accreditation processes as well as the recruitment of companies and students.

Main Arguments for Dual Studies

In a nutshell, the **arguments** that can be brought forward for the **promotion of Dual Studies programs** are the following:

- **Innovation:** Dual Studies programs lead to new interactions, networks, and exchange between universities and the private sector, which can foster mutual information and technology transfer as well as innovation.

- **Demand-orientation:** The private sector influences curricula and training contents, thus enabling a more (also future) demand-oriented academic qualification, reducing the time and costs for companies to train graduates to their needs and ultimately increasing the productivity of the economy.

- **Employability:** Graduates will have gained practical experience and show significantly higher levels of employability.

- **Social responsibility**: Companies can contribute to the qualification of youth in their countries and at the same time develop their workforce.

- **Facilitated job placement:** The network of companies involved with the university facilitates diverse activities for career guidance and job placement, for the industries it means direct access to the best-qualified graduates.

- **International cooperation:** The cooperation with international partners in the Dual Studies programs facilitates the acquisition of scholarships as well as internships and jobs abroad.
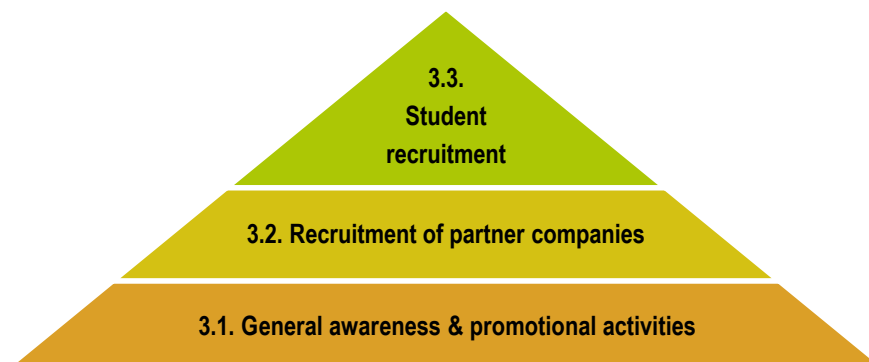
Based on general awareness and promotion measures, targeted activities to attract partner companies and students are key for the successful set-up of Dual Studies programs.

A **comprehensive guide for marketing Dual Studies programs** is available, outlining a variety of tools and instruments to be used to address both potential students and partner companies as well as policy-level actors.

This chapter covers the **key process**es illustrated in the figure below.

Figure 10: Key processes awareness measures and recruitment of companies/students

3.1 General Awareness and Promotion Activities

Awareness measures on policy must be considered an **ongoing/long-term activity**. Generally, it is important to convince and involve the policy-level stakeholders who are crucial for **creating the needed regulatory framework** and without whose consent, interest, and approval the implementation can be blocked. For the case of Dual Studies in Palestine, this includes particularly the **MoHESR** and subordinate authorities and commissions.

The measures listed below include several activities that have already been implemented in the past years, e.g., by GIZ. Given the successful pilot programs of Dual Studies in Palestine at AQU, there is already a good level of awareness and support for the concept on the policy-level in Palestine. Nonetheless, policy awareness and institutional promotional activities should be continued with the scaling-up of Dual Studies in the country.

General Policy-Level Awareness Measures for Dual Studies

- Regular **dialogue** (meetings, presentations) with policy-level stakeholders (e.g., MoHESR, AQAC) to inform about the approach and initiate the development of a regulatory framework

- Organization or promotion of **study tours/project visits** for ministry and university stakeholders to dual universities (or universities with dual studies programs) and stakeholders

- Invitation of policy stakeholders to ongoing **Dual Studies events** such as workshops, signing ceremonies, graduation

- Building on existing networks from donor programs, e.g., from GIZ in the field of dual vocational training as well as private sector promotion
- Presentations and **inputs at national conferences** and to educational councils
- Build on and use international visibility and contacts of Dual Studies through e.g., **VIP visits** (e.g., Members of the German Parliament, German Academic Exchange Service (DAAD) representatives) as well as **international conferences**

Marketing and Awareness Measures of the University

It is also important to **promote the dual approach and planned new study programs** at the specific training institution to the relevant target groups, including particularly high school students and companies, but also parents, universities, employers, and the general public.

This includes, e.g.,

- **Project and concept presentations** as well as inputs on educational and employment fairs and conferences
- **Information videos** on planned Dual Studies programs regarding e.g., benefits and admission process of Dual Studies
- **News and social media coverage of events, workshops, ceremonies,** and pilot measures at the university
- Presence on **local written-audio-visual media** such as interviews on Palestine TV, prominent local radio stations, radio spots, This Week in Palestine magazine
- **Public events at the university**, e.g., honoring ceremonies of distinguished students, signing ceremonies with new partners, guidance days
- **Success stories with student ambassadors and/or graduates** in newspapers, on the radio, on TV, and billboard campaigns
- Production and dissemination of **targeted PR materials** (see below)
- **Involvement of partner companies in awareness campaigns** as ambassadors for Dual Studies, e.g., with the plaque "*Proud Partner of Dual Studies*"
- Advertisement on **partner companies' social media channels** (e.g., vacancies for Dual Studies students, scholarships offerings)

The broad **involvement of partner companies** in the awareness measures has proven to be a successful approach since it also serves the companies to promote themselves (employer branding) and is of mutual interest to both the university and the partner companies.

Promotion Materials and Channels for Dual Studies

Ideally, promotion measures for new Dual Studies programs are managed by a designated promotion officer at least in the initial phase of establishing new Dual Studies programs. Later, these responsibilities may be subsequently taken over by the central PR office of the university.

The following channels, products, and materials may be relevant for the promotion activities:

- Dual Studies Website
- Dual Studies Facebook site
- Dual Studies YouTube channel
- Dual Studies Instagram account
- Dual Studies logo and letterhead
- Dual Studies flyer and brochure
- Dual Studies roll-ups, banners, pens, bags, billboards

It is recommended to increasingly focus on **digital tools and social media channels** such as a Facebook page and YouTube channel, as these are more dynamic, have a better outreach, allow for flexible media use, and are often still more cost-effective than traditional print-based campaigns.

3.2   Recruitment of Partner Companies

Background

When initiating a Dual Studies program, the recruitment of (adequate) partner companies is a crucial aspect in the preparation of program implementation. The recruitment of companies requires a massive effort to reach, inform and motivate companies to participate as a training partner. Even in the starting phase of the program, however, the process should not be purely quantitative. For the selection of participating companies, minimum criteria must also be agreed upon to assure the quality of the practical training in the Dual Studies program.

Minimum Requirements for Partner Companies

Criteria for the selection of participating companies evolve around both technical and infrastructural criteria.

The following **minimum requirements** for the qualification as partner companies should be considered, most of which are also stipulated in the *MoHESR Instructions for Dual Studies*:

MoHESR Instructions Article (7)

- Registration of the company with the **Chamber of Commerce**
- **Minimum size of the company** (e.g., 5 staff) as an indicator for the dynamics and order level of the company and availability of official departments (e.g., production, sales, human resources)

- **Willingness to train the student over 4 years and to pay a student salary** during the practical phases
- **Technical ability** to deliver the contents foreseen in the practical phases of the respective Dual Studies curriculum
- **Assignment of a qualified tutor** and availability of **qualified staff for the training** of the student
- Availability of **adequate and safe infrastructure and equipment**, e.g., office space and relevant machines for training
- Willingness to **provide the student with educational materials**, such as tools and manuals
- Willingness to **follow up and evaluate student's work** and reports during practical phases
- **Willingness to regularly correspond with the university** and to participate in councils or working groups

Company Recruitment Process

The recruitment of partner companies is one of the most crucial activities for the launch of new Dual Studies programs.

For the initial bulk of recruitment activities, it is recommended to compose **a larger team** for the recruitment process, which may involve e.g., the designated dean, the designated study directors and designated company coordinator(s) as well as external consultants/support staff if necessary during peak times.

Even after the start of the programs, **continuous efforts to recruit new partners** are required. The **ongoing recruitment** of partner companies needs to be a clearly assigned task in the HR structure (see Chapter 1.1).

The recruitment process entails the following **general steps** illustrated below.

Figure 11: Company recruitment process

1. Company identification and first contact
2. Company assessment and motivation
3. Company information
4. Agreement

1.   Identification and First Contact

The identification of new potential partner companies requires some creativity and the use of diverse **channels**. These may include:

- Membership lists of professional or industry associations (e.g., Engineering Association) and Chambers of Commerce and Industry
- Advertisement and promotion activities, e.g., on chambers' and associations' websites, industry portals, newspapers, radio
- Attendance of fairs and exhibitions
- Contacts and networks of the university (e.g., career center) and the individual Dual Studies staff
- Web research and screening of company registers

After the identification, the recruitment team shall make a **first contact** (e.g. by phone), in which the background of Dual Studies and the objective to recruit partner companies for training is briefly explained. If the company is generally interested, a meeting at the company should be agreed upon.

2. Company Assessment and Motivation – Company Visits

A university representative (roles to be specified) should visit **each company individually.** The objective of the company visit is, on the one hand, to **assess the general adequacy** of the company as a training partner against the minimum requirements outlined above. This is done through discussions with the company owner as well as a visit to the company premises, where the university representative can have an eye on infrastructure and equipment. Ideally, the study director should participate in one of the first meetings.

On the other hand, the aim of the company visits is to outline the benefits of the Dual Studies program (see e.g., arguments in the previous chapter), inform briefly on the role and responsibilities of the companies, and **motivate the company to participate** as a Dual Studies partner.

If the company is interested, a (non-binding) **Expression of Interest** (EoI) may be filled out and signed in order to document the company data, contact details, and interest. Since signing an EoI may also be perceived as an unnecessary administrative hurdle for some companies, the interest could also be confirmed informally, e.g., by an email to the university containing key company data.

