

Faculteit der Aard- en Levenswetenschappen

Herstelplan ten behoeve van de heraccreditatie van de opleiding **M Biomolecular Sciences**

Administratieve gegevens

Naam opleiding	M Biomolecular Sciences
Croho nummer	60616
Oriëntatie	WO master
Omvang	120 EC
Verval datum accreditatie	31-12-2013
Locatie	Amsterdam

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1. INLEIDING

Alvorens de inhoud van het herstelplan te presenteren zet de faculteit in deze inleiding enige kanttekeningen van voornamelijk procedurele aard. De opleiding Biomolecular Sciences is gevisiteerd op 30 mei 2012 binnen het cluster scheikunde. De opleiding bevindt zich, zoals de visitatiecommissie opmerkt in haar eindrapport, op het grensvlak van de scheikunde en de moleculaire biologie en de keuze voor een cluster was daardoor lastig. Na enige aarzeling is gekozen om de opleiding mee te laten lopen in het landelijke cluster scheikunde. Achteraf bezien was het wellicht beter geweest om, tegen de heersende opvattingen in, toch te kiezen voor een 'stand-alone' visitatie omdat aansluiting bij een landelijk cluster nu eenmaal minder vrijheidsgraden voor de samenstelling van de commissie laat. Ook voor de visitatiecommissie zelf is het oordelen over een afwijkende opleiding in een overigens redelijk homogeen cluster lastiger. Ook achteraf bezien had er in betere afstemming tussen cluster, opleiding en VBI wellicht een commissielid toegevoegd kunnen worden. Dat is echter niet gebeurd. Om nu, bij het beoordelen van het herstelplan te zorgen voor zowel goede aansluiting bij de opleiding als voor continuïteit van beoordeling is, in overleg met de VBI gekozen voor een commissiesamenstelling met deels nieuwe leden.

De volgende kanttekening heeft betrekking op de verkregen mondelinge terugkoppeling ter afsluiting van het visitatiebezoek op 30 mei 2012, die tot gevolg heeft gehad dat de opleiding en faculteit een lange tijd in veronderstelling leefde dat de opleiding zonder meer accreditatiewaardig werd bevonden. Weliswaar kon uit de woorden van de voorzitter opgemaakt worden dat door de heterogene instroom van studenten de inhoudelijke diepgang in de master extra bewaking nodig heeft, maar tegelijkertijd ook dat dit probleem de aandacht krijgt die het verdient en het goed wordt aangepakt. Hierdoor is de gelegenheid verloren gegaan eerder al te bezinnen op eventueel geconstateerde gebreken en zo nodig verbeteringen door te voeren voor de nieuwe lichting studenten die op 3 september 2012 begonnen aan de opleiding.

De verbazing aan onze kant was dan ook groot toen we, vele maanden na de mondelinge rapportage, het conceptrapport ontvingen waarin de visitatiecommissie haar oordeel over de opleiding heeft neergelegd met een onvoldoende op standaard 2 en 3. Tegelijkertijd houdt de commissie een pleidooi voor het toekennen van een herstelperiode, omdat zij het een belangrijke opleiding vindt, op een interessant kruispunt van disciplines en omdat zij ziet dat er grote behoefte is aan afgestudeerden. Knelpunten in het huidige programma zijn volgens de visitatiecommissie:

- instroom divers en van wisselend niveau qua kennis en vaardigheden;
- startvakken met teveel gastdocenten;
- programma dat te weinig rekening houdt met het wegnemen van deficiënties als gevolg van de diverse instroom, en te veel accent legt op stages (66 EC in totaal), waardoor er te weinig ruimte is voor verdieping van kennis;
- stages die frequent buiten de instelling plaatsvinden waarbij conform de vigerende regeling de externe begeleiding een te grote rol heeft in de beoordeling.

De faculteit was het niet eens met het oordeel van de visitatiecommissie en de door haar voorgestelde wijzigingen, maar respecteert haar zienswijze en overwegingen en heeft daarom de gelegenheid te baat genomen om het programma opnieuw te doordenken. Het gevolg van dat doordenken is dat we een herstelplan geformuleerd hebben dat de aanbevelingen van de visitatiecommissie voor een aanzienlijk deel overneemt. Met name op drie hoofdpunten voeren we verbeteringen door en verwachten daarmee de opleiding nog beter te maken dan die naar onze overtuiging al is. Het gaat om: 1) beter gedefinieerde en meer transparante selectie van studenten die instromen in de opleiding, 2) meer ruimte voor verdiepende kennis in het programma (9 EC extra), en 3) systeem van borging van kwaliteit en niveau van de stages. Met dit herstelplan komen we tegemoet aan de hoofdbezwaren van de commissie en behouden we tevens het sterke karakter van de opleiding. Dit wordt immers zowel door studenten als het afnemend veld zeer gewaardeerd.

2. STANDAARD 2 ONDERWIJSLEEROMGEVING

De leeromgeving van de opleiding wordt door de visitatiecommissie als onvoldoende beoordeeld. Analyse van het rapport geeft aan dat de belangrijkste bezwaren van de visitatiecommissie zijn gelegen in het feit dat de instroom van de opleiding zeer heterogeen is en dat het programma onvoldoende is toegesneden om eventuele deficiënties weg te werken bij alle studenten. Er zijn naar het oordeel van de visitatiecommissie te weinig cursorische onderdelen waar verdiepende kennis wordt aangebracht en in verschillende cursussen wordt teveel gebruik gemaakt van gastdocenten.

Tijdens het gesprek met de adviescommissie herstelplan Biomolecular Sciences (dd 26-03-13) werd duidelijk dat de belangrijkste bezwaren van de visitatiecommissie zijn gelegen in het feit dat de instroom van de opleiding zeer heterogeen is en dat de opleiding geen heldere criteria heeft geformuleerd ten aanzien van het aanvangsniveau van de Academische Vaardigheden waarover de studenten moeten beschikken. Zodoende blijft er twijfel of alle studenten wel in voldoende mate gekwalificeerd zijn om met de opleiding te starten.

2.1. INSTROOM

De visitatiecommissie adviseert ten aanzien van de instroom een strengere selectie op niveau, vak inhoud, cijfers, relevante onderzoek (laboratorium) vaardigheden en academische vaardigheden. De opleiding deelt de mening van de visitatiecommissie dat de regels van toelating aangescherpt kunnen worden en had daar al plannen voor. De mogelijkheid voor aanscherpen wordt door het invoeren per 2013-2014 van de "harde knip" tussen BSc en MSc ook gefaciliteerd. Dit betekent dat ook de BSc studenten uit de eigen instelling hun BSc diploma moeten overleggen voordat zij MSc vakken kunnen gaan volgen. Daarnaast kent de faculteit een aanbod in het minor programma (Biomolecular and Neurosciences) dat studenten een goede mogelijkheid biedt om zich optimaal voor te bereiden voor de master Biomolecular Sciences. Aan deze minor, of delen daarvan, kunnen ook studenten van andere instellingen, zoals die van Hogere Laboratorium Opleidingen (HLO), deelnemen.

2.1.1. TOELATINGSPROCEDURE

De toelatingsprocedure wordt per 2013-2014 uitgevoerd door de toelatingscommissie. De toelatingscommissie bestaat uit 3 leden te benoemen door het bestuur van de faculteit. De toelatingscommissie bestaat uit de opleidingsdirecteur van de opleiding en 2 stafleden:
Prof.dr. H. Lill, hoogleraar Structuurbiologie, opleidingsdirecteur
Dr. H.S. van Walraven, docent, stafid afdeling Structuurbiologie, mastercoördinator
Dr. M.S. Siderius, docent, stafid afdeling Farmacochemie

Studenten met een relevant BSc diploma en studenten van een HBO/HLO opleiding met richting "research" in de afstudeerrichtingen Biochemie en/of Moleculaire Biologie worden uitgenodigd aan de toelatingsprocedure mee te doen. De HBO/HLO studenten met een afstudeerrichting "diagnostiek" komen niet in aanmerking.

De opleiding legt voor alle studenten "de toelatingslat" even hoog en studenten worden met een afgerond Bachelor diploma toegelaten op basis van de onderstaande criteria.

1. Studieprestaties: richtlijn 7.0 gemiddeld en minimaal een 7.5 voor de bachelor stage¹ (buitenlands diploma een GPA van minimaal 3 uit 4 of minimaal "second division, upper level").
2. Domein specifieke vakkennis: minimaal 24 EC onderwijs in de biochemie en moleculaire (cel)biologie, waarvan minimaal 12 EC op niveau 300.

¹ Indien het stage cijfer niet definitief is vastgesteld voor de aanmelddatum van de opleiding (1 juni) zal informatie over de student ten aanzien van de stage worden ingewonnen bij de stagebegeleider. In juni moet er al wel een beeld van de stage gevormd kunnen worden ten aanzien van talent voor onderzoek en of de stage een 7.5 of meer waard zal zijn.

3. Relevante onderzoeksvaardigheden blijkend uit een stage in een biochemisch en/of moleculair celbiologisch onderwerp. De stage dient gedaan te zijn bij een research afdeling binnen een universiteit, academisch medisch centrum of gerenommeerd onderzoeksinstituut.
4. Relevante academische vaardigheden blijkend uit i) een universitair BSc diploma waarin de ontwikkeling van academische vaardigheden tot de eindtermen behoort of ii) het met succes uitvoeren van de volgende opdracht:
 Studenten met een niet universitair Bachelor diploma (HBO/HLO) dienen een in het Engels gestelde uiteenzetting te maken waaruit blijkt dat ze over voldoende academische vaardigheden beschikken. Tijdens het intakegesprek met de toelatingscommissie wordt deze uiteenzetting mondeling in het Engels gepresenteerd. Deze presentatie (ca 15 min) dient aan te sluiten bij het afstudeerwerk van de student. Het schriftelijke en mondeling deel tezamen zal beoordeeld worden en moet minstens een 7.5 opleveren
 Aspecten die aan de orde komen en door de toelatingscommissie worden getoetst zijn:
 - a. De onderzoeksvraag:
 - de aspirant student is in staat de relevantie van het onderwerp uit te leggen,
 - b. De plaats van het onderwerp in het internationaal lopende onderzoek:
 - de aspirant student kent de relevante literatuur en kan vanuit de beschikbare kennis de onderzoeksvraag definiëren en beredeneren,
 - c. De methode(s):
 - de aspirant student kan de keuze voor en de sterkte en zwaktes van de toegepaste methodes duidelijk maken,
 - d. Evaluatie en discussie:
 - de aspirant student is in staat zijn resultaten in het kader van in het betreffende vakgebied lopend onderzoek, te evalueren en te bediscussiëren;
 - de aspirant student kan zijn eigen onderzoek in verbinding brengen met naastliggende vakgebieden, heeft ideeën over vervolgonderzoek en kan aangeven in welke richting en met welke methodes dat zou moeten gaan.