3. Company Information (Workshops/other Measures)

In a next step, the interested and qualified companies need to be provided with further structured information on their role in Dual Studies.

For instance, they can be invited to an **information workshop** on Dual Studies at the university. It needs to be considered, however, that further visits and workshops at the university with companies are usually planned and too many visits may be discouraging and too time consuming for companies. The degree to which companies will actively participate in on-site events at the university will also depend on the catchment area of the university. If most partner companies are situated around the university area, they will be rather willing to regularly attend events than if substantial

travel is involved to get to the university. With the new dynamics in digital conferencing in the wake of the COVID-19 pandemic, further digital approaches for interacting with (potential) partner companies can be assessed and tested.

Alternatively, therefore, information can also be imparted by other means. In any case, however, it is highly recommended to provide the key information in a **structured and systematic way**.

This may include e.g., (see also [Chapter 6.2 – Preparation and coaching of tutors](#)):

- an **introduction brochure/manual for companies**

- an **information video**

- an **information and document portal** for partner companies

- an **online information event** (video conference) including Q&A sessions

Any information provision needs to consider that **different company representatives** may be involved in the interaction process at different stages, and that information may have to be repeated or specified for different target groups within the company. Initially, for example, it is particularly business owners or HR staff involved, while during implementation interaction will mainly be with the assigned tutor.

The **key information** to be provided at this stage includes:

- Structured information about the Dual Studies rationale and objective
- Appreciation of companies' participation
- Benefits for the company
- Organization and structure of the Dual Studies program
- Role of the company and tutor in the Dual Studies program
- Organizational issues like student salary, insurance, contract, timing and calendar
- Information on next steps (admission and matching process, company training plans, regular monitoring visits)

4. Agreement

To finalize and formalize the recruitment process a written agreement/**Memorandum of Understanding (MoU)** between the company and the university may be signed. Initially, such written agreements are also needed for the accreditation application for new Dual Studies programs. To this effect, a **signing ceremony** could be organized at the university with all designated or new partner companies. This also stimulates identification

with the university, can initiate networking among the companies, and may also be used for PR purposes with broad media coverage. From the university side, it should be the president or another high-ranking representative to sign the MoUs. Alternatively, MoUs or agreements can also be signed continuously during the recruitment phase.

Once the programs are established and accredited, partnerships with new companies may also be considered complete with the signature of **student contracts**.

Ideally, the recruitment process is an **ongoing process from July to September** to check the demands of the companies and possibility of the companies to take students. **Admission is in August** and the **matching usually takes place until the beginning of the practical phase in mid-December** (see the following Chapter 4 – Admission and matching process).

The ideal **schedule for the overall company and student recruitment process** is indicated in the figure below.

Figure 12: Recruitment, admission, and matching timeline

3.3   S t u d e n t   R e c r u i t m e n t

The recruitment of students for (new) programs requires targeted efforts that should not be underestimated. **Arguments** for Dual Studies on the students' side include e.g., the innovativeness of the dual approach and its German origin, the employment prospects, and the financial benefits through the salaries. Further benefits to be highlighted include the possible **preferential treatment for scholarships** (designated acquisition of scholarships for Dual Studies) as well as opportunities for **internships in Germany and other countries**. Intensive promotional activities are particularly relevant during the first years of the program and can be reduced once the Dual Studies programs are well-known and established. Promotional activities directed towards students should start well ahead of the high school graduation, which is at the end of July each year.

The following **measures** can be considered for student recruitment (see also the *Dual Studies Marketing Guide*):

- **High school "roadshow"/school campaign**: Presentation of the Dual Studies career options for final year students of high schools in the catchment area of the university. Based on a standard presentation the concept, benefit, and admission modalities can be presented. Application forms can be distributed at high schools. Caution: The visit of high schools in Palestine requires a permit from the MoHESR and this work-intensive promotion activity might require external support.
- **Radio announcements**
- **Information videos with student ambassadors**
- **Web banners**
- **Sponsored advertisements on social media**
- **Sponsored ads on Internet Protocol television (IPTV)**
- **SMS-promotion** with link to Dual Studies website
- **Posting of billboards**
- **Distribution of Dual Studies brochure to Directorates of Education**
- **Student information desks** at the registration and admission department during the registration period
- **Career information/guidance days**, involving dual partner companies
- **Announcements through partner companies'** websites and Facebook pages, e.g., of vacant positions

In order to prioritize the measures in the context of limited budgets, a regular **evaluation of the student recruitment channels** with regard to their efficacy is advisable. While initially road shows can contribute to the recruitment of a large portion of students, the effort may be considered disproportional in the long run. Digital channels have proven to have a better outreach to the student target group than print media. After the first years, the involvement of **Dual Studies students as ambassadors** can be a successful approach.

IMPLEMENTATION PROCESSES

4   ADMISSION AND MATCHING PROCESS

Background

In **Germany**, aspiring Dual Studies students need to **apply to companies first**. Admission at a dual university such as DHBW can only be completed with a signed training contract by an approved partner company. The application process and selection of students by the companies often is concluded about one year before the beginning of the first semester, while students are still in high school.

In **Palestine**, the admission process is more complicated, since the admission at universities and thus matching with companies needs to run in parallel and can only be **started after the publication of Tawjihi (Injaz) results** in late July.

Sequence of Activities

The **admission and matching sequence** for Dual Studies in Palestine is **challenging** for several reasons:

- University admission requirements usually require minimum Tawjihi results depending on the program. The admission process can therefore only be started **after the publication of Tawjihi results** in late July, leaving little time for admission and matching.

- The **concept of Dual Studies is new to Palestine** and admission processes involving companies are unusual and need to be synchronized.

- Different Palestinian universities have **different application deadlines** and students expect to receive quick replies on their applications, which leads to a complex matching sequence.

Figure 13: Application, admission, work and life skills training, and matching
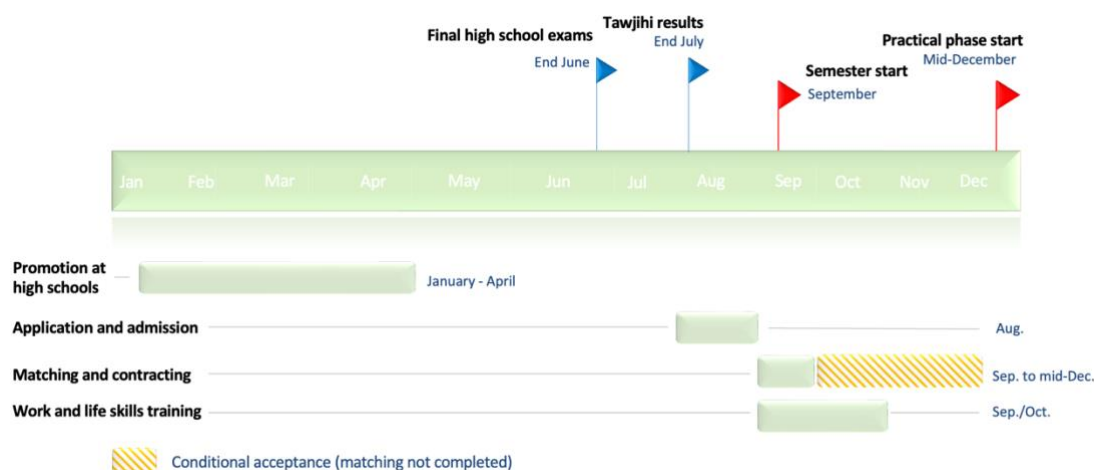
The timeline above illustrates the likely sequence of activities. Generally speaking, the **order of acceptance here must be inverted** as opposed to the process in Germany: Only once the acceptance at the university is completed, the application, matching, and contracting with the companies can be finalized. In order to complete the admission in time, however, some of the **processes have to run in parallel**.

The highest intensity in the admission and matching process can thus be expected from September to November and with the start of the practical phase. Temporary **support from external staff** in this period may be considered to manage the various parallel processes appropriately.

The central **admission steps** are described below:

Figure 14: Application, admission, and matching steps for Dual Studies

1. Application to university
2. Admission according to university requirements
3. Registration and payment
4. Matching with companies
5. Signing of contract and final acceptance
6. Work and life skills training

1. Application to University

After receiving the Tawjihi results (usually end of July), students submit their application for university admission according to **university admission procedures**. The admission process could also be started earlier and finalized once Tawjihi results are available. Such an "early admission period" may help stagger the admission process and allow for some initial selection and matching preparation.

The universities' registration and admission system usually need to be adapted to include new Dual Studies programs.

2. University Admission

The admission office usually checks the fulfillment of university requirements and confirms the admission if the requirements are met. **Admission requirements** specified by the university and/or the Dual Studies department may include Tawjihi grades, English language skills, good averages in grades 10 and 11.

Interviews with applicants are recommended to be part of the admission process as it is important to get an impression of the personality of the students. A **final ranking** of applicants shall be concluded by the Dual Studies team (e.g., dean and/or study directors).

3. Registration and Payment

The accepted and eligible students shall be informed timely and invited to pay tuition fees and complete the registration procedure at the university. The payment and registration procedure will of course depend on the established procedures of the university.

It is suggested that **matching will be initiated only for students with completed registration** in order to avoid last-minute drawbacks from students after matching efforts have been started (and thus creating resentment from the companies).

It may be agreed with the student that the admission is **conditional to the acceptance at any of the partner companies** ("conditional acceptance"). If for whatever reason a student will not be able to secure a place in a partner company, he may be given the chance to change to another major at the university.

4. Matching Process

There are two general options for the matching process:

1. The university steers the process and facilitates the matching of students with partner companies.

2. The students need to apply at companies individually and can only be enrolled when they have a training place.

In the initial phase of Dual Studies programs, the matching process most likely will have to be comprehensively supported by the university (option 1). The short available time span between the Tawjihi publication and semester start as well as the lack of experience of companies with the concept and procedures makes option 2 difficult in the first years.

The university must take into account that the task is fairly complex and bears challenges. For instance, a too lengthy and complicated matching process may discourage companies to participate, as will frequent last minute pull-backs or drop-outs by students.

The university should **develop a matching process** that allows for increasing "autonomy" and a reduction of the universities' matching role in the medium term. The guiding principle should be that **students will not be "assigned"** to companies by the university, but that companies and students get a chance to select each other.

The following **measures** can be considered (and often combined) to allow for a certain level of autonomy:

- An **online portal** for matching companies and students, with information e.g., about the partner companies' profile, contacts, number of vacancies for Dual Studies students, companies'

recruitment standards; and on the other hand, the students' applications and CVs (data protection regulations will have to be observed). The exact functioning and expected procedures (who can access, who contacts whom first, how decisions are documented) need to be specified. It must be considered, however, that not all partner companies may be willing to use such a portal.

- A **"matching day"** at the start of the application period can be organized each year at the premises of the university. The matching day serves for companies to present themselves and advertise their vacancies. Students can inform themselves about the existing training opportunities, submit applications or present themselves to their preferred companies.

- **"Second round" support**: Students that have not found a training company in the first round should be supported by the Dual Studies team in finding a company (including information about remaining open places at companies, dialogue with companies, suggestions of selected companies to students/students to companies against specific criteria).

Ideally, most students will be matched in September, October, and November, but the matching can continue until the beginning of the practical phase in mid-December. This of course also depends on the number of programs.

5. Contracting

The **company, student, and university** shall sign a training contract based on a **standard contract template** to be developed by the university. It must contain e.g.:

Checklist – Training contract template

- Responsibilities and obligations of each partner,

- the specific dates of the practical periods and,

- any standard arrangements for working hours, leave and salary.

6. Work and Life Skills Training

The employability of graduates of any educational program can be significantly improved by combining technical training with work and life skills training ("soft skills"), as well as with further mentoring and support services. For Dual Studies soft skills are even more important as first year students have to pass interviews with company representatives in order to get matched with a training company. The involvement of company representatives in the interview trainings is a great asset.

Mandatory soft skills training to prepare students for the interviews and for the training in the company should be offered starting in the first semester with topics such as business etiquette and communication, business writing and technical reporting, presentation skills and English language skills. It is recommended to continue these trainings throughout the study program.

To have students well prepared for the interview with companies at the beginning of the first semester, an intensive course with interview training and the most important skills for working in a company might also be an option.

5   UNIVERSITY TEACHING

This chapter focuses on those aspects of university teaching in the theory phases that may require specific attention in Dual Studies. Generally speaking, the **improvement in demand and practice orientation** of study programs, which is targeted with the introduction of Dual Studies, should not just merely be "delegated" to the practical phases, but should also be **reflected in the academic phases at the university**.

This may include particularly the increased involvement of lecturers and speakers from the private sector as well as an integration of practice elements and focus on the real-life transfer of concepts in the design and teaching of courses.

5.1   Timetabling and Personnel Planning

Timetabling

Whether planning and implementation of the academic semesters in the Dual Studies program will be the responsibility of the Dual Studies department/faculty or will remain a responsibility of the "traditional" faculties very much depends on the overall organizational structure chosen. Generally speaking, the dean of Dual Studies shall oversee and coordinate the planning for all Dual Studies programs, while study directors are responsible for the detailed timetabling for their respective study programs.

The **alignment of the Dual Studies academic calendar with the traditional calendar at the university** may be challenging with regard to e.g., the assignment of lecturers as well as the booking of rooms and labs. In order to allow for enough time for this alignment and coordination activities with the traditional faculties, the semester planning for Dual Studies academic phases shall be submitted by the study directors to the Dean of Dual Studies at least three months before the start of the semester.

Assignment of Teaching Staff

The assignment of teaching staff very much depends on the organizational structure of Dual Studies at the university, particularly whether Dual Studies forms a faculty with its own teaching staff or has to rely on other faculties and external lecturers. The general requirements and procedures for the appointment and assignment of lecturers are likely to be recorded in the university bylaws.

Options for the assignment of lecturers are:

- assign lecturers from **Dual Studies Faculty**

- assign **adequate lecturers from other university faculties**

- **hire/assign external lecturers** (including from private sector)

To increase the practice orientation of teaching and strengthen the link to the labor market, it is encouraged to find opportunities for **assigning qualified (guest) lecturers from the private sector** for selected courses.

In addition to assigning full courses to private sector lecturers, a **powerful instrument** to strengthen the cooperation with the partner companies is the participation of partner company representatives as **guest speakers** in the classes. This can be e.g., company presentations or presentations on different topics, case studies, or technologies.

5.2   Syllabus Development

Generally, the development of syllabi for the academic courses in Dual Studies will follow the established practice and formats for syllabus development at the institution.

Given the postulated **industry orientation** of Dual Studies programs, practice elements should not be just "delegated" to the company training phases. It should also be a common thread for academic courses to **include real-life reflections and applications** in the syllabi/courses.

The following **principles** may be guiding for the development of contents and methodological approaches of the courses:

- focus on the relevance of theoretical concepts for the practical training
- use problems and **experiences from the real world** for discussion and introduction of the theoretical background (e.g., **case studies**)
- use **examples from research projects**
- foster **self-initiative** and **methodological competences**
- **Simulations and applications** of procedures and technologies in labs and other practice-oriented modules
- **Upcoming technologies and business opportunities**

For each course, a detailed **syllabus** is to be developed by the appointed lecturers. The syllabus shall include information about:

- **Instructor and course information**, including contact details, room, prerequisites, credit hours
- **Course description**, containing a summary of the course contents and structure
- Course objectives, introducing the course's overall objectives
- Summary of **Learning Outcomes**, which should correspond and be derived from the *ILO – Intended Learning Outcome and Course Design Matrix*

- **Textbooks and additional resources**, informing about required and additional textbooks as well as information and links to relevant online resources
- **Course topics and timetable,** comprising a detailed overview of course topics and their schedule throughout the semester
- **Expected exam dates and grading policy**

The syllabi must be submitted by the lecturers to the study director of the program. The study director assures that the syllabi of all courses have been prepared and submitted before the start of each semester.

5.3 Laboratory Practicals

An essential element of fostering the **practice orientation of the academic teaching** phases is the increased use of laboratory practicals ("labs"). Particularly for engineering and IT study programs, laboratory practicals can add significant value to teaching in higher education. Laboratories provide a controlled environment in which the outcome of theories can be tested and analyzed for further studies, and students can learn executing **practical applications of technologies**.

In short, **key benefits and objectives** of laboratory practicals in higher education include:

- Enable the **testing and execution of practical applications** of technologies, software, programs and experience job-specific work processes in engineering or IT professions
- Familiarize students with **current questions, topics and methodologies in research and development** in their respective field of study
- Support the **understanding of opportunities and limitations** of underlying theories for explaining real-world phenomena
- **Generate curiosity and increase students' interest** in technical phenomena and experiential approaches
- Foster **students' soft skills development** (e.g., critical thinking, team work) through working collaboratively on joint projects and experiments

The teaching of meaningful laboratory practicals **requires thorough preparation** including the definition of learning objectives for each practical, the design of relevant experiments appropriate to address the learning objectives and the preparation of qualitative accompanying materials and scripts. Therefore, the **quality of lab teaching** depends both on the adequacy of the equipment in the labs as well as on the qualification of the responsible lab engineers.

5.4 Further Training of Academic Staff/Lecturers

Purposes of Further Lecturer Training

The quality of an academic program does not only depend on the quality of the curriculum and syllabus, but also the **quality of the facilitation**. Updating and training the involved lecturers regarding **modern academic teaching techniques** is thus an important aspect of quality assurance.

The training of academic staff targets three different purposes, both of which are important in the context of increasing the **quality of Dual Studies programs**

Figure 15: Lecturer training
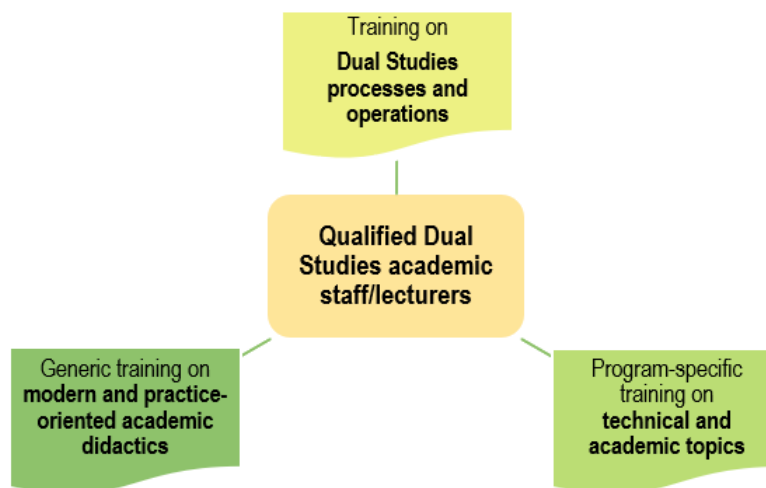
- **Generic:** Exposure and familiarization with **modern and practice-oriented academic didactics**

- **Program specific**: The **technical/academic qualification** of lecturers for new courses and topics that have not been taught so far

- **Dual Studies specific**: The training of academic staff on relevant Dual Studies processes and operations (mainly for those involved in the supervision of practical phases)

Possible Training Modalities

- **Seminars and workshops on academic didactics**, e.g., from German Dual Studies experts, didactic experts.