Enige diversiteit in de instroom qua vooropleiding wil de opleiding laten bestaan. Getalenteerde en gemotiveerde studenten met een wat afwijkende achtergrond (zoals bijvoorbeeld met een Bachelor Geneeskunde) of die hun Bachelor diploma enige tijd geleden hebben behaald, zullen worden toegelaten tot het programma na het volgen van een 'op maat' samengesteld schakelprogramma. Met het volgen van vakken uit de minor Biomolecular and Neurosciences voorafgaand aan de MSc, kan worden voorzien in dit individuele efficiëntie programma. De opleiding heeft deze maatregel in studiejaar 2011-2012, het eerste jaar dat deze minor werd aangeboden, reeds met succes toegepast. Vanwege de populariteit van deze minor hebben in 2012-2013 meer WO-BSc voor de MSc Biomolecular Sciences gekozen wat er ook voor zorgt dat de heterogeniteit van de instroom vermindert.

2.2. PROGRAMMA

De visitatiecommissie gaf aan dat het beoordeelde programma onvoldoende is toegesneden op het wegwerken van eventuele efficiënties bij alle studenten. Daarnaast zijn er naar het oordeel van de visitatiecommissie te weinig cursorische onderdelen waar verdiepende kennis wordt aangebracht en in verschillende cursussen wordt teveel gebruik gemaakt van gastdocenten.

De opleiding is van mening dat met het aanscherpen van de instroomeisen en de strengere selectie bij aanvang van de opleiding er geen studenten binnen zullen komen met efficiënties, noch vakinhoudelijk noch qua onderzoeksvaardigheden en academische vaardigheden, en zijn grote aanpassingen in het programma niet nodig.

Om tegemoet te komen aan de zorgpunten van de visitatiecommissie heeft de opleiding besloten het programma op een aantal punten aan te passen. De volgende aanpassingen zijn per 2013-2014 voorzien:

1. Het cursorisch deel van het programma wordt uitgebreid.
2. Er zullen minder gastdocenten worden ingezet in de startvakken
3. De eerste stage zal voortaan altijd in de regio Amsterdam plaatsvinden en deze wordt begeleid en beoordeeld door docenten in dienst bij VU/ VUmc of op termijn bij UvA/AMC (dit laatste moet gezien worden in het licht van de beweging naar een bètafaculteit in Amsterdam), zodat de

- didactische kwaliteit van de begeleiding ter plaatse door de opleiding wordt geborgd.
4. De totale stageduur wordt teruggebracht*.

* De opleiding brengt de totale stageduur van 66 EC terug tot 60 EC en handhaaft daarmee twee stages. Het is binnen de levenswetenschappen en de exacte wetenschappen bij de VU, maar ook landelijk, zeer gebruikelijk een stage omvang te hanteren van rond de 50% van de opleiding. Ook de VU masteropleiding Drug Discovery and Safety, die door dezelfde visitatiecommissie als voldoende is beoordeeld, kent een optie om een tweetal stages te doen met een totale omvang van 66 EC. Het laten vervallen van de 'tweede' stage zou het karakter van het programma ernstig aantasten, onrecht doen aan de onderwijsvisie van de opleiding en de opleiding zou uit de pas lopen met de overige opleidingen binnen de faculteit. Met de voorgestelde aanpassingen blijft naar ons inzicht de aard van het programma behouden en neemt de controle over de kennisinhoud toe.

2.2.1. PROGRAMMA PER 2013-2014

Het programma beschikt over de volgende onderdelen.

Academic core (6EC)

In het eerste semester van het eerste jaar volgen alle studenten Scientific Writing in English (3 EC) en een leerlijn 'lezen primaire literatuur', geïntegreerd in de 2 portal courses. In het tweede studiejaar volgen alle studenten de cursus Ethics in Life Sciences (3 EC).

Portal courses (12 EC)

Onafhankelijk van de specialisatie die de student kiest, starten de studenten in het eerste jaar met twee startvakken (totale omvang 12 EC). Verantwoordelijkheid voor cursussen binnen de opleiding ligt bij de cursusleider. De eerste cursus (Protein Science) bevat colleges die worden gegeven door de cursusleider en een aantal andere VU docenten van de MSc Biomolecular Sciences. De tweede cursus (Genomes and Gene Expression) bevat voornamelijk colleges die worden gegeven door de cursusleider. Daarnaast wordt een enkel gastcollege (betreffende case studies) door gekwalificeerde docenten van buiten de opleiding niet uitgesloten. Echter, het aandeel gastcolleges zal, ten opzichte van het oude programma, worden verminderd tot maximaal 15% van de colleges en de stof zal geen onderdeel uitmaken van het tentamen. De omvang van het start programma is hiermee niet gewijzigd, het karakter wel.

Specialisation courses (12 EC)

Naast de twee startvakken volgt de student ten minste twee theoretische cursussen in het domein van zijn gekozen specialisatie.

Technical modules (6 EC)

Studenten kiezen minimaal twee cursussen van 3 EC die gericht zijn op specifieke praktische technieken. (voor een nadere uitleg, zie de kritische reflectie)

Eerste stage (24-30 EC)

Deze eerste stage vindt plaats in de regio Amsterdam onder verantwoordelijkheid van VU/VUmc docenten.

Vakinhoudelijke keuzecursussen (15 EC)

In het tweede studiejaar volgen de studenten keuzeonderdelen met een omvang van 15 EC (caputs, cursussen uit het aanbod van Biomolecular Sciences of andere, voor het vakgebied relevante, cursussen op MSc niveau)

Literatuur onderzoek (9 EC)

Afstudeerstage (30-36 EC)

Deze stage kan, na goedkeuring van het project, buiten de instelling worden gedaan, echter onder volledige verantwoordelijkheid van de VU. Het totaal aantal EC van de Eerste stage en de Afstudeerstage samen is 60.

Bijlage 1 geeft het jaarschema van alle programmaonderdelen. Hieronder volgt een voorbeeld van een individueel examenprogramma zoals dat er uit zou kunnen zien.

Jaar 1

September

juni

Scientific writing in English (3 EC)					
Portal Course Protein Science (6 EC)	Portal Course Genomes & gene Expression (6 EC)	Specialisatie specifieke Cursus (6 EC)	Specialisatie specifieke cursus (6 EC)	Technische modules 2 x 3 EC)	Research Project (27 EC)
<i>Geïntegreerde leerlijn Reading Primary Literature</i>					

Jaar 2

September

juni

Keuze-cursus (6 EC)	Caput (3 EC)	Keuze-cursus (6 EC)	Literatuurstudie (9 EC)	Ethics (3 EC)	Afstudeerstage (33EC)
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2.2.2. SAMENVATTEND, WIJZIGINGEN IN HET PROGRAMMA

Het programma omvat concreet de volgende wijzigingen ten opzicht van het oude programma:

1. Twee verplichte startvakken = 12 EC (geen verandering in omvang, wel in karakter)
2. Twee vakken per specialisatie, verplichte keuze = 12 EC (6 EC méér per specialisatie)
3. 6 EC academic core: Scientific Writing in English en Ethics, (3 EC minder verplicht ten opzichte van oude programma)
4. Het totaal aan stages is 60 EC (6 EC minder)
5. De vrijkomende EC's komen ten gunste van verdieping van kennis door uitbreiding van het aantal vakken en caputs.

3. STANDAARD 3 TOETSING EN GEREALISEERDE EINDKWALIFICATIES

3.1. SYSTEEM VAN BORGING VAN KWALITEIT EN NIVEAU VAN DE STAGES

Ten aanzien van standaard 3 heeft de visitatiecommissie vooral moeite met het systeem van borging en niet met de geconstateerde eindresultaten van de stages. De faculteit was echter al bezig verbeteringen in het systeem door te voeren voordat het oordeel van de visitatiecommissie bij de faculteit bekend werd. Per 01-09-2012 is een nieuwe stageregeling van kracht geworden (zie bijlage 2). Belangrijkste verbeteringen ten opzichte van hetgeen de visitatiecommissie aantrof zijn:

1. Eindverantwoordelijkheid van de stage ligt bij de faculteit en een door de examencommissie daartoe aangewezen VU/VUmc docent (= VU examiner). Alle stages inclusief de begeleiding dienen vooraf te worden goedgekeurd.
2. Eindverantwoordelijkheid voor begeleiding en beoordeling is expliciet belegd bij de VU examiner. De rol van de externe begeleider in de beoordeling van het eindproduct is teruggebracht tot die van informant voor de VU examiner.
3. Het eindproduct wordt beoordeeld door de verantwoordelijke VU examiner en een onafhankelijke VU/VUmc docent, die verder geen betrokkenheid heeft bij de begeleiding van de betreffende student. Hiermee is de begeleiding en beoordeling strikt gescheiden.
4. Het eindcijfer voor de stage komt tot stand door een gewogen gemiddelde op de volgende vier beoordelingsaspecten: schriftelijk eindproduct (verslag), mondelinge presentatie, uitvoering van de stage en attitude en professionele ontwikkeling. Geen enkel aspect mag echter onvoldoende zijn (geen onderlinge compensatie).

Afgeleid van deze nieuwe, verbeterde, regeling heeft iedere opleiding een stagehandleiding en bij de opleiding behorende beoordelingsformulieren opgesteld (zie bijlage 3) en reeds in gebruik genomen.

3.2. NIVEAU VAN AFGESTUDEERDEN

De faculteit hecht eraan hier te benadrukken dat er over het niveau en de kwaliteit van de (bestudeerde) afstudeerwerkstukken geen verschil van mening bestaat tussen de faculteit en de visitatiecommissie: de bestudeerde afstudeerwerken waren alle aan de maat.

De studieprestaties van de drie groepen studenten (universitaire BSc, HBO/HLO instromers en internationale studenten) wordt bijgehouden van de cursussen, stages en literatuur studie. Er zijn grote individuele verschillen, maar gemiddeld zijn de studieprestaties goed en lopen deze niet significant uiteen.

Ter ondersteuning van het gerealiseerde niveau bij de afgestudeerden merken we nog op dat van de afgestudeerden in 2009/10 en 2010/11 meer dan 95% werkzaam is in de wetenschap in het betreffende vakgebied. 79% van deze afgestudeerden is bezig met het voorbereiden van een PhD. Een dergelijk hoog percentage uitstroom richting een PhD geeft aan de studenten die wij hebben afgeleverd een goede bijdrage kunnen leveren aan de kennisontwikkeling van de Biomoleculaire wetenschappen.

Ondanks de goede resultaten die de opleiding de afgelopen jaren heeft geboekt is de opleiding ervan overtuigd met dit herstelplan een belangrijke verbetering te kunnen maken om het niveau de komende jaren voor alle studenten te kunnen garanderen.