- **International academic exchange and distance studies** for lecturers (e.g., sponsored by the DAAD) for academic qualification of lecturers in new topics, subjects and courses)

- **Coaching and tandem with German/international professors** in the preparation of lectures
- **Facilitation of private sector exposure of lecturers** e.g., via curriculum discussions, co-lecturing with company representatives, company visits, monitoring of practical phases, attachments for specific technologies

Preparation of Supervisors for Practical Training

The **monitoring tasks** for the practical phases may either be centralized at the Dual Studies company coordination/liaison unit or otherwise **delegated to selected lecturers and professors** (depending also on the scope of agreed monitoring).

Assigning **academic staff to the monitoring and supervision** of the students in the practical phases is beneficial in several aspects. Firstly, the direct contact of lecturers with the companies **stimulates the desired transfer of practical experience** into the academic courses. Also, it may be appreciated by the companies and beneficial to the **reputation of the university** to receive academic experts with specific technical know-how at the company.

If the monitoring tasks will be assigned to the academic staff of the university, the selected supervisors need to be **informed and prepared in a structured way** (e.g., in a workshop) on their detailed role, task description, and agreed on processes and formats for the monitoring of the practical phases (see also Chapter 6.2 Development of training plans and Chapter 6.3 Monitoring of practical phases). It is also suggested to periodically organize joint consultations and experience exchange between all company supervisors and the Dual Studies core team, e.g., via half-yearly review meetings.

6   COMPANY TRAINING

Background

Training dual students at the workplace is new to Palestinian companies. It is therefore crucial for companies to **understand the difference** between a Dual Studies student and other short-term interns or students on attachment they may have. The Dual Studies student will work at the company for several years and should be considered a **full staff member** (and a resource), to whom the company can gradually pass over responsibility for projects and tasks. Dual Studies experts highlight the importance of creating **identification between student and company,** as well as between company and university from the very beginning.

At DHBW, **10 principles for the successful implementation of the practical phases** have been formulated. These may serve as a guideline for the design and set-up of the company training phases.

1. On-the-job training phases are **planned consciously**. Students acquire the required **breadth of professional knowledge** through the assigning of a **variety of duties in several departments**.

2. Technical departments are **informed early about the time and duration** of on-the-job training phases, the development status of students, and the quality expected in each practical training phase in accordance with the educational plan.

3. **Technical departments provide qualified technical support** and **ensure adequate time** is provided to guide students.

4. The **task and/or project goals are communicated clearly** to students**. Independence and self-reliance** are demanded during preparation.

5. Projects and tasks entrusted to students **contribute to their further personal and professional development** and represent **added value for internal and external customers**.

6. Students gain **insights into business procedures** through their involvement in work. The duties assigned **leave room for personal initiative, approaches, and creativity**, and the growing level of complexity and responsibility involved in the tasks to be solved (practical project) offer students the chance to acquire skills and expertise and enhance their employability.

7. Students have a **permanent tutor for the duration of their studies**. They receive **feedback on their professional and personal development** in meetings held at regular intervals.

8. Where possible, students have the chance to complete an internship in a company **abroad.** Tasks assigned abroad ideally complement the technical contents of on-the-job training phases completed at home. There is a focus on the acquisition of language and intercultural skills.

9. Students **are integrated into teams**, thus encouraging **professional socialization**. In addition to acquiring technical and methodological competence, they are familiarized with benchmarks for **successful professional action and rules of play** that ensure smooth **cooperation and communication**.

10. Students also enjoy the support of their tutor in their last academic year and obtain assistance when looking for **suitable tasks to complete the bachelor's thesis**. In addition, the tutor also advises the student when choosing that first employment position after graduation, exploiting his or her knowledge of the student's business environment, personality, and qualifications and supporting the latter's start in professional life to the advantage of both parties.

6.1 Preparation and Coaching of Company Tutors

Background

The training and supervision of students at the workplace require **competent staff** in the enterprises. Tutors and workplace trainers not only need the technical expertise in their respective area but ideally also must be skilled and knowledgeable in instructional aspects such as vocational pedagogy, the development, and implementation of training plans as well as monitoring and supervision of learning progress, to name a few.

DHBW Guidelines for practical phases

Tutor Assignment

As a first step, the university needs to make sure that each company **assigns a designated tutor to each student.**

The following **guidelines** shall be observed:

- In smaller companies the tutor may be the owner himself, in larger companies, this role will generally be **delegated.**
- The tutor shall be **assigned for the whole period** of study (4 years). If the tutor changes for important reasons, the university shall be **informed** accordingly.
- The tutor shall be the **main contact person** for the university.
- The tutor should represent the company in the **program workshops /company workshops.**

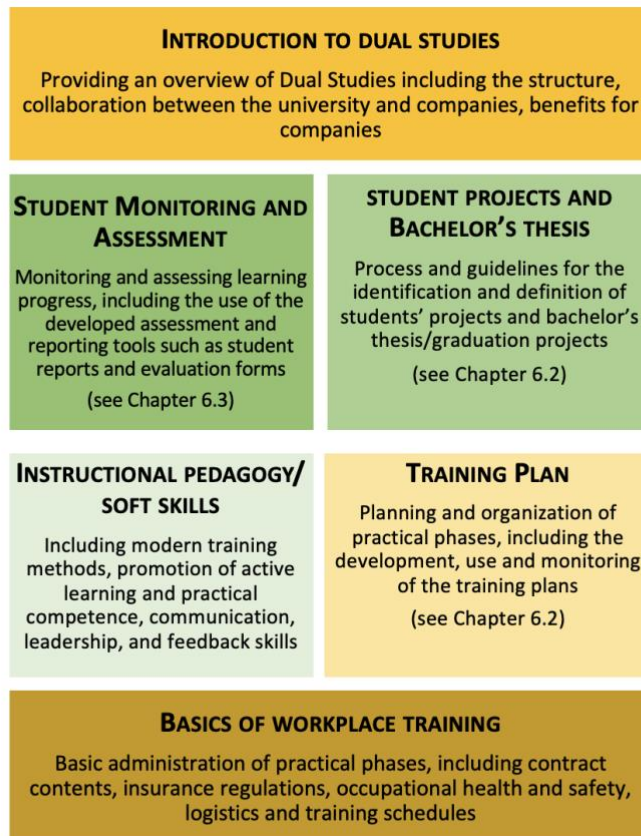The company tutor, of course, is not foreseen as the only person in the company working with the student and imparting knowledge and skills. Students will ideally have the chance to pass through different processes and departments at the company. However, the tutor holds the **main responsibility for planning, organizing, and monitoring** the practical phases and is the central point of contact for the university.

Information, Preparation and Training of Tutors

In order to perform their function in a competent manner, the following topics are considered essential for company tutors to be **informed, prepared, trained, or coached on**:

Figure 16: Key modules/contents for company tutors

INTRODUCTION TO DUAL STUDIES
Providing an overview of Dual Studies including the structure, collaboration between the university and companies, benefits for companies

STUDENT MONITORING AND ASSESSMENT
Monitoring and assessing learning progress, including the use of the developed assessment and reporting tools such as student reports and evaluation forms
(see Chapter 6.3)

STUDENT PROJECTS AND BACHELOR'S THESIS
Process and guidelines for the identification and definition of students' projects and bachelor's thesis/graduation projects
(see Chapter 6.2)

INSTRUCTIONAL PEDAGOGY/ SOFT SKILLS
Including modern training methods, promotion of active learning and practical competence, communication, leadership, and feedback skills

TRAINING PLAN
Planning and organization of practical phases, including the development, use and monitoring of the training plans
(see Chapter 6.2)

BASICS OF WORKPLACE TRAINING
Basic administration of practical phases, including contract contents, insurance regulations, occupational health and safety, logistics and training schedules

The **approach** to training company tutors should ideally combine some elements of **structured training**, elements of feedback and **coaching on the job** as well as the opportunity to **exchange experiences** with other tutors. Given the scarce time resources usually encountered in companies, flexible (online) and asynchronous training and information measures may be applied in combination with selected presence events.

Measures may include:

- **Structured preparation/training workshops** (presential, blended, or online training) with the tutors by the Dual Studies team or designated Dual Studies/workplace training experts
- **Tutor/company manuals** and **tutorial videos** documenting basic roles, procedures, and templates
- **Bilateral coaching and instruction** at the workplace by the Dual Studies team during monitoring visits
- **Good practice presentations** by international company tutors may be organized

- Inputs on selected topics (e.g., student projects) and discussion of challenges in the framework of the **program workshops** and other **events** with the companies
- **Study tours** to countries with successful Dual Studies programs, including visits to companies training Dual Studies students
- **Create opportunities for tutors to participate in in-company trainer workshops** from other GIZ dual education projects or international online courses

Offering some form of **certification** (e.g., "Certified tutor for Dual Studies") for completed training measures would add value and increase the attractiveness of the training measures.

6.2   Development of Training Plans and Student Projects

Background

Training plans are crucial for **structuring and systemizing the practical phases**. They also serve to make sure the student is not only "used" for simple tasks by the company without imparting any projects or on-the-job training.

A general challenge in the development of the educational plans for the practical phases is to find the right **balance** between setting **minimum standards** of content for all companies and allowing for **flexibility** and tailoring towards the individual companies' technologies and workflow. The basis for the companies' and students' training plan for practical phases should be a "framework plan", which should have been developed for each Dual Studies program with the curriculum (see [Chapter 2.1 Curriculum development](#)).

Individual Training Plans

Based on framework contents, training plans for the practical phases shall be **customized for each student and company.** The plans can be developed according to company needs and students' interests and performance. They constitute an important guideline for the company, the university, and the student for the 4-year training.