4. BIJLAGEN

1 Year Schedule MSc Programme in Biomolecular Sciences 2013 - 2014

2 Student placement regulations 2012 FALW

3 Placement Manual Biomolecular Sciences

2-year programme

School of Health and Life Sciences FALW - VU University Amsterdam

Last updated: March 8, 2013

General coordinator: dr. H.S. van Walraven

Specialization	period 1												period 2												period 3												period 4												period 5												period 6											
	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26																													
Molecular Cell Biology;	AM_471023 (3) Scientific Writing in English (2 groups, week 36 - 43. Optional group week 44 - 51)																																																																							
	AM_470145 (6) Protein Science: first year portal course						AM_470614 (6) Genomes & Gene Expression: first year portal course						AM_470615 (6) Cell Structures & Function						AM_1020 (6) Evolving Networks						AM_470629 (3) Biophotonics 1: Microspectroscopy						AM_470630 (3) Biophotonics 3: Practical training						X_432763 (FEW, 3) Molecular Photo-biology						Internship (24-30 EC). Individually planned in semester 2; starting date may vary. For more information consult the study guide or programme coordinator.																													
	AM_1021 (3) Microbial Genomics						AM_470613 (6) Developmental Biology						AM_470509 (6) Extreme Biology						X_432540 (FEW, 3) Molecular Biology Techniques						AM_470641 (3) Protein Science Techniques						X_432541 (FEW, 3) Molecular Pharmacology						X_432542 (FEW, 3) Biomolecular Screening																																			
	X_432539 (FEW, 3) Business and Innovation in Life Sciences*																		X_432539 (FEW, 3) Business and Innovation in Life Sciences						AM_470707(3) Ethics in Life Sciences						X_422583 (FEW, 6) Dynamics of Biomolecules and Cells																																									
																														X_405019 (FEW, 6) Structural Bioinformatics																																										
* Business and Innovation in Life Sciences is offered twice a year (September and January) in 2013 - 2014; only once in 2014 - 2015																																																																								
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 10px; background-color: #cccccc;"></div> Compulsory courses</div> <div style="border: 1px solid black; width: 20px; height: 10px; background-color: #00bfff;"></div> Compulsory to obtain at least 12 EC specialization courses																																																																								

Specialization	period 1												period 2												period 3												period 4												period 5												period 6											
	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26																													
Biological Chemistry;	AM_471023 (3) Scientific Writing in English (2 groups, week 36 - 43. Optional group week 44 - 51)																																																																							
	AM_470145 (6) Protein Science: first year portal course						AM_470614 (6) Genomes & Gene Expression: first year portal course						X_432536 (FEW, 6) Drug-induced Stress and Cellular Responses						X_432535 (FEW, 6) Signal Transduction in Health and Disease						X_432540 (FEW, 3) Molecular Biology Techniques						AM_470641 (3) Protein Science Techniques						X_432541 (FEW, 3) Molecular Pharmacology						X_432542 (FEW, 3) Biomolecular Screening						Internship (24-30 EC). Individually planned in semester 2; starting date may vary. For more information consult the study guide or programme coordinator.																							
	X_432538 (FEW, 6) Chemical Biology																		AM_470629 (3) Biophotonics 1: Microspectroscopy						AM_470630 (3) Biophotonics 3: Practical training						X_432734 (FEW, 6) Project Computational Design and Synthesis of Drugs																																									
	AM_1021 (3) Microbial Genomics																		X_432539 (FEW, 3) Business and Innovation in Life Sciences						AM_470707(3) Ethics in Life Sciences						X_422583 (FEW, 6) Dynamics of Biomolecules and Cells																																									
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* Business and Innovation in Life Sciences is offered twice a year (September and January) in 2013 - 2014; only once in 2014 - 2015																																																																								
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Information on the resit schedule will be published, when available, on www.falw.vu.nl/en/students/schedules/Exams-and-re-exams-planning . FEW courses have different resit dates; general schedule to be found on www.few.vu.nl/nl/studenten/roosters -> jaarindeeling 2013 - 2014	Information on holidays can be found on www.falw.vu.nl/en/students/schedules , which also refers to the official VU-calendar (2012 to 2015; look for 2013/2014).
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Student Placement (Internship) and Research Project Regulations

1. Preamble

The student placement or research project is an important part of the Master's and Bachelor's programme and involves many different aspects, such as, theoretical preparation, practical execution, literature survey, report writing, oral presentation, and participation in the scientific activities of a research department. The regulations outlined below describe, in chronological order, the process of completing the student placement or research project from the beginning (the admission) through the actual execution with its supervision to the final stage (assessment and grading). The various stages of the process will be supported by forms and a placement manual, both of which are supplied separately. These regulations together with the forms and the placement manual are designed to secure the quality assurance of the student placement and research project.

An overview of the process of the placement and all its phases is provided in Appendix 1.

The regulations were approved by a decision of the board of the Faculty of Earth and Life Sciences on September 3rd, 2012.

2. Scope and definitions

These regulations

- apply to all students enrolled in a Bachelor's or Master's programme at the Faculty of Earth and Life Sciences
- apply to student placements, internships, theses and research projects listed in Appendix 2
- cover both internal and external placements
- use the following definitions:

Placement:	student placements, internships, theses and research projects listed in Appendix 2
Internal placement	placement organized by a research department belonging to one of the faculties of the VU University Amsterdam or to the VU Medical centre (VUmc) that is involved in the programme in which the student is enrolled
External placement	placement in companies, research institutes, universities, hospitals, etc. outside VU University Amsterdam or VUmc.
VU supervisor	a supervisor holding a position at VU University or VUmc who is responsible for the supervision of the student during the entire project, who has relevant knowledge of the placement subject and is appointed as examiner by the Examination Board
On-site Supervisor	a supervisor on location with relevant knowledge of the placement subject and preferably holding a PhD and a position in higher education or research
Second assessor	an assessor holding a position at VU University or VUmc and appointed as examiner by the Examination Board. He/she has not been involved in supervision of the placement. His/her task is to provide an independent assessment of the final report.
Placement manual	a manual presented by the programme that contains at least the subjects as described in section 7
AER	Academic and Examination Regulations

All placements of students enrolled in a Bachelor's or Master's programme at the Faculty of Earth and Life Sciences, take place under the final responsibility of the Faculty.

3. Admission

3.1 Requirements

A placement must meet the following requirements:

- The student
 - meets the entry requirements as described in the Study Guide and the Academic and Examination Regulations (AER),
 - is enrolled in the programme of which the placement is part of and
 - has completed any previous placement
- The project has the required academic level and content
- The project is feasible
- The supervisor(s) meet(s) the requirements as set down under 4.1
- A VU-Supervisor (see 4.1 below) is assigned to the placement
- Mutual agreements have been made between the student and supervisor(s) on the agreement form
- Possible additional requirements that are described in the relevant placement manual
- The relevant coordinator and the VU-Supervisor have approved the project

3.2 Admission process

The student must apply for approval of the placement with the relevant coordinator of the placement. Guidelines for the application are published in the placement manual. The coordinator will review the application within ten working days and if all requirements are met, the student will receive a written permission to start the project. The student cannot start a placement without permission the coordinator.

4. Supervision

4.1 Supervisor(s)

A VU-examiner is responsible for the supervision of the student during the entire project. This person is referred to as the **VU-Supervisor**. For external placements, the daily supervision on location will be carried out under the responsibility of an additional supervisor. This person is referred to as the **On-site Supervisor**.

Additional requirements can be set and are described in the placement manual.

4.2 Go/No Go Evaluation

Within four (in the case of a Bachelor's placement) or six (in the case of a Master's placement) weeks after the start of the placement a go/no go evaluation is made on basis of the criteria that are described in the placement manual.

The aim of the interim evaluation is to decide whether the project and the student have enough potential to continue (*Go*) or not (*No Go*). The evaluation is at least based on:

- Written material by the student, including the research proposal
- Execution of the project during the initial stage

The evaluation is carried out under responsibility of the VU-Supervisor. The student has to apply for the go/no go evaluation of the placement with the VU-Supervisor within the period that is presented in the placement manual. The VU-Supervisor will review the evaluation within five working days. If an On-site Supervisor is appointed, the VU-Supervisor will ask the On-site Supervisor for his/her judgement on the students' performance for the time the student has been working on the placement.

The outcome of the evaluation will be recorded on an interim evaluation form as present in the placement manual.

If it is decided that the project and/or the student do not have enough potential for a successful continuation, the outcome of the evaluation will be a 'No Go' and the placement will be terminated.

If it is decided that the project and the student do have enough potential for a successful continuation, the outcome of the evaluation will be a 'Go'. This means the placement can be continued, but, of course, it does not guarantee that the placement as a whole will be successful.

5. Assessment

5.1 Assessors

Final assessment of the placement is undertaken by the **VU-Supervisor** and a **Second assessor**, who also is appointed as examiner by the examination board. If an On-site Supervisor is appointed, the VU-Supervisor will take the assessment of the On-site Supervisor into account in the final assessment (see 5.2 below).

An additional requirement for the Second assessor is that he/she has not been involved in supervision of the placement. His/her task is to provide an independent assessment of the final report.

The relevant coordinator for the placement will determine whether the assessors meet the requirements before assessment takes place.

5.2 Assessment process

The final judgement is based on the following items:

1. Final placement report or otherwise agreed end product (also referred to as final report)
2. Oral presentation
3. Execution
4. Attitude

The criteria for the assessments, the relative contribution of the items to the final grade and assessment forms are presented in the placement manual.

Ad 1.

- The final report for a Master's placement will be written in English, unless the programme guidelines permit otherwise. The final report of a Bachelor's placement will be written in Dutch or English.
- The final report must meet the requirements as described in the placement manual.
- If a project is carried out by two or more students working together, each student is assessed individually on the basis of their own report. The individual contributions of each student must be clearly determined in advance, in order to facilitate individual assessment.
- The VU-Supervisor and student have agreed on the number of drafts that will precede the final version of the report. In general there are no more than two draft rounds.
- The definitive version of the final report must be submitted to the VU-Supervisor before the end of the agreed project period. The VU-Supervisor can refuse to assess the report if it does not meet the requirements as are described in the placement manual. If the report does meet the requirements the VU-Supervisor sends it to the Second assessor.
- Both assessors review the report as soon as possible, but at the latest within the period that is set in the AER for determining the results of the written interim examinations (fifteen working days).
- If the student does not submit the final report by the agreed submission date, the assessor will do the final assessment based on the latest draft version.
- If the student has failed the assessment, he/she can request for one re-submission of the end product within ten working days after registration of the final judgement. The assessors will decide on the length of time the student may have to hand in an improved version (generally ten working days). Both assessors will review the report as soon as possible, but at the latest within the period that is set in the AER for determining the results of written interim examinations (fifteen working days).

Ad. 2

- The student will present his report orally to an academic audience, according to the guidelines that are described in the placement manual.
- This oral presentation will be assessed under the responsibility of the VU-Supervisor.
- If the student has failed the oral presentation, he/she can request for one re-presentation within ten working days. The assessors will decide on the date (generally ten working days).

Ad. 3

- The student's execution of the placement will be assessed under responsibility of the VU-Supervisor. Criteria are presented in the placement manual.

Ad. 4

- The attitude of the student during the project will be discussed regularly with the student by both the VU-supervisor and/or the On-site supervisor. If students do meet the criteria for professional attitude as set in the placement manual this item will result in a pass, otherwise the result will be a fail. No marks will be given on this item.

The VU-Supervisor assesses the student on four items. The Second assessor provides an assessment of the final report.

Both assessors will make an independent assessment, on separate forms (See placement manual). The assessment will be carried out using a list of assessment criteria that are described in the placement manual. An additional assessor will be appointed by the examination board to assess the final report when i) the difference between the individual marks of the VU-Supervisor and the Second assessor is larger than 2.0 (on a scale 1-10) and ii) one of the assessors judges the final report as insufficient. In case a third assessor is appointed because of a large difference in grading between the two assessors, the final grade will be calculated as an average from all three results. In case the report was judged as insufficient by one of the assessors, the third assessor will determine whether the report is sufficient or not. If sufficient, the final grading is an average of the two highest marks. If insufficient, the final judgement of the report will be insufficient.

If an On-site Supervisor is appointed, the VU-Supervisor will ask the On-site Supervisor to assess the students' performance and will provide instructions on how this assessment will take place (e.g. in a word report, by an assessment form). The assessment of the On-site Supervisor will be taken into account in the final assessment of the VU-Supervisor.

Only if all marks for each item given by the VU-Supervisor and the Second assessor are a 6 or higher, will the placement be regarded as sufficient. In addition the student has to pass the item attitude. The final grade is calculated from the marks given by both assessors according to the weighting as described in the placement manual and, together with other administrative details, is written down on the final assessment form (Appendix 3). This is done by the coordinator.

When the final judgement of the placement is regarded as insufficient, the student will have to redo the placement completely on another subject and with different supervisors and assessors.

The Examination Board can appoint an additional examiner to carry out the assessment, either in the case of a random survey of assessments, or in a specific case for which the board feels there is reason to do so.

5.3 Administrative procedure for registration of the final grade

The study secretariat will register the final grade after the complete assessment dossier is handed in. This dossier includes:

- The final assessment form with the final grade (must be delivered by the coordinator)
- The assessment forms as filled out by the assessors (must be delivered by the coordinator)
- The final report (must be delivered by the student)

The final assessment form and the assessment forms as filled out by the assessors need to be signed, scanned and submitted to the study secretariat.

6. Responsibilities

The **VU-Supervisor** has primary responsibility for the quality (standard) and level of the student placement. He/she is responsible for overall supervision, assisting in formulating the project description and in particular supervising the realization of the end product (i.e.: discussing the research proposal, the drafts and the final report with the student).

The VU-Supervisor reviews progress of the project after the first four (bachelor) or six (master) weeks and decides whether or not the project and/or the student have enough potential to attain an acceptable level. At the end of the project the VU supervisor reviews and judges the internship. If an On-site Supervisor is appointed, the VU-Supervisor will ask the On-site Supervisor for his assessment of the student's performance.

The VU-Supervisor is also responsible for the tasks of the On-Site Supervisor (see below) if no On-site Supervisor is appointed.

The **On-site Supervisor** is responsible for the daily supervision and coaching of the student during the placement (e.g., arranging the necessary work facilities at the host organisation, assisting in finding background information on the subject being studied; assistance in the formulation of the problem, arranging the student's attendance of meetings within the organization). The On-site Supervisor will provide the VU-Supervisor and student with feedback on the student's attitude and execution of the project, thereby contributing to the assessment of the placement.

The **Second assessor** reviews the final report and provides an independent assessment.

The **Student** has the responsibility to make the best possible use of the placement opportunity and actively participate in the learning process. This includes the student being able to independently formulate personal learning objectives, monitor their own development, process feedback from the supervisors and reflect on their own functioning.

The **Coordinator** assists the student in finding a placement. Furthermore he/she is responsible for the validation of the level and content of the placement, the supervisors, the agreements that have been made, the assessors and the final grade.

The **Examination Board** has final responsibility for the quality of the assessments (of the placements). The Examination Board can carry out its own investigation to determine whether a placement meets the subject-related and didactic requirements in terms of quality and whether the assessment of the placement meets the relevant requirements. The Examination Board has the authority to reject a placement as insufficient to count towards the final assessment on the grounds of insufficient quality or level. It also has the right to review the assessment.

The **Director of the Programme** has the responsibility that a placement manual is available for the students.

7. Placement manual

A placement manual must be available for every placement listed in Appendix 2 and must at least include:

- criteria for the project
- an application and agreements form
- procedure and criteria for the go/no go decision

- interim evaluation (= go/no go evaluation) form
- requirements for the final report
- guidelines for the oral presentation
- assessment criteria
- assessment forms
- the relative contribution of the items mentioned in 5.2 to the final grade
- time line for the placement

8. Standards for student placements

A placement must enable the student to learn to conduct independent research under supervision on a research question that has been clearly defined in advance. A student on a placement may not carry out simply routine work.

9. Success of the student placement and disputes

If one of the supervisors has (significant) indications that the project will not come to a successful end, he will report this to the coordinator without delay. Disputes between the student and (one or both of) the supervisor(s) should be submitted to the coordinator immediately.

If problems occur in the course of a placement that makes external intervention advisable, the student and the supervisors are required to contact the coordinator who can arrange mediation or additional personal supervision to assist the student. If necessary, the study advisor may be asked to rule on the case.

The VU-Supervisor and coordinator are entitled, after hearing the On-Site Supervisor and the student, to prematurely terminate the placement if, in their view, the student has not followed rules or instructions, has failed to fulfil his obligations, or is otherwise behaving such that the supervisors can not reasonably be required to continue their cooperation with the placement.

10. Duration and extension

The study load of the placement is stated in the AER. A credit equals about 28 hours. All assumptions with regard to the completion of a student placement are made on the basis of a five-day working week. A full week is equivalent to 1.5 credits or 42 hours. This means a 30 credit placement spans a period of 20 weeks, including preparation and reporting. The student and supervisors can make mutual agreements on part-time work only if this accords with the planning of the programme plan (e.g. the student has finished the work before the programmes' 'come back day' or 'final presentation day').

A placement ends:

- at the end of the (agreed) period or
- once the student is no longer enrolled in the designated programme or
- at mutual consent of all parties or
- when the VU supervisor decides to prematurely terminate the placement for reasons given above (see 8. Success of the student placement and disputes).

If a Master's placement is proceeding successfully and more results can be obtained by extending the research, an extension can only be granted within the restrictions concerning the availability for optional subjects found in the examination programme. Such an extension is subject to permission from the Examination Board. Otherwise, credits are not awarded for extra time spent on a student placement. The time allocated for the placement includes the entire process of writing up the report (drafts and final version) and the presentation.

11. Travel and accommodation expenses

Travel or accommodation expenses for placements are generally not reimbursed by the Faculty. An exception is made for placements that include fieldwork and take place outside The Netherlands. Here the rules specified in the 'Regulations on Grants for Fieldwork and Field Trips FALW 2010-2011' are applied.

12. Safety

Students and supervisors are required to comply with the safety policy in operation at the Faculty and/or organization offering the placement. In the event that the placement involves fieldwork, this is governed by the rules laid down in the Faculty policy document 'Regulations for Safety in Fieldwork'.

All students travelling abroad for study purposes must contact the Faculty's International Office. The Faculty does not allow placements or fieldwork in a country or region for which the Dutch Foreign Ministry has issued negative travel advice (code red). In cases where the Foreign Ministry has not issued negative travel advice but has given a warning with regard to specific risks (code orange), the University operates on the assumption that the VU-Supervisor is aware of such warnings. Strictly speaking, it is still possible to carry out a placement in the country in question in such circumstances, but the VU-Supervisor must discuss the risks with the student and serious consideration must be given to the VU-Supervisor's advice. All students departing to code orange destination must sign statements at the Faculty's International Office before departure.

13. Liability

- VU University Amsterdam has liability insurance that covers the University's liability for students during standard work placements, as well as the student's own liability in relation to the organization offering the placement. The real risks associated with a student placement are therefore covered via VU University Amsterdam (although it should be noted that the policy does have a high excess).
- The liability is limited to the student's actions insofar as they fall within the remit of the placement itself. If students wish to insure themselves for liability outside the context of their placement, they are required to take out additional liability insurance on their own behalf. This can take the form of standard personal liability insurance.
- The organization offering the placement is required to accept liability for any injury, accident or harm that befalls the student during, or in connection with his/her presence at the organization, or

in connection with the execution of his/her duties insofar as the injury, accident or harm can be attributed to the organization offering the placement.

- **The University accepts no liability whatsoever for any risks which are not covered by the above-mentioned insurance held by VU University Amsterdam.**

Appendix 1. Phases in placement process – overview

<i>phase</i>	<i>initiator</i>	<i>deadline</i>	<i>who decides</i>	<i>documentation</i>	<i>Outcome and next step</i>
Admission, Step 1	Examination Board identifies examiners	1 September	Examination board	Letters to and list of examiners	
Admission, Step 2 Setting up the placement	Student drafts project, finds VU-Supervisor and on-site supervisor.	See placement manual	Coordinator		If supervisors or project do not meet requirements - the student must find another placement and/or different supervisors
Admission, Step 3 Making agreements	Student makes agreements with the VU-Supervisor and on-site supervisor.	See placement manual	--	Application and Agreements form (in placement manual)	
Admission, Step 4 Application for the placement	Student applies	See placement manual	Coordinator (within ten working days)	1. Application and Agreements form (in placement manual) 2. Short project description	If not satisfactory or complete, the student gets another five working days to rectify. If agreed the student receives a written approval and starts with the placement
Admission, Step 5	Coordinator	Before project starts	--	Administration/ tracking of the placements	
Go/No Go	a) Student hands in evaluation request. ----- b) On-site supervisor hands in interim evaluation	Within 4 (BSc) or 6 (MSc) weeks after the placement has started	VU supervisor (within 5 working days)	1. At least Research proposal 2. Interim evaluation form (in placement manual)	Sufficient, after (small) corrections = "go" and continuing placement. Insufficient = "no go" and termination of placement

<i>phase</i>	<i>initiator</i>	<i>deadline</i>	<i>who decides</i>	<i>documentation</i>	<i>Outcome and next step</i>
Assessment, step 1 Beginning of assessment procedure	Student hands in final version of report to VU-Supervisor	As stipulated in the agreements	VU-Supervisor (within 2 working days)	Check on general requirements <i>Guidelines of the programme on form, length, etc. to be developed</i>	If acceptable – on to the next phase. Otherwise 5 extra working days allowed for 1 revision. If still not acceptable – rejected.
Assessment, step 2 Assessment	VU-Supervisor hands in final version of report to Second assessor On-site supervisor hands in feedback on attitude and execution VU-Supervisor organises audience Student gives oral presentation	As stipulated in the agreements	VU-Supervisor and Second assessor assess separately and set a mark for the final report (within 15 working days) VU-Supervisor sets marks on oral presentation, execution and attitude	1. Final version of report 2. Assessment form for the VU-Supervisor (placement manual) 3. Assessment form for the Second assessor (placement manual) 4. Guidelines and forms for feedback of On-site supervisor and audience (placement manual)	Filled in forms are forwarded to the coordinator
Assessment, step 3 Validation	Coordinator checks for discrepancies	2 working days	Coordinator	Form: Final Assessment of the student placement (Appendix 3) According to rules set out in paragraph 5.2	Either a referral to the examination board, or validation and a final grade Outcome is communicated to assessors and student
Assessment, step 4 finalised	1. Coordinator 2. Student 3. Study secretariat			1. Final assessment form together with the relevant assessment forms. 2. Hands in final report. 3. Registration of final grade.	