The individual training shall be developed **in consultation with the company** based on a **standard format for company training plans**. The training plan shall be customized to the companies' products, business technologies, equipment, and structures. The training plan should follow a simple, well-structured format. Language should be clear and precise, and unnecessary text avoided.

[Checklist – Company training plans (template/samples)](#)

Key **contents** of the training plan should be:

- **Basic (administrative) information**: Names of company, tutor, student, contact details, study program

- **Training plan**: Dates of practical terms with suggested learning objectives, tasks and activities for the student per practical phase, including the graduation project.

The responsibility of the training plan development at the university must be clearly assigned. For the initial phase of new Dual Studies programs, it is recommended that the **study directors** take a leading role at least in the **coordination and quality control** of all developed student training plans.

The following **steps** should apply for the development of each student's training plan:

1. **Company visit** to assess the premises, identify different departments and possible work areas and discussion of the main structure and contents of the training plan with the company representative/tutor

2. **Development of the draft training plan** by the university team

3. Sending the draft training plan to the company (HR/tutor) for **discussion and approval**

4. Revise the training plan and circulate **final training plan** to the **student, company tutor and relevant university staff**

The training plan is a key document for quality management of the practical training phases and thus its **implementation** shall be **regularly discussed and monitored** by the Dual Studies team (see also section 6.3.). Based on joint reviews, **modifications of the individual training plans shall generally be allowed** in consultation between student, company, and university.

Student projects during practical phases are a strong tool to enhance the workplace training. This applies not only for the **graduation project** but can also be included in the practical phases of the first years already. Student projects at the company do not only allow the student to work intensively on **specific technical topics** or problems, but also support the students' development in terms **of professional soft skills** such as e.g., responsibility, planning, self-monitoring, communication and presentation skills.

The projects assigned should be designed in a way that the student can work on the project during the whole practical period and present it before returning to university. The criterion for the identification of student projects is that the projects should be of **direct use for the company** and respond to an internal demand of the company. This increases the standing of the student in the company, the willingness of co-workers to support the project and ultimately the motivation of the student.

Projects can be assigned for a variety of tasks, including e.g.,

- research projects,
- development projects and,
- documentation projects.

Bachelor's Thesis/Graduation Project

The bachelor's thesis in Dual Studies is usually based on a practical graduation project done under the supervision and responsibility of the partner company. To this end, the last one or two practical phases shall be reserved for the graduation project and preparation of the bachelor's thesis. The **title and theme** of the graduation project in the area of the study program should ideally be **proposed by the student in consultation with the company** and must be approved by the university.

The bachelor's thesis and graduation project are further outlined in [Chapter 8.1 – Assessment and examination system](#).

6.3 Monitoring of the Practical Phases and Evaluation of Student Performance

Monitoring of Practical Phases

Regular monitoring of the practical phases is very important in order to review the **adherence to the training plan** and to identify possible challenges or disputes that need to be addressed. Also, monitoring visits serve to maintain contact with the partner companies and may also be used to **provide guidance and coaching** to the tutors on both technical and administrative matters.

The university needs to develop a **guideline for the monitoring and evaluation of training plan implementation and student performance** in the practical phases.
The **guideline** should define, for example:

Checklist – Monitoring and eval-uation guideline and formats for practice phases

- The **overall approach** to the monitoring of practical phases
- **Roles and responsibilities** for monitoring and student evaluation from company and university side
- **Assessment criteria, formats, and procedures** for **student evaluation and grading** in practical phases (see next section)
- **Criteria and documentation forms** for the **general monitoring,** including e.g., adherence to the training plan, satisfaction of student and company
- The **communication structure** and **frequency of interaction** (especially monitoring visits) with the companies

Regular monitoring visits to the companies are considered a key element for **quality assurance** of Dual Studies practical phases. This is particularly the case in the early stages of introducing Dual Studies programs, where companies have no or little experience with structured workplace training in general and the training of Dual Studies students in particular. Towards the last year of the Dual Studies program, company visits may also serve to actively discuss possible employment opportunities of the student with the company.

During the monitoring visits, the designated university staff member should collect feedback from both the company and the student independently. It is encouraged to **document the company visits** in a standard structured and written form (e.g., "visit form").

The **company visit documentation** could include:

- **Header with visit information** such as company/branch name and location; date of visit, names of people met (e.g., student, owner, tutor)
- Checklist/assessment of an **administrative training aspects** such as appropriateness of safety and working space for the student, working hours, payment of salary
- Checklist/assessment on **adherence to training plan**, e.g., availability of training plan, level of adherence to training plan, need for revision of training plan
- **Summary of feedback** from company and student and needs for action
- Collection of student **evaluation forms**, if applicable

Evaluation and Assessment of Student Performance

The structured evaluation of student progress and performance during the practical phases is key for a transparent **assessment and grading system for the practical phases**. Each practical phase is rewarded with a specified number of credits as defined in the Dual Studies programs curricula.

The **final grade** of the practical phases shall incorporate evaluations from **both the company (tutor) as well as from university** (either the study director, or assigned academic/company supervisors). The *MoHESR Instructions for Dual Studies* foresee that, overall, the **company should be responsible for 20% of the evaluation** of practical phases.

The following **assessment tools** may be combined for practical phases:

- **Student reports**: The students may be tasked to submit reports during or after their practical phases. **Weekly or bi-weekly reports** to the tutor covering their performed tasks and lessons learned during the week are considered a helpful instrument. The reports should be signed by the tutor and may also be used for personal feedback and discussion of upcoming tasks. At the end of each practical phase the students shall submit a **final report** to the tutor and the Dual Studies team (supervision tasks to be defined). Before submission to the university representative the tutor must always approve the report, as it may contain confidential information. A standard format and structure for student reports must be made available.

- **Students' projects and presentations**: At the beginning of the following theoretical phase at the university, the students can present and discuss the highlights of their practical phase or specific projects they were tasked with to their university supervisor and their fellow

students. The presentation may not only form part of the grading system but it is also an important instrument for knowledge and experience exchange among the students and to practice presentations and to develop soft skills.

- **Student assessment/evaluation forms**: Student evaluation and assessment forms may be an important element of student performance particularly for the company tutor. The evaluation forms may focus rather on **soft skills and commitment matters** such as e.g., attendance, quality of work, timelines of fulfilment of tasks, adequate communication

The Dual Studies academic instructions or bylaws shall define the **responsibilities and weight of different tools and measures** to the overall grading of each practical phase.

6.4 Company Portal

A Dual Studies company portal should be developed immediately to efficiently manage and document the frequent interaction between companies and the university. The platform is ideal for the exchange of documents such as contracts, training plans and evaluation forms and to monitor the students during their practical phases.

7 COMPANY-UNIVERSITY INTERACTION

Background

The **partner companies' role in Dual Studies** shall not be limited to mere deliverers of practical training. Instead, companies are important contributing partners of Dual Studies at eye level, and as key stakeholders for the constant improvement of the quality of the university programs. Companies' representatives should be regularly invited to contribute to shaping and scoping of the study programs, processes and conditions together with the university.

The increase of private sector representation in the overall steering structure of Dual Studies in the form of a public-private steering committee or board has already been addressed in Chapter 1 of this handbook. Consecutively, this following chapter emphasizes **specific measures** to **strengthen the university – company interaction** and collaboration on an **operational and practical level**.

The following measures and structures are appropriate for a step-by-step approach to increase a **systematic university-company interaction** and ultimately strengthening company representation and ownership for the study programs.

A general **challenge** for the envisaged interaction structure is to find an appropriate balance between **fostering regular contact** and exchange with partner companies; but **without overloading or discouraging companies**

with too many reporting and participation requests. The degree to which companies will actively participate in on-site events at the university will also depend on the catchment area of the university. If most partner companies are situated around the university area, they will be rather willing to regularly attend events than if substantial travel is involved to get to the university.

With the new dynamics in digital conferencing and communication in the wake of the COVID-19 pandemic, the introduction of **flexible, digital approaches** for interacting with (potential) partner companies may be tested (in reasonable combination with traditional meeting structures).

7.1 Cooperative Structures on Operational Level

A key instrument to strengthen the interaction and collaboration between the participating companies and university staff are workshops and working group meetings either within the study programs or cutting across different study programs.

Figure 17: Cooperatives structures on operational level
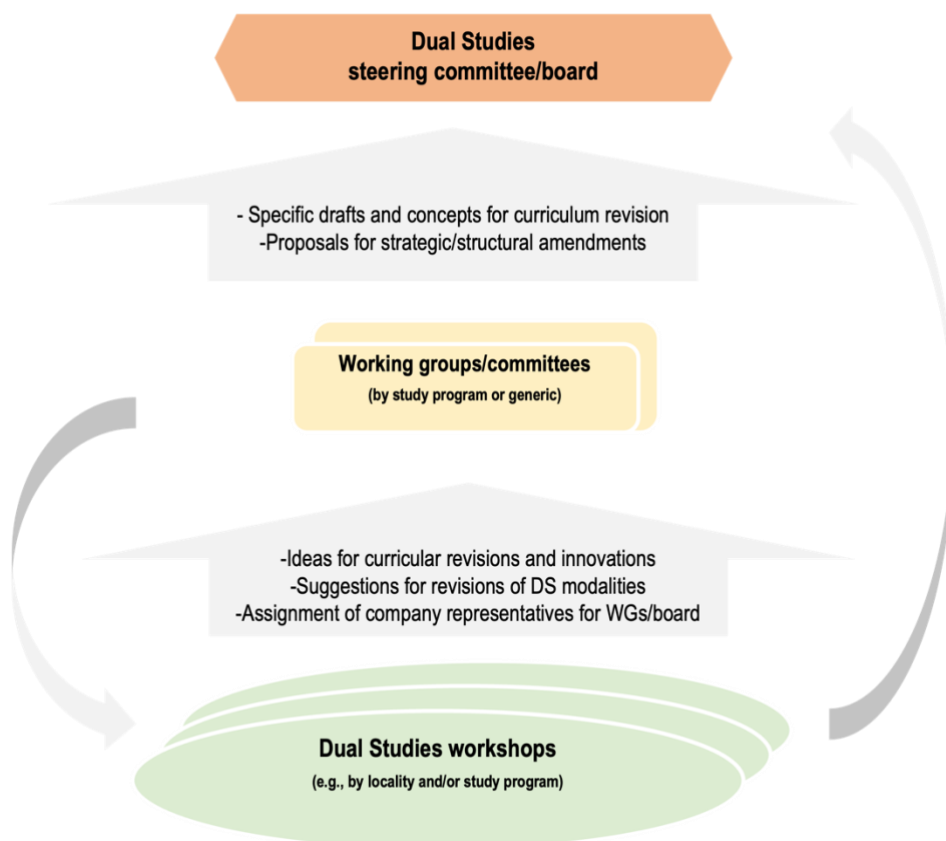
Regular Program Workshops/Partner Workshops

It is recommended to bring together **all partner companies** to assembly meetings on the study program level (alternatively by locality) at least **once a year**.