Appendix 2. List of all student placements and research projects

Programme	Code and name
B Aarde en Economie	AB_450354 – Bachelorthesis Aarde en Economie
B Aardwetenschappen	AB_450335 – Bachelorthesis Aardwetenschappen AB_450353 – Bachelorthesis Geoarcheologie
B Biologie	AB_470060 - Bachelorstage
B Biomedische Wetenschappen	AB_1070 - Bachelorstage
B Gezondheid en Leven	AB_487039 – Bachelorstage (G&L, 2 majors) AB_487040 – Bachelorstage (G&L, GW major) AB_487041 – Bachelorstage (G&L, BMW major)
B Gezondheidswetenschappen	AB_1071 - Bachelorstage

Programme	Code and name
MSc Biology	<i>Non Research programmes</i> AM_471148 Internship Communication Specialization AM_471156 Internship Education Specialization AM_471147 Internship Societal Specialization <i>Research programmes</i> AM_471151 Internship Brain and Behaviour AM_471152 Internship Cell Biology AM_471150 Internship Ecology AM_1107 Internship Green Life Sciences
MSc Biomedical Sciences	<i>Non Research programmes</i> AM_471145 Internship Communication Specialization AM_471143 Internship Education Specialization AM_471147 Internship Societal Specialization <i>Research programmes</i> AM_471136 Internship Cardiovascular Diseases AM_471137 Internship Immunology AM_471138 Internship Infectious Diseases AM_471139 Internship International Public Health AM_471142 Internship Med. And Behavioural Genomics AM_471140 Internship Psychophysiology
MSc Biomolecular Sciences	AM_471127 Internship I Molecular Cell Biology AM_471128 Internship II Molecular Cell Biology AM_471129 Internship I Biological Chemistry AM_471130 Internship II Biological Chemistry AM_471153 Thesis Based on Literature Study
MSc Ecology	AM_1108 Research Project Environmental Chemistry and Toxicology I AM_nader Research Project Environmental Chemistry and Toxicology II AM_1100 Research Project Ecology and Evolution I AM_nader Research Project Ecology and Evolution II
MSc Environment and Resource Management	AM_468017 Research Project
MSc Earth Sciences and MSc Geosciences of Basins and Lithosphere	AM_1103 Research project Earth Sciences and Economics AM_450202 Research Project Paleoclimatology and Geoecosystems AM_450296 Research Project Archaeometry AM_450295 Research Project Landscape Archaeology AM_450267 Research Project Applied Environmental Geosciences

	AM_450200 Research Project Solid Earth AM_1105 Research Project GBL I AM_1106_ Research Project GBL II
MSc Global Health	AM_1102 Research Project Global Health year 1 AM_nader Research Project Global Health year 2
MSc Health Sciences	AM_471105 Internship Infectious Diseases and Public Health AM_471106 Internship International Public Health AM_471107 Internship Nutrition and Health AM_1109 Internship Health Policy AM_471104 Internship Prevention and Public Health
MSc Hydrology	Master Research Project Hydrology
MSc Lifestyle and Chronic Disorder	AM_471100 Internship LCD AM_471101 First Internship LCD AM_471102 Second Internship LCD
MSc Management, Policy Analysis & Entrepreneurship	AM_471116 Internship I MPA AM_471117 Internship II MPA AM_471124 Internship I MPA Communication AM_471125 Internship II MPA Communication AM_471118 Internship I MPA Management and Entrepreneurship AM_471119 Internship II MPA Management and Entrepreneurship AM_471122 Internship I MPA Policy AM_471123 Internship II MPA Policy AM_471120 Internship I MPA International Public Health AM_471121 Internship II MPA International Public Health
MSc Neurosciences	AM_471108 Internship Neurosciences I AM_471109 Internship Neurosciences II

Appendix 3
Final Assessment of the student placement

This document is part of the Student Placement (Internship) and Research Project Regulations.

Administrative details of the student

Name		Student No.	
e-mail		Tel.no.	

Administrative details of the placement

MSc /BSc programme		Specialisation	
Code and EC's			

Assessors

The assessors must meet the requirements as set in the Student Placement (Internship) and Research Project Regulations

Name of the VU-Supervisor;.....

Name of the Second assessor:

Final Grade

Report VU supervisor	mark in number (1-10)= (a)
Report Second assessor	mark in number (1-10)= (b)
Report Final	Average of (a) and (b)=
Oral Presentation	mark in number (1-10)=
Execution	mark in number (1-10)=
Attitude	Pass / Fail* * please indicate

Final Grade in number (<i>in whole or half numbers</i>)	
Final Grade in writing:	

Signature coordinator	
Date	

The study secretariat registers the final grade when the complete assessment dossier has been handed in (digitally). This dossier includes:

- The final assessment form with the final grade and the relevant assessment forms (must be delivered by coordinator)
- The final report (must be delivered by student)

The final assessment form and the assessment forms as filled out by the assessors need to be signed, scanned and submitted to the study secretariat.



Placement Manual for Internships in the MSc Biomolecular Sciences programme, VU University Amsterdam 2012-2013

Master coordinator:

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Placement coordinators of each specialization:

Code	Internship	Name	Phone no.	E-mail
AM_471127	Molecular Cell Biology, 1st	Dr. H.S. van Walraven	020-5987165	h.s.van.walraven@vu.nl
AM_471128	Molecular Cell Biology, 2nd	Dr. H.S. van Walraven	020-5987165	h.s.van.walraven@vu.nl
AM_471129	Biological Chemistry, 1 st	Dr. H.S. van Walraven	020-5987165	h.s.van.walraven@vu.nl
AM_471130	Biological Chemistry, 2 nd	Dr. H.S. van Walraven	020-5987165	h.s.van.walraven@vu.nl

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1. INTRODUCTION

General information

Internships are important parts of the Master's programme because they involve many different aspects, such as theoretical preparation, practical execution, literature survey, report writing, oral presentation, and participation in the scientific activities of a research group. This Placement Manual describes the process of completing the student internship from the admission through the actual execution with its supervision to the final stage (assessment and grading) in consecutive order. The various stages of the process are supported by forms which are supplied in de Appendices. This Placement Manual is based upon the *Student Placement (Internship) and Research Project Regulations 2012* of the Faculty of Earth and Life Sciences (FALW) and will be valid for all traineeships starting from February 1st. All internships of students taking a Master's programme in the School of Health and Life Sciences take place under the final responsibility of the Faculty of Earth and Life Sciences.

This placement manual covers both internal and external internships of the MSc Biomolecular Sciences programme. An internship is described as "internal" when it is organized by a research department within VU University (including ACTA, Dept. of Dentistry) or VU medical centre, or by a supervisor with affiliations to VU/VUmc and appointed as a lecturer there (pending formation of the Amsterdam faculty of Science (AFS), "internal" is expected to include AFS staff). The description "external" is used to refer to all other internships in the Netherlands or abroad which take place in companies, research institutes, universities, hospitals, laboratories etc.

Students and supervisors should read these guidelines and the "*Student Placement and Research Project Regulations*" carefully in order to avoid unpleasant surprises during the progress of the internship.

Aims of the master's internship

The aim of a master's internship is to train students to conduct scientific research in a typical "on the job" situation. The student:

- is able to independently find scientific information and knows how to analyse, summarize and critically evaluate this for the benefit of his or her own research question;
- has the ability to use the principles from different disciplines (such as Biochemistry, Molecular Cell Biology, Biophysics) in the design of research plans, the execution of research, and the analysis of the results;
- has command of the relevant research techniques and laboratory procedures, including safety procedures, and the ability to solve emerging problems;
- has command of the use of computer software relevant for the field;
- is able to document and communicate experimental results in a lab journal, written report and oral presentation;
- can analyse and evaluate planning, execution and results of research independently and critically;
- is able to collaborate with researchers of various disciplines;
- can contribute to scientific discussions about plans, results and consequences of research;
- can reflect on ethical aspects of research and applications of research;
- can evaluate his or her own functioning in the internship, both by reflection and in discussions with others;
- has obtained a good impression of a potential future field of career.

It should be emphasized here that scientific achievements of the research group housing the internship are not the primary aims of an internship. Rather, the development of the student's attitude, skills, and acquaintance with scientific research take the central position.

Conditions to be met before starting an internship

The student is enrolled in the master's programme Biomolecular Sciences and has earned at least 18 EC from the programme. Depending on the internship place additional requirements may be set (like vaccinations, followed courses, previous experience, confidentiality agreements). In order to prove the conditions for admission, the student must hand in an overview of the results of the master courses at the latest two weeks before start of the internship, together with the signed Research Proposal (Appendix 2) and the signed Application and Agreement form (Appendix 3).

Credits and duration of internships

The minimum study load of an internship is 24 EC (16 weeks = 4 months), the maximum is 36 EC (24 weeks = 6 months).

2. PEOPLE INVOLVED

Student

It is the student's responsibility to find a place and theme for an internship, an on-site and a VU supervisor (= on-site supervisor for an internal internship). The student should contact the VU supervisor for a Go/No Go evaluation within six weeks after the start of the internship. It is the student's responsibility to contact the VU supervisor at decisive moments (e.g. changes in research plan, problems with supervision, analysis, etc.).

Master coordinator

The master coordinator can support students in their search for an internship and supervisors. The master coordinator controls that the internships are of a suitable level and length, evaluates the quality of the supervision on the basis of the project description (Research Proposal, Appendix 2), and approves the internship (Application and Agreement form, Appendix 3). The master coordinator also appoints the second assessor. The master coordinator calculates the final internship grade, based on the assessments of the VU supervisor and the second assessor (see Appendix 7). The master coordinator hands in the final assessments plus the assessments of the VU supervisor and the second assessor to the programme secretariat.

VU supervisor

The VU supervisor is a staff member with a PhD degree having a position in higher education or research at VU University/VUMC for at least two years and is appointed as examiner by the Examination Board Biomolecular Sciences. The VU supervisor has the final responsibility for the supervision of the student during the entire project. The VU supervisor will be in contact with the student during decisive moments. At the start of the internship the VU supervisor discusses the research question, the methodology and the expected outcome of the research proposal with the student, and, if the internship is external, with the on-site supervisor. At the latest six weeks after the start of the internship the VU supervisor is responsible for the interim Go/No go evaluation. At the end, the VU supervisor comments on draft versions of the final report (in general one draft version, maximum two). The VU supervisor assesses the final report, as well as the oral presentation (see Appendix 5).

On-site supervisor

In all internships the on-site supervisor of the student will be a staff member of the institute offering the internship with relevant knowledge of the internship subject and holding a PhD degree and a position in higher education or research. For Internal internships (supervisor from VU/VUmc), the on-site supervisor acts as the VU supervisor. The on-site supervisor provides guidance for an average of at least one hour per week. In the case of an external internship, the on-site supervisor advises the VU supervisor on the assessment of the internship.

Daily supervisor

The on-site supervisor may delegate the daily instructions to the student in the laboratory to a daily supervisor who can be a PhD student, a post doc or a technician.

Second assessor

The second assessor has a PhD degree, holds a position in higher education or research at VU University and is appointed as examiner by the Examination Board Biomolecular Sciences. He/she has not been involved in the internship and assesses the final report independently (see Appendix 6).

Examination board

The Examination Board appoints the second assessor on nomination of the master coordinator. It appoints a third assessor if necessary (see later on). The examination board is informed in case of a “Terminate” or “At Risk” judgment at the Go/No Go evaluation and in case the internship is delayed for a period of longer than two months.

3. PROCEDURES

Finding an academic internship

It is the student's responsibility to arrange an internship and supervisors. The first research internship is strongly advised to take place internally, the second internship can take place externally. The first project can only start after earning 18 EC from the programme and the second after full completion of the first. Making enquiries for finding an internship place can be done earlier since procedures take time (at least a month for an internship in the Netherlands and about 6 months for an internship abroad).

Important: *If you get in touch with a possible provider of an internship, it is crucial to come to clear arrangements. Define the aim of your internship, the time to spend (16 – 24 weeks, be sure to reserve enough time for writing) and the final goal (a written report in English and an oral presentation). Communicate clearly to the provider that the plan has to be approved by the VU. This can be done before the final agreement forms are signed.*

Internship abroad

Projects at universities or research institutes outside the Netherlands can be accepted provided they are of sufficient academic quality and adequate on-site supervision is guaranteed. For internships abroad many arrangements have to be made like visa, housing, vaccination, funding and fees. You always should visit the FALW International Office (international.falw@vu.nl), also for questions concerning the above mentioned practical issues. Internships abroad definitely can be a valuable experience and a good contribution to your CV, but keep in mind that they also involve certain risks. They generally demand a substantial financial investment and once you have left the Netherlands things can hardly be changed anymore. It is therefore important to carefully and timely prepare your research project and internship.

The faculty does not allow student internships or fieldwork in a region for which the Dutch Foreign Ministry has issued negative travel advice (code red). In cases where the Foreign Ministry has not issued negative travel advice, but has given a warning with regard to specific risks (code orange), the university operates on the assumption that the supervising staff is aware of such warnings. Strictly speaking, it could be still possible to carry out an internship in the region in question under such circumstances, but the staff must discuss the risks with the students and serious consideration must be given to them. All students departing to code orange destinations have to sign statements at the Faculty's International Office before departure.

Quality requirements

The MSc Biomolecular Sciences master's internship has to meet the following criteria:

- The student participates in an experimental laboratory study (computer based in the field of Bioinformatics and Systems Biology).
- The student collects qualitative or quantitative data. The amount of data as well as the quality of data satisfies scientific standards.
- The internship results in a written report in English, which shows how the student has used the theoretical/conceptual framework and the methodological approach to answer his or her research question. If the internship organization requests a piece of work in Dutch, the student additionally can write a fact sheet in Dutch; however, this will not be part of the assessment.
- The student builds on previous work in the area of research, by using scientific papers published in the field of research.

- The internship organization offers sufficient workspace. The student regularly participates in department meetings, workshops, etc.
- The student should be able to complete all constituents of the internship (reading, learning of techniques, data collection, analysis, writing, etc) within the time period agreed in advance in the Application and Agreements form (see Appendix 3). When the research leads to a publication in a scientific journal the time spent writing the manuscript will not be regarded as a part of the internship duration.
- The subject of an internship should be related to the student's master specialization and should satisfy the quality requirements for research in the field of that specific specialization.
- An internship must enable the student to learn to conduct independent research under supervision and on a research question that has been clearly defined in advance. A student on an internship may not be utilised to carry out simply routine work for the group.

Research Proposal and Application and Agreements form

A research proposal is generally agreed upon by the student and a researcher of the internship organization (the on-site supervisor in case of external internships and the VU supervisor in case of internal internships). The Research Proposal (Appendix 2) and the Application and Agreement form (Appendix 3) signed by the supervisor(s) (VU supervisor + on-site supervisor in the case of an external internship) have to be handed in by the student to the master coordinator at least two weeks before the start of the internship. The coordinator will assess the scientific quality and feasibility of the proposal and has to approve and sign the proposal and the form as well.

Go/No Go evaluation

Within six weeks after the start of the internship the VU supervisor will carry out a Go/No Go evaluation. The aim of this interim evaluation is to decide whether the project and the student both have enough potential to continue (Go) or not (No Go). This evaluation is based on:

- Oral or written presentation by the student, including a final research plan, methodology and results obtained.
- Self- evaluation of the student about the progress of the project, and the scientific environment (guidance, cooperation, facilities).
- Information from the on-site supervisor at external internships.

The Go/No Go evaluation is carried out under responsibility of the VU supervisor in consultation with the on-site supervisor. The student has to apply for the evaluation of the internship within six weeks after the start of the internship and either makes an appointment for the evaluation with on-site and VU supervisor or sends the written material to the VU supervisor and on-site supervisor within 5 weeks after the onset of the internship. The VU supervisor will ask the on-site supervisor for his or her judgment on the student's performance for the time the student has been working on the internship. The outcome of the evaluation will be recorded on a Go/No Go form (see Appendix 4). The form is handed in to the master coordinator. If it is decided that the project and/or the student does not have enough potential for a successful continuation, the outcome of the evaluation will be a "No Go" and the internship will be terminated. If there are doubts about the quality or attitude of the student or the project, the form scores "At risk" and a conditional Go will be formulated and the conditions will be re-evaluated after a short period of time that is agreed on (a maximum of 1 month). If it is decided that the project and the student do have enough potential for a successful continuation, the outcome of the evaluation will be a "Go". This means the internship can be continued; it does not guarantee that the internship as a whole will be successful.

When the outcome of the Go/No Go evaluation is 'At risk', or 'Terminate', the Examination Board will be informed by the master coordinator.

Courtesy privileges

Certain organizations require to sign a placement agreement or a courtesy privileges form. Usually, the master coordinator signs these on behalf of VU University Amsterdam.

Ethical aspects, additional courses and privacy

Scientific research involving vertebrates usually needs legislation. Approval of the Medical Ethical Committee takes a long time and must be obtained before the start of the internship. In case the internship will be part of a current project, the project usually already has been approved by the Medical Ethical Committee. Be sure to ask the on-site supervisor about this.

Specific additional courses that have to be taken to carry out (parts of) the research project can only be considered as part of the curriculum after approval of the Examination Board, for example working with radioactivity or radiation. Apply for approval before you start your internship!

In some cases the internship organization requires a confidentiality statement. Usually this is needed in case of admission to personal information of possible experimental subjects (e.g. name, addresses, date of birth).

Traveling and accommodation expenses, and financial compensation for an internship

Traveling or accommodation expenses made by a student for an internship are not reimbursed by the VU and usually not by other internship places. Universities or university hospitals usually do not provide financial compensation for an internship, but companies, some institutes and some internship places abroad can give financial compensation varying in amount.

For information on grants for internships abroad contact the International Office FALW.

4. COMPLETION

Oral presentation

At the end of the internship the student gives a presentation about his or her findings to an academic audience. This presentation is an obligatory part of the internship. This presentation will be held at VU University Amsterdam, unless the VU supervisor agrees otherwise and visits the external internship place. The presentation is assessed by the VU supervisor and he/she may be advised by other colleagues present (on-site supervisor, VU lecturers, PhD's). If the student fails the oral presentation he or she can request for one re-presentation. The VU supervisor will decide on the date.

Final report

The final result must be a report written in English (see also guidelines below). In general there is one correction round (maximally two) before the final version is handed in. The final version of the report must be submitted to the VU supervisor before the end of the agreed project period. The VU supervisor can refuse to assess the report if it does not meet the requirements as described (see Guidelines to the report on the next page). If the report meets the requirements, the VU supervisor sends it to the second assessor. The VU supervisor (taking into account the advice of the on-site supervisor) and the second assessor reviews the report as soon as possible, but at the latest within the period that is set in the AER (Academic and Examination Regulations) for determining the results of the written interim examinations (fifteen working days). If the student has failed the assessment, he/she can request for one re-submission of the end product within ten working days after registration of the final judgment. The assessors will decide on the time the student gets to hand in an improved version. When the final report is considered as insufficient after a re-submission, the student will have to redo the internship completely; i.e. do a new study with different supervisor(s) and assessors.

Plagiarism

A report should be written individually. Plagiarism is defined as fraud. Plagiarism is also defined as the action of taking someone else's work or idea and passing it off as one's own, either intentionally or unintentionally, without an appropriate acknowledgement of the sources used or a clear indication of which part is one's own work, and which part is the work of another. If a student is found to have committed plagiarism, it will be reported to the examination board. The punishment for plagiarism can be disqualification of the assessment of the project and the obligation to start a new internship. The examination board may also decide to take measures such as (temporary) exclusion from further participation in examination.

Copyright

The student (the creator of the report) is the copyright owner. Before the start of the internship the student, the on-site supervisor and the VU supervisor agree on how and by whom possible publications based on the research may be accomplished.

Final assessment

In the final assessment, the VU supervisor assesses four different aspects of the internship (see Appendix 5):

- The attitude and professional development
- the execution of the research
- the final report
- the oral presentation

The mentioned aspects will be graded from 1-10. The final report counts for 35% of the final grade, the oral presentation for 15%, the execution of the research for 30% and attitude and professional development for 20%. The second assessor provides an assessment of the final report only (see Appendix 6).

If marks for each item given by the VU supervisor and the second assessor are 6 or higher, the internship is regarded as sufficient. The master coordinator calculates the final grade from the marks given by both assessors. Together with other administrative details, it is documented on the final assessment form (see Appendix 7). Assessment criteria are defined in Appendix 8.

A third assessor will be appointed by the Examination Board to assess the final report when i) the difference between the mark of the VU supervisor and the second assessor is equal to or more than 2 (on a scale 1-10) and ii) one of the assessors judges the report as insufficient. In case a third assessor is appointed because of a large difference in grading between the two assessors, the final grade will be calculated as an average from all three results. In case the report was judged insufficient by one of the assessors, the third assessor will determine whether the report is sufficient or not. If sufficient, the final grade will be the average of the highest two grades. If insufficient, the final judgment of the report will be insufficient and the student has failed the assessment. When the student is late (after the agreed date) with the submission of the final report, the VU supervisor and second assessor can decide to register a final mark based on a draft version.

Administrative procedure

The programme secretariat registers the internship after handing in the Application and Agreements form (Appendix 3).

The programme secretariat registers the final grade when:

- A) The three assessment forms are filled out completely (Appendices 5, 6 and 7) and are submitted to the programme secretariat by the master coordinator.
- B) The final report is uploaded digitally by the student to the programme secretariat FALW.

The final assessment (Appendix 5) is discussed with the student by the VU supervisor (and the on-site supervisor in the case of an external internship) and a copy is given to the student. The master coordinator informs the student about the result of the second assessor and the final grade and delivers a copy of Appendix 6 and 7.

In case the final report contains information that should remain confidential at the time of the final assessment the student either delivers to the programme secretariat a hard copy to be stored in a closed envelope or a print of the first page and a note that the full report can be obtained from the VU supervisor.

Complaints and appeals

If problems occur in the course of an internship which makes external intervention advisable, the student and on-site supervisor are required to contact the master coordinator. Sometimes the examination board can make a decision. If necessary, mediation may be arranged.

Evaluation

VU University Amsterdam and the master coordinator would very much like to know how students, the internship organizations and the supervisors experience the master's internships. Students are requested to fill out the evaluation form (see Blackboard) and hand this in to the programme secretariat. We also like to know how internship organizations experience the internships and whether there is room for improvement and whether they would like to take VU internship students in the future. Feedback and suggestions can be sent to the master coordinator: h.s.van.walraven@vu.nl

Guidelines to the report

The report consists of the following elements (see Appendix 8 for assessment criteria):

- 1) Title page
- 2) Table of contents
- 3) Abstract
- 4) Introduction
- 5) Materials and Methods
- 6) Results
- 7) Discussion
- 8) Acknowledgements
- 9) References
- 10) Appendices (if applicable)

1) Title page

The title page contains:

- A clear and instructive title of the project
- Author and date of publication
- Student number of the author
- Name of internship organization
- Names and office addresses of the responsible supervisors
- Name of the programme and specialization
- The number of EC (credits)

2) Table of contents

The table presents the page numbers of all main and subsections of the report.

3) Abstract

The abstract contains at least the context, the research question, the methodology used and it summarizes the results. It ends with the answer on the research question and the conclusion. The typical length is between 150 and 300 words.

4) Introduction

The introduction describes the conceptual framework and the theoretical background of the subject, the current state of knowledge, the problem(s) involved/lacking information, the aim of the research, and clearly formulated and structured research question(s).

Important: *loosely formulated questions always produce bad science! Bear in mind that the reader does not know as much about the subject as the writer does. A good introduction should give the impression of: "Of course this has to be investigated; indeed this subject ought to be studied!"*

In many cases the introduction is concluded with a short explanation of the experimental design and an indication of the type of results that can be expected under the hypothesis. A good introduction provides the reader with all information that is required to understand the research question, the project, the presented data and discussion of the results.

5) Materials and Methods

In the Materials and Methods section, the gap is closed between theory and the collected data. Organizing this part of the manuscript requires a lot of attention. The goal of the

methods section is to make the study replicable and it should thus be written in such a way that experiments can be repeated by any person. The section always contains a paragraph “Experimental Design”, describing precisely how the tests or observations were performed, how many replicates were used, how treatments were assigned to experimental units, etc. Avoid a strict chronological description of the experiments and use headlines in favour of a line-up of methods used in several experiments, e.g. “Model organisms”, “Chemical analysis”, “Classification”, “Statistics”, etc. In the statistical section, the tests are justified and software packages are specified. It is allowed to refer to manuals and articles in which the research techniques are described but always give a short summary. When using equipment, the type of instrument and the manufacturer is mentioned.

6) Results

In the Results, the findings of the study performed are described. Present important results in figures or tables and use the main text to guide the reader through your results. Explain for each table or figure what the (experimental) question is, describe and interpret the results, and sum up the message from each figure/table in one final sentence. Present the facts objectively and written in full sentences. Tables have a clear heading (above the table) which enables understanding of the table without knowing the body of the text. Figures have a legend (below the figure) that is understandable without the body of the text. The legend starts with a title, providing information on the experiment presented. Explain in the legend how to read the figure (explanation of line colour, symbols etc.). Next to the axes of the figures a clear variable name is given with the unit of the variable between brackets.

7) Discussion

The purpose of this chapter is to put the results in a broader perspective within the existing scientific literature. This is why the discussion contains many references. The discussion usually starts with a short repetition of the research questions and the answers your results are giving. These answers are then evaluated in a more profound (and different) context. The similarities and differences between your own results and results from other studies should be described and explained. In a more general context you should address questions as: What have your results added to the general understanding of the problem? Do they initiate new approaches or theoretical implications? Do your results shed light on other, related kinds of questions? What kind of follow-up research is required (simply more research is the worst answer)? How can that be done? Are there recommendations for societal implementation? Do not bring down your work with an extensive discussion of details that could have been better. Only discuss those things that really would have changed your results and conclusions and explain how. Finish off with a take-home message, usually in a separate final paragraph, what do you want the reader to remember from your work: a firm conclusion, the announcement of the next step to take, a recommendation, a prediction, a theoretical implication, etc.

In conclusion the discussion should show whether you are capable of scientific thinking, seeing connections, putting everything in a broader perspective and looking critically at the work of others.

Important: the discussion should not be merely restricted to a short essay about why the methods did not work as anticipated!

8) Acknowledgements

Here you can express your gratitude towards those that have contributed to or supported your work.

9) References

Only include those publications that you have thoroughly read yourself. All citations in the text are included in the reference list and vice versa. All references include the full title of the article, all authors and their initials, the year of publication, the name of the journal, the journal volume (and issue) and the page numbers. For book chapters, apart from the author names and title of the chapter, you list the title of the book, the name of the editor, the year of publication, the publisher, the city in which it was published and the page numbers. You can choose your own formatting style, but be consistent throughout. Consult a well-known journal in your field of research. In the text you cite only the surname(s) of the author(s) and the year of publication. Use (in the text only) "*et al.*" if the article has more than two authors.

10) Appendices

Usually the supervisor appreciates to have the original data available, e.g. a print of the Excel-files, etc. This can be included in the report as an appendix, but a digital version (i.e. the original Excel-file) is usually also highly appreciated. In this case, make sure that your Excel-files have a clear and logical structure, with clear descriptions (including units) of what is shown in each column or row.

Appendix 1. Requirements for the start of internships master Biomolecular Sciences

First internship:

The student has earned 18 EC of the following courses before the start of the first internship:

Protein Science

Genomes and Gene Expression

- Specialization Molecular Cell Biology:

Cell Structures and Functions

Evolving Networks

- Specialization Chemical Biology:

Drug-induced Stress and Cellular Responses

Signal Transduction in Health and Disease

Technical modules

Second internship:

Same as for the first internship, in addition the student must have finished the first internship as well.

Appendix 2. Format for Research Proposal Internship MSc Biomolecular Sciences

1. Student info	<ul style="list-style-type: none"> Name, student number, address, phone and email address, specialization 	
2. Name and address of institute/organization of internship	<ul style="list-style-type: none"> Name of organization, contact details and homepage 	
3. Supervisors	<ul style="list-style-type: none"> Information concerning the VU supervisor: name, department, phone number and e-mail address, titles (PhD), position Information concerning the on-site supervisor, if other than VU supervisor: name, phone number and e-mail address, titles (PhD), position Name and function of the daily supervisor, if other than the on-site supervisor 	
Short description of the research proposal		
4. Title of internship	<ul style="list-style-type: none"> The title should be informative and relevant for the research project proposed 	
5. Scientific background of the research	<ul style="list-style-type: none"> Conceptual framework and theoretical background (relevant existing knowledge/literature; relevant theories/concepts) Description of the problem 	
6. Research question/aim	<ul style="list-style-type: none"> Clear, well-structured and academic research questions/hypotheses Sub questions (if applicable) 	
7. Research design and methods	<ul style="list-style-type: none"> Description of design, measurements and analyses. What is the general method to find an answer to your research questions? Techniques to be used. 	
8. Competences needed (if applicable)	<ul style="list-style-type: none"> Do you need to learn specific techniques/research tools? If so, which? Do you have to take specific courses to be able to carry out the research? If so, which? 	
9. Study load and Time schedule	<ul style="list-style-type: none"> Give length of internship in EC 	
10. Internship facilities	<ul style="list-style-type: none"> Does the organization have a working place, a computer and other facilities (lab, field station, materials, etc) available? YES/NO 	
11. Literature list	<ul style="list-style-type: none"> Most relevant literature 	
12. Further information	<ul style="list-style-type: none"> Any other relevant information concerning the internship (e.g. confidentiality, vaccinations etc.) 	
Signature of on-site supervisor (if other than VU supervisor)	Signature of VU supervisor	Signature of master or placement coordinator
<p>BEWARE: Each research proposal has to be signed by the on-site supervisor, the VU supervisor as well as the master coordinator of specialization before the start of the internship</p>		

Appendix 3. Application and Agreements form Internship Master Biomolecular Sciences



Student details

Name: Student no:.....
 Address:
 Postal code: Town/city:.....
 E-mail: Tel. or Mobile:

Internship details

Start date: .../.../..... End date: .../.../..... Weeks (16-24): EC (24-36*):

** total credits internships : max 66 credits (see Academic and Examination Regulations Master's)*

First/second internship. If second, the number of EC for the first internship was:

Hours to be worked: full-time / part-time. If part-time: % per week orhours per week

Interruptions to the student internship (if relevant): from .../.../..... to .../.../.....

Please note: If an internship is interrupted for holidays, to attend courses etc., this time does not count as part of the internship and must therefore be compensated.

Name institute/organization:
 Address of institute/organization:
 Department:
 The student will be working in building/room:.....