The participants of the workshops may include:

- **Tutors or company representatives** of all companies partnering with the specific study program
- The **program Study Director**
- The **Dean of Dual Studies** and other **key staff of the Dual Studies team** (e.g., company coordinator(s), supervisors)
- On demand/ad hoc: **Selected external speakers or consultants**

Topics for workshops are varied and shall be defined on a needs basis. They may include:

- **Challenges** and experiences in the practical phases
- Feedback on the **curriculum**
- Discussion of **training plans** (formats/framework contents)
- **Coordination** of theoretical and practice elements
- Discussion and brainstorming of **student projects and graduation projects**
- **Logistical and administrative issues**, such as contracts, the election of program representatives, handling of student dropouts, use of or revision of evaluation forms
- **Election of representatives** for technical or crosscutting working groups of committees
- **Expert inputs**, such as e.g., good practice presentations

As an incentive and valorization of the meetings, the workshops can also be used for **presentations or inputs by external experts or high-ranking speakers** on topics or technologies relevant to the academia.

The results and findings of the workshops shall be **documented and followed up by the Dual Studies** team or delegated to working groups if required.

Technical Committees and Working Groups

In addition to the program workshops/company workshops smaller program committees or working groups can be an important instrument for the **quality assurance and further development** of Dual Studies programs. Working groups may be set up for the follow-up of topics raised during the workshops and be tasked with the preparation of proposals on structural and curricular changes for the Dual Studies Board or other management-level committees.

The structure of committees can be flexible and depends on their purpose and participants. Committees should always **include representatives from the partner companies**, which may be elected or suggested (on a voluntary basis) during the workshops. Working groups may meet either on regular basis with regular review tasks or be installed ad-hoc for specific upcoming questions and decisions on demand. Short *Terms of Reference* should be drafted for every commission or working group to clearly define the expected output and interaction process.

Topics for cooperative working groups or commissions could be:

- Structured revisions of the curriculum or academic course contents reflecting the feedback from the workshops
- Discussion or revision of the structural and monitoring processes and formats, such as e.g., the training plans, assessment forms, matching process
- Development of suggestions for further interaction and networking formats

Dual Studies Board/Steering Committee

As illustrated in the chapter "Steering structure" a **Dual Studies steering committee** or Board is an overarching cooperative body on management level that should be involved in major steering and strategic decisions for Dual Studies at the university (see Chapter 1.2 – Steering structure).

7.2 Other Incentive, Networking and Exchange Activities

In addition to the regular meeting structures, a variety of measures and activities can be introduced or tested to **stimulate and motivate an increased exchange of knowledge** and to network between the academic and the private sector sphere of Dual Studies. The new industry relations and contacts should be exploited for synergies in the best possible way for the **mutual benefit of both the companies and the university**. There is no limit to creative and innovative ideas. The figure below summarizes the main ideas, some of which are also addressed already in other chapters of this handbook.

The Dual Studies **company coordinator(s) or liaison unit** shall be responsible for streamlining ideas from the staff and companies and following up specific measures in **cooperation with central offices of the university** (e.g., HR, Career office).

Figure 18: Possible networking and incentive measures

|	
NEEDS/PROBLEM ANALYSIS	• Systematically assess companies' needs for training, consulting and technology needs (e.g., for academic consulting, training inputs)
ACADEMIC CONSULTING	• Offer contract advisory, research and consulting services by professors to private sector
TECHNOLOGY TRAINING/ DEMONSTRATIONS	• Invite national and international speakers, and experts to give presentations and demonstrations on specific topics/technologies (e.g., during workshops)
BUSINESS LUNCHES	• Networking events to foster interaction between participating companies (as well as with university)
AWARDS AND COMPETITIONS	• Introduce small awards (e.g. best student project, best DS employer) to create incentives for improvement and innovation, awarding e.g., during graduation ceremony
COMPANY EXIBITIONS, JOB FAIRS AND UNIVERSITY DAYS	• Job and career fairs or company exibitions with partner companies on the university campus • Matching days for DS programs
CO-LECTURING	• Incentivize co-lectures between professors and private sector representatioves, • Invite companies to present their business or lecture specific topics within courses
COMPANY VISITS AND PRESENTATIONS	• Organize visits to companies or short attachments for lecturers
ACCESS TO UNIVERSITY LABS AND TECHNOLOGY	• Allow companies to use/test modern university equipment and machines during specific times.
JOINT PARTICIPATION IN PROJECTS/TENDERS	• Use company network for joint ventures for external projects / participation in tenders e.g. in the field of training, consulting, research
SPONSORING	• Invite partner companies to sponsor university events, equipments
PREFERENTIAL TREATMENT IN TENDERS	• Grant Dual Studies partner companies preferential treatment in university tenders as a benefit

8 EXAMINATION AND CERTIFICATION

8.1 Assessment and Examination System

Background

The assessment and examination system in the framework of a Dual Studies program should be designed in a way to assess and **reflect the achievement of learning outcomes** in the **different learning contexts** of Dual Studies.

Figure 19: Assessment and examination system
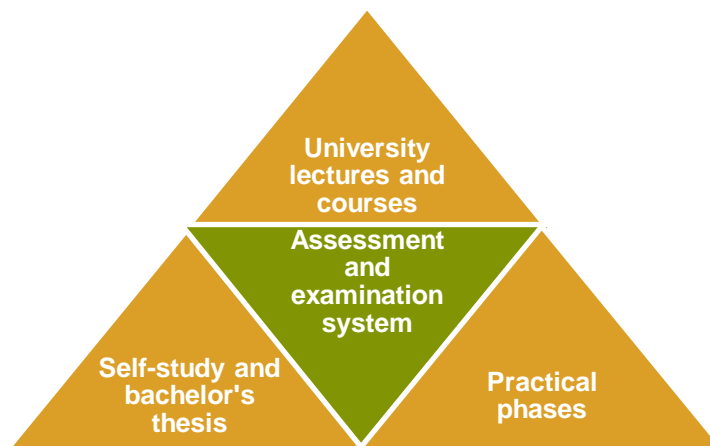
Examination Regulations for Dual Studies in the University

The requirements and conditions for graduation in a new Dual Studies program must be formulated in specific **Dual Studies academic regulations**. The regulations need to be developed based on the overall university instructions for the award of academic degrees, but also need to reflect the specifics of the Dual Studies programs as opposed to regular academic programs.

The particular **assessment and examination regulations** for Dual Studies need to define e.g., the following aspects:

- Duration and the academic load of the Dual bachelor's program
- Admission criteria
- Assessment schemes in the theoretical and practical phases
- Attendance in theoretical and practical phases
- Exams, pass grades, repeating exams
- Graduation project and Dual Studies bachelor's thesis
- Withdrawal and dismissal regulations

Checklist – Assessment and examination regulations

Joint Assessment of Practical Phases (see also Chapter 6.3. – Evaluation of student performance)

The assessment of the Dual Studies academic courses ideally will follow the same regulations as the academic courses in the traditional study programs as laid out in the university guidelines.

As for the practical phases, the **assessment shall be a joint responsibility of the company and the university**, as outlined in Chapter 6.3. Evaluation of student performance. The **weight of the company's assessment** of the overall practice periods grades shall be **20%** according to the *MoHESR instructions for Dual Studies*. The assessment and examination regulations accordingly need to define assessment responsibilities as well as the detailed weights of different assessment elements as student reports and projects, performance evaluations forms and presentations.

MoHESR Instructions Article 8

It needs to be defined whether and under which conditions practical phases can be **failed**, and how they could be repeated in case of failure.

Graduation Project and Bachelor's Thesis - Identification

The bachelor's thesis in Dual Studies usually is based on a practical **graduation project** done under the supervision and responsibility of the partner company.

One or two practical phases shall be reserved for the graduation project and preparation of the bachelor's thesis. The title and theme of the graduation project in the area of the study program shall be **proposed by the student in collaboration with the company** and submitted to the study director or assigned university supervisor ideally at least 6-8 weeks before the respective practical phase starts.

A **guideline for the definition of Dual Studies graduation projects**, and formats for the submission of **project proposals** as well as the bachelor's thesis should be provided by the university.

Checklist – Checklist – Guideline and formats for graduation project and thesis

The project should have a **strong relation to the products and services of the company**. The graduation project demonstrates the student's ability to solve practical-related problems from the respective field by using practical and scientific knowledge and must be done in the company or on the site – outside the university. It shall be jointly supervised by the company and the university.

Generic tasks and learning outcomes of the graduation project include:

- The student analyzes problems and evaluates alternative solutions.
- The student demonstrates that he/she can work out or develop solutions for complex technical problems in the academic field by applying scientific methods.
- The student proves to know the current state of research in his/her specific project area and takes over professional and ethical responsibility.

- The student can expand his/her knowledge and interpret current knowledge.
- The student communicates with customers and colleagues.
- As a team member, he/she takes over responsibility for a task.

Assessment Procedures and Responsibilities

The **graduation project** should be jointly **supervised** by:

- an appointed supervisor from the company, and
- a qualified academic supervisor from the university.

Both supervisors should be available to give feedback to the student throughout the graduation project with a focus on practical or academic questions respectively.

According to the **MoHESR instructions**, the **university will be ultimately responsible** for the evaluation of the bachelor's thesis, but the evaluation of the company supervisor should be appropriately considered. Further, the thesis should bear the logos of both the university and the partner company.

With regard to the **assessment of the bachelor's thesis**, the following decisions need to be taken and defined in the examination regulations:

- Form of involvement in company evaluation
- Definition of a passing grade of the student's bachelor's thesis
- Definition of options if the bachelor's thesis is failed

As outlined above in Chapter [Chapter 2.1 Curriculum development](#), it is suggested that the overall weight of the practical phases including the bachelor's thesis amount to **15-30%** of the Dual Studies degree.

8.2   Certification and Graduation

Certification

Each student successfully achieving all study requirements should be entitled to **two certificates**:

1. The **bachelor's degree certificate from the university**, indicating the *Dual Studies program title*

2. A **company certificate** (possibly co-signed by the university). The issue of the company certificate should also be agreed upon in the student contract. It should contain:

   o Duration and objective of training,
   o Knowledge, skills, and professional experience gained by the student and,
   o Evaluation of the student's performance.

Graduation Ceremony

The potentially diverging academic calendar of Dual Studies imposes some challenges regarding the graduation ceremony, as the **central university graduation ceremony** may be before the official termination of Dual Studies students. If this is the case, clarification is needed on if and under which conditions Dual Studies students can also participate in the universities' graduation ceremony.

In addition, or alternatively, a graduation ceremony on the level of the Dual Studies Faculty with the **participation of company representatives** may be held. This can also be a forum for:

- appreciation of the collaboration and company contribution
- promotion of the dual approach by media coverage of the event

The ceremony may also involve **motivating awards**, e.g., for the best graduation project, the most active/successful dual partner companies, or the like.

QUALITY ASSURANCE AND FOLLOW-UP MEASURES

9 INTERNATIONAL STUDENT MOBILITY

Background

The **internationalization of higher education** is an ongoing trend in the wake of a globalizing world. Allowing and fostering student and staff mobility is considered a key quality criterion for a state-of-the art qualification of students and – not least – for the attractiveness of higher education institutions and new study programs.

The **rationale of mobility programs** is to expose students (and staff) to different views, knowledge, teaching and research methods as well as work practices in their study field. International experiences spur the **personal development** such as the ability to adapt to new situations. Further, through work or study phases abroad, student and staff develop their **language, communication and intercultural skills** – all of which is highly requested in today's business world. In summary, thus, international mobility is associated with a significant boost for the **employability** of students.

Dual Studies programs usually put a particular emphasis on the employability of the graduates in the private sector. Therefore, the topic of international mobility for students and staff must be on the agenda when developing and introducing new Dual Studies programs. As international mobility programs require good networks and dedicated attention, a **structured cooperation and consultation with the universities' *International Affairs office* and *Language Center*** should be factored in from the very beginning.

International mobility aspects already need to be **considered in the curriculum development phase**, including e.g., the reflection of language skills (development) in the curriculum and admission criteria depending on country specific tracks or cooperation priorities.

For exchange with **European countries**, the **Erasmus+ program** is a central instrument for developing, facilitating, and funding international exchange programs. The program covers both student and staff mobility. It is not limited to academic studies but also has a window for traineeships abroad.

[Erasmus+ website Palestine](#)

This handbook cannot elaborate on all complex processes of international exchange programs, but seeks to highlight those aspects that may be particularly relevant and specific in the context of Dual Studies.

Student mobility in the context of Dual Studies can be clustered into two **main tracks** described in the figure below.

Figure 20: Student mobility tracks

Internships Abroad

Contrary to academic studies abroad, central university offices will most likely have little experience and networks for the facilitation of internships with companies abroad. Thus, it will be the responsibility of the Dual Studies team to **establish networks and indicate pathways** for the placement of students in companies worldwide. Given that Dual Studies is a German model, and German companies have a long track record in training dual students, **Germany** may be at least one focal partner country.

The extent to which the university will be involved in the identification and matching processes of interested students with companies abroad needs to be carefully weighed against the efforts that come with such as task. Generally, it is recommended to focus rather on an **enabling role** than a steering function in the process. Students should be encouraged and enabled to take their own initiative rather than rely on placement by the university

The following **support tasks** may be assumed by the Dual Studies team:

- Support the identification of potential partner companies and **establish a network or database of possible hosting companies**
- Define **selection criteria and select adequate** students for university-supported matching processes
- **Support the matching** of students with companies e.g., by facilitating interviews or organizing matching events (such as digital speed dating)
- Organize or conduct **interview/application trainings** for candidates
- Organize **preparation courses** for selected students before departure, including e.g., intensive language courses, intercultural skills, country-specific information, business etiquette

For the identification of possible partner companies as well as possible administrative support to the traineeships, the following **"entry gates" or networks** may be tapped:

- Palestinian embassies/representative offices in target countries
- Palestinian/Arab business networks in target countries
- Sector associations and chambers of commerce in the target countries as well as representative offices in Palestine
- Possible international networks of the Dual Studies partner companies (e.g., suppliers, distributors, clients)

- International companies in Palestine
- Personal networks of university staff through previous study and work experience
- The national academic exchange programs in the countries, such as the DAAD in Germany

With regard to the **timing of internships abroad**, the **practical phases** in the third (or second) academic year are considered adequate. **Internships of three months** can be taken without major interference with the Dual Studies academic calendar. Of course, the student's partner company needs to be informed and should approve the internship abroad. If students are motivated to apply for internships by themselves, it might be worth discussing extending the duration to 6 months.

Academic Studies/Phases Abroad

The opportunity to study at universities abroad will to a large degree depend on the established procedures and international cooperation agreements the university has, and should ideally be arranged through the central *International Affairs Office* of the university.

The following factors will, among others, influence the **viability and attractiveness of academic mobility programs**, and need to be considered in detail:

- Provisions and agreements for the **transfer of credits** earned abroad
- The availability of **stipends and scholarships** as well as support regarding **administrative and visa matters**
- Solutions for **conflicts in the academic calendars** of Dual Studies programs with academic semesters abroad, e.g., allowing students to take missed practical phases at the end of the Dual Studies program
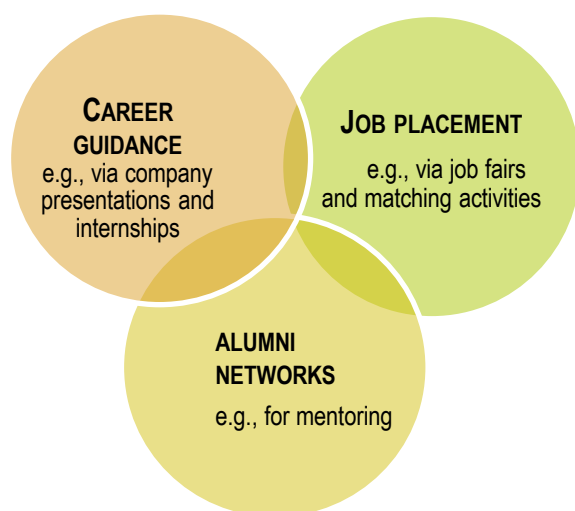
10 INDUSTRY LIAISON, CAREER GUIDANCE AND GENDER

Background

The main objective of Dual Studies is to **increase the employability** of university graduates. The facilitation of career orientation through regular exposure to the private sector and support of the transition to the job market is therefore a key task of Dual Studies programs. The **extended business network** opening up for universities in the context of Dual Studies is an excellent opportunity for **capitalizing on the linkages for systematic guidance and placement activities**, including the management and active use of alumni networks.

To make available **systematic guidance, placement and networking offers** for Dual Studies and the university in general, responsibilities for specific career and liaison measures need to be assigned to either designated Dual Studies staff or central university offices (e.g., career center, international office, financial aid department).

The **main functions** in the field of career and network services are illustrated in the following figure.

Figure 21: Career and networking functions

CAREER GUIDANCE
e.g., via company presentations and internships

JOB PLACEMENT
e.g., via job fairs and matching activities

ALUMNI NETWORKS
e.g., for mentoring

A full discussion of general career and networking measures for universities is beyond the scope of this handbook. This chapter thus focuses on such **aspects and opportunities that are specific to Dual Studies programs**.

Career Guidance and Job Placement

Fostering **high employment rates** of their students is a key interest of higher education institutions since an above-average graduate employment rate can be considered a unique selling point to attract students and contribute to a good reputation of the university.

In addition to the practice-oriented education, the **extensive partner network** built up for Dual Studies programs offers a variety of opportunities to be exploited for further **career guidance, matching, and job placement measures** for students - from orientation days and career talks over mentoring programs to job fairs and other matching formats (see Figure 16).

Also, the effect of the regular **personal contact** from university staff to the companies should be capitalized. For instance, the university supervisors for practical phases should actively address employment matters of final year students during company visits, promoting employment offers for the student. Further, the supervisors can systematically **inquire about vacancies** and HR needs of the companies during the visits and feed this information into the universities' matching efforts for final year students and graduates.

In order to understand and promote actual employment impacts and successes, both solid **graduate tracking** (see also [tracer studies](#)), as well as a vivid alumni network, are important.