Title of internship:

The internship is: part of the specialization Course code:

Name of VU supervisor: Tel.: E mail:.....
 Name of on-site supervisor**:..... Tel.: Email:.....
*** if other than VU supervisor*

Name of daily supervisor (if other than on-site supervisor): Position:

Final oral presentation after weeks (English)
 Number of drafts that will precede the final report: (in general no more than two)

Are there any additional agreements for the internship (e.g. additional forms, vaccinations, confidentiality etc?) If so, please list them here:

- Are the following forms attached to this Application and Agreements form? (Please tick the boxes):
- Research proposal, signed by the on-site supervisor, the VU supervisor and the master/placement coordinator
 - VU-net overview indicating results on master courses followed

The on-site supervisor and the VU supervisor together are responsible for the student's internship.
 The on-site supervisor agrees to spend at least a mean of one hour a week with the student. If not the on-site supervisor the VU supervisor is consulted at decisive moments (assessment of research proposal, Go/No Go-evaluation, changes of the project, drafts of measurement instruments, feedback on draft article, oral presentation). This can be the same person.

The undersigned agree to the conditions and agreements stated above and to the enclosed research proposal

Name and signature of VU supervisor
 Name and signature of on-site supervisor
 (if other than VU supervisor)
 Name and Signature of student

Final approval by the master coordinator	
Name:	Signature:
Date:	



**Appendix 4. Go/No Go form
 Internship Progress evaluation (max 6 weeks after start)**

Student details	
Name:	Student no:.....
Address:	
Postal code:	Town/city:.....
E-mail:	
Tel. or Mobile:	

Internship details
Name institute/organization:
Address of institute/organization:
Department:
Title of internship:
Name of VU supervisor: Tel.: E mail:.....
Name of on-site supervisor*:..... Tel.: Email:.....
<i>* if other than VU supervisor</i>

Attitude	Assessment by VU supervisor (in consultation with on-site supervisor) See placement manual for criteria Grading: insufficient (I); sufficient (S); good; (G) excellent (E), or not applicable (NA)
Social skills and responsiveness to feedback	
Motivation and scientific curiosity	
Cooperation	
Ownership of project during internship	
Initiative	
Independence	

Execution	Assessment by VU supervisor (in consultation with on-site supervisor)
Work pace and planning	
Practical research skills	
English (writing) skills	
Progress of project	
Safety and accuracy	

Student experience	Assessment by student
Supervision	
Subject internship	
Working place	

<i>Assessment in words and agreement/remarks for the remaining internship period:</i>

Outcome of Go/No Go evaluation (please circle): Continue/ At Risk/ Terminate

Name VU supervisor: Signature

Date .../.../.....

Appendix 5. Assessment form
Internship Master Biomolecular Sciences



Part 1 VU supervisor

This assessment form is to be submitted to the master coordinator and has to be completed in full, signed and bearing the stamp from the department/institute.

Student details

Name: Student no:.....
 Address:
 Postal code: Town/city:.....
 E-mail: Tel. or Mobile:

Internship details

Title of internship:
 Specialization: Number of ECTS (check Applications and Agreements form!)
 Name of VU supervisor: Tel.: E mail:.....
 Department:
 Name of on-site supervisor*:..... Tel.: Email:.....
** if other than VU supervisor*

Assessment

The checklist below is used for the final assessment that leads to the final grade; see the criteria for assessment in the placement manual. All items have to be marked using 4 levels: insufficient (I); sufficient (S); good (G); excellent (E), and the “overall grades” need to be graded from 1 tot 10. *For the parts concerning attitude and professional development, execution and report the on-site supervisor is consulted and also for the final presentation if this was held “on-site” and the VU supervisor was present.*

Attitude and Professional development		
Motivation and scientific curiosity		Overall grade for Attitude and Professional Development (1-10)
Initiative and creativity		
Independence		
Ownership of project during internship		
Development of insight		
Cooperation		
Responsiveness to feedback		
<i>Comments on Attitude and professional development</i>		

Execution		
Work pace and planning		Overall grade for Execution (1-10)
Practical research skills		
Safety and accuracy		
Quality of labjournal		

<i>Comments on Execution</i>	
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Report		
Problem and context analysis (setting out framework, background –literature, formulating research problem)		Overall grade for Report (1-10)
Methods used, design and choice of variables		
Data collection, processing and presentation		
Discussion (structure of argument, conclusions, link to research problem, context with literature)		
Summary		
Readability and use of English language		
Layout		
<i>Comments on Report/Article</i>		

Oral Presentation		
Presentation skills: narrative technique, use of media, time management		Overall grade for Oral presentation (1-10)
Scientific content , structure, build up, thread of argument, clarity of conclusion		
Discussion and ability to deal with questions		
<i>Comments on Oral Presentation</i>		

<i>Assessment in words (e.g. strengths, points for improvement)</i>	
<i>Name VU supervisor</i>	<i>Signature and stamp</i>
<i>Date</i>	

**Appendix 6. Assessment form
Internship Master Biomolecular Sciences**



Part 2 Second assessor

This assessment form is to be submitted to the master coordinator and has to be completed in full, signed and bearing the stamp from the department/institute.

Student details	
Name:	Student no:.....
Address:	
Postal code:	Town/city:.....
E-mail:	
Tel. or Mobile:	

Internship details	
Title of internship:	
Specialization:	Number of ECTS (check Applications and Agreements form!)
Name of second assessor:	Tel.: E mail:.....
Department:	
Name of on-site supervisor*.....	Tel.: Email:.....
<i>* if other than VU supervisor</i>	

Assessment

The checklist below is used for the final assessment that leads to the final grade; see the criteria for assessment in the placement manual. All items have to be marked using 4 levels: insufficient (I); sufficient (S); good (G); excellent (E), and all aspects need to be graded from 1 tot 10. In order to obtain a grade of 6 or higher, all elements should at least be 'sufficient'.

Report		Overall grade for Report/article (1-10)
Problem and context analysis (setting out framework, background –literature- . formulating research problem		
Methods used, design and choice of variables		
Data collection, processing and presentation		
Discussion (structure of argument, conclusions, link to research problem, context with literature)		
Summary		
Readability and use of English language		
Layout		
<i>Comments on Report/Article</i>		

Assessment in words (e.g. strengths, points for improvement)

<i>Name Second assessor</i>	<i>Signature and stamp</i>
<i>Date</i>	

Appendix 7. Final Assessment form

This document is part of the Student Placement (Internship) and Research Project Regulations.



Administrative details of the student

Name		Student no.	
e-mail		Phone no.	
MSc programme	Biomolecular Sciences	Specialization	
Course code		EC	

Assessors

The assessors must meet the requirements as set in the placement manual

Name of the VU supervisor:

Name of the Second assessor:

Final Grade

Report VU supervisor	mark in number (1-10)= (a)
Report Second assessor	mark in number (1-10)= (b)
Report Final (35 %)	Average of (a) and (b)=
Oral Presentation (15 %)	mark in number (1-10)=
Execution (30%)	mark in number (1-10)=
Attitude and Professional development (20%)	mark in number (1-10)=

Final Grade in number (<i>in whole or half numbers</i>):	
Final Grade in writing:	

Name master coordinator	Signature	date

All parts (Report Final, Oral Presentation, Execution, Attitude and Professional development) should be marked 5.5 or higher in order to pass an internship with a final grade of 6.0 or higher. Final grades round up to "halves" and grades between 5.0 and 6.0 are not given.

The programme secretariat registers the final grade when all files have been handed in digitally (studiesecretariaat.falw@vu.nl). This includes:

- This form with the final grade and the relevant assessment forms (by the master coordinator; all signed and scanned)
- The final report (by the student), if confidential report/article in hard copy or fist page printed + location of the full report/article (VU supervisor)

Appendix 8. Guidelines and examples for assessment criteria of the student internship MSc Biomolecular Sciences

Aspect Attitude and Professional Development

< 5.5 (Insufficient)	5.5 – 6.9 (Sufficient)	7.0 – 8.4 (Good)	8.5 – 10 (Excellent)
Motivation and scientific curiosity			
Does the scientific research because it is requested, cuts corners and is often busy with activities not related to the project. Is easily distracted from main task. Shows little interest in carrying out the research. Time spent to research is hardly sufficient.	Is clearly interested in scientific research and considers it an essential component for future employment. Is committed to the subject. Sees the conducting of scientific research as a necessity for finishing the study programme.	Works hard and sees scientific research as an essential component of his/her education. Is eager to show that he/she is committed to the field and is a source of great enthusiasm. Shows involvement as is demonstrated by an eagerness and wants to contribute to improvements in Biomolecular Science.	Shows exceptional interest in scientific research. Works hard all the time. Indicates willingness to thrive on getting a publication in a reputed journal. Demonstrates a passion for increasing knowledge. Uses this knowledge and shares it. Is able to motivate the people around him/her (incl. supervisors).
Initiative and creativity			
Student is indecisive and has difficulties to find his/her own way. Is reluctant to changes and does not take initiatives, e.g. based on own literature study.	Student has some own suggestions but often waits for the directions of the supervisor.	Student takes initiative to perform the research and is able to change plans when necessary. Decides what is needed to do in cooperation with the supervisor.	Student is autonomous and decisive, but keeps supervisor well informed. Takes initiatives and is looking for opportunities to learn and to develop.
Independence			
Student must be firmly guided by the supervisor, barely sees own weak points.	Student works rather independently, makes schemes, uses proper time planning, and generally asks advice when feeling insecure.	Student mostly works independently and plans well. Is capable of reflecting on own activities.	Student works independently, has good and realistic planning, and reflects on own activities, work processes and skills in an excellent way.
Ownership of project during internship			
Student entirely relies on input from supervisor, acts as some sort of research assistant.	Student shares the project and is happy to receive guidance.	Student works on "his/her" project. Obstacles are discussed with own contributions based on own observations or literature data.	Student is the driving force behind the project. The supervisor is merely needed to help making decisions and to give advice.
Development of insight			
Student has almost no idea whatsoever the project is about.	Student has limited insight in the embedding of the project in the group and in the research field. Knowledge of why the questions are tackled and why in such a way is present.	The student has good insight in the embedding of the project in the group and in the research field and knows what related research is conducted. Interconnections with other research are clear.	The student has excellent overview of existing knowledge relevant for the project, and a clear understanding of the research question and its novel aspects. Good knowledge of generally used experimental techniques and their limitations.
Cooperation			
Prefers to stay separate	Works together with others.	Student is cooperative and	Works very well with others

and has trouble working with colleagues. Prefers to go his/her way even when problems occur.	Offers limited sharing of results/experiences.	quickly learns to take a position in the group.	and often takes the initiative.
Responsiveness to feedback			
Does not listen to advice or uses advice very selectively. Reacts positively to criticism and feedback but seems unable to modify his/her behaviour accordingly.	Makes use of most advice, feedback, and criticism as he/she progresses. Feedback often initiative of the advisor.	Asks for advice and stimulates others to comment on his/her work. Knows how to incorporate comments into his/her research and behaviour. Regularly shares and clarifies acquired results.	Asks supervisor and others for feedback when necessary and is open to criticism about him/herself and his/her work. Knows how to incorporate comments