Alumni Networks

Creating an **engaged alumni network** is beneficial for universities (and Dual Studies programs in particular) for many reasons. First and foremost, Dual Studies alumni can be considered **brand ambassadors** for Dual Studies. As such, alumni can be supportive in attracting new partner companies and generally promoting Dual Studies outside the university. Also, alumni may serve to systemize communication structures between the university and the private sector.

An alumni network can only be active and successful if it receives **dedicated and regular attention from the university** side – and attractive offers for involvement and information. The focal point of contact for interaction with the network should be the **Dean of Dual Studies**. Coordination may further be needed with the **universities' career center**.

In a nutshell, the following **options** may be further exploited for a Dual Studies alumni network:

- Activation of the alumni network for the **recruitment of further partner companies**
- Promoting **alumni as Dual Studies tutors**; and granting alumni preferential treatment for any tutor related **training and certification offers**
- Initiating **local groups** and meetings for fun events and interaction with active Dual Studies students
- Involvement in **mentoring** activities
- Involve alumni as **lecturers and guest speakers**
- Invite alumni to round tables, working groups, technical presentations, career talks

Gender and Social Responsibility

More than half of the students enrolled in Higher Education institutions in Palestine are female – about 60% according to recent statistics. Nonetheless, female unemployment rates are higher than those of men and women are less likely to enter the labor market after graduation. The increase of **female enrollment and especially employment rates** – including in male-dominated programs – can thus be considered a relevant target for Palestinian universities.

Firstly, creating an attractive study offer for women and promoting female enrollment can of course increase the universities' overall registration and **student numbers**. Secondly, supporting the transition of highly qualified women into the labor market promotes **gender equality** as well as the closing of skill gaps in the industries.

The specifics of Dual Studies programs also bear certain **challenges** when it comes to female students. Particularly in the context of male-dominated technical or engineering trades, it may be more difficult to find training places, as companies may be hesitant to accepting female students into their technical departments and workshops.

The following **activities and measures** can be considered for promoting female enrollment and employment in Dual Studies:

- Define **gender targets and quota** for enrollment in different Dual Studies programs
- Pro-active search and **recruitment of female-led partner institutions**
- Facilitate **stipends and scholarships** for female students
- **Mentoring programs** (e.g., with businesswomen)
- "**Girls' days**" for information about male-dominated study programs
- **School campaigns** in girls' schools
- Display female students, employers, and employees as roles models in **promotional materials**
- Targeted **matching and placement services** for female graduates

Beyond promoting gender equality, the **social responsibility of universities** (*University Social Responsibility* (USR)) is increasingly on the agenda of higher education institutions as important members of the local civil society. Universities should integrate social responsibility aspects into their strategies and define initiatives in the field of social responsibility, environmental sustainability, or public and cultural engagement. This may include inclusive education targets (e.g., measures for students with disabilities or students from remote areas) or sustainable resource planning for the university. Dual Studies partner companies may be actively involved in the definition of priorities and implementation of initiatives together with the local communities.

At a Glance

The list below summarizes a (non-exhaustive) **bouquet of options and activities** that are possible in the context of career guidance, job placement, and alumni networking.

Figure 22: Guidance, placement, and networking options

JOB FAIRS AND MATCHING ACTIVITIES	• Job fairs and other matching activities (e.g., career speed dating) with dual partners on university premises for information and matching, both for DS and regular students
DS ALUMNI DATABASE AND INFORMATION	• Set up and management of Dual Studies alumni database • Regular contact and updates through newsletters, event invitations, publications
DS ALUMNI GROUPS	• Initiation of alumni sub-groups e.g., graduate business women, engineering graduate group • Activation of alumni sub-groups for career talks, mentoring, techncial working groups
CAREER ORIENTATION DAYS	• Presentation of Dual Studies programs and partner companies (see also Chapter 7)
INTERNSHIPS AND ATTACHMENTS	• Platform for internship and attachment opportunities for regular university students with dual partner companies • Internship program with German companies
COMPANY DATABASE AND JOB OFFERINGS	• Company database including DS and other industry partners • Regular contact and updates through newsletters, event invitations, publications • Job postings by parter companies on university website
STIPENDS/ SCHOLARSHIPS	• For semesters/internships and post-graduate training abroad, e.g. in Germany
MENTORING PROGRAMS	• Mentoring programs from: advanced students for new students; alumni for present students; females for female students
PROFESSIONAL SKILLS TRAINING OFFER	• Topics e.g. application and CV writing, job interview preparation, written and oral communication skills in general
ENTREPRENEURSHIP	• Entrepreneurship and bussiness planning training, simulation projects, student companies, start-up support and linkage to business incubators and national support structures • Possible involvement of partner companies in training, evaluation and feedback panels
CAREER TALKS	• Presentations, panel discussions, speeches with partner companies, alumni, external guests
GENDER-SPECIFIC MEASURES	• specific guidance and mentoring for women, such as the cooperation with the Business Women Forum (role model day, coaching & mentoring), Girls' Days
UNIVERSITY SOCIAL RESPONSIBILITY (USR)	• Initiatives of social and environmental responsibility, ideally in collaboration with the local community and partner companies

11 QUALITY MANAGEMENT

Quality and project management concepts, which are also applicable to the introduction of new "academic products" such as Dual Studies programs, can be illustrated by the simple management cycle from planning to review as illustrated below.

Figure 23: Strategic management cycle

11.1 Strategic and Operational Planning

Goal Setting and Strategic Orientation

For the introduction and implementation of new academic programs, the first task is to **define the strategic objectives** of the "project". Overall strategic objectives and targets for the introduction of Dual Studies programs may be both **qualitative and quantitative**, as the figure below illustrates.

Figure 24: Possible qualitative and quantitative objectives

Qualitative objective areas	Quantitative objective areas
• Employability and employment of students	• Student enrollment
• Recruitment of top students	• Gender quota
• Quality of training at the university and workplace	• Graduation quota
• Student satisfaction	• Program and university income
• Employer satisfaction with students and graduates	• Number of enrolled partner companies
• Establishment of a sustainable company network (for student training and employment)	• Numbers of trained lecturers, tutors, workshops
• Social objectives, such as increased female participation and employment	• Number of programs, curricula, documents, and materials developed
• Quality of private sector cooperation	

Different objectives may be **interrelated** and often are on different levels of the timeline. Objectives may be structured by **strategic goals (outcomes)** and **medium- and short-term outputs and milestones**. Boundaries between the different levels are fluent. A good strategic level planning horizon is between 3-5 years.

Operational Planning

The **operational plan** is a key instrument to manage the implementation according to the overarching strategy. In the **operational plan**, the implementation approach in line with the strategic framework is broken down to:

- Activities
- Timeframes and milestones
- Responsibilities and resources

Operational planning usually involves a broad Global Operational Plan over the complete time span of the project, in which only the key activities and rough time planning are sketched. The main implementation instrument is the **Annual Operational Plan**, which lays out the details and responsibilities of the yearly activities. It uses the format of a *Gantt chart* and is jointly discussed and developed on a yearly basis in the context of a **planning workshop** at the beginning of the year.

The annual operational plan is a **dynamic document** that should be reviewed and adapted at least on a quarterly basis.

11.2 Monitoring and Evaluation

Monitoring System

A monitoring system is needed in order to **observe and track progress** and **identify problems** and challenges at an early stage and take corrective measures if needed. Monitoring also serves to **produce data and evidence for reporting and documentation** purposes, e.g., towards university management, donors and supporters as well as the general public. The monitoring and evaluation system must be based on the objectives that have been defined in the planning stage. The main instrument to make project progress measurable is the **definition of indicators** for each objective.

Available Information and Data Sources

The monitoring system shall draw on several established data and documentation bases, which will be gradually expanded to meet the monitoring needs.

- **Registration system**: The registration system managed by the registration department is usually the information system and portal at the university in which all key student-related matters are registered and documented. It documents each student's individual academic history and can also provide **gender-differentiated summary data** on:
    - Student applications and enrollment
    - Completion numbers and rates
    - Passing/failing of courses
    - Student grades
    - Drop-outs
    - Scholarships
- **Student evaluation of lectures** is a key quality management tool that should be used at university level to monitor and evaluate the academic training phases. In course evaluations students may give feedback after each course regarding:
    - Adherence to the syllabus
    - Teaching quality
    - Coursebook and materials
    - Adherence of schedules
    - Examinations
    - Course environment
    - The evaluations are anonymous but mandatory. Without the completion of the evaluation, the student does not get access to their grades

- **Student practical period reports** provide information on the quality of practical training, tasks performed and compliance with the training plan, and student satisfaction

- **Study director reports** (company profile and company visit report) from regular company visits

- **Student evaluation by companies** provides information on student progress, performance, and professional skills development

- **Practical phase evaluation workshops and questionnaires** (see [monitoring tools)](#)

- **Workshops** (minutes) on general challenges, and functioning of the interaction

Impact Evaluation and Tracer Studies

In addition to the regular monitoring and evaluation instruments, **(impact) evaluation surveys** are an important instrument in the quality management and assurance process. The monitoring manual foresees:

- Yearly survey with partner companies

- Semi-annual survey for students

On an impact level, **tracer studies** are an important instrument for determining the strategic objectives of student employability and demand-orientation of the training: The tracer study should inform about the employability of graduates (labor market information) and about the usefulness of the study program (retrospective evaluation).

The main **observation areas** in for tracer studies include:

- The employment situation of graduates;

- The time to get the first employment;

- The salary/income of graduates;

- The position of graduates;

- The main work tasks/duties of graduates;

- The job satisfaction of graduates;

- The use of competencies and required competencies;

- The usefulness of study/training program;

- The need for further education and training;

- Strengths and weaknesses of the study/training program;

- Proposals for improvements of the study program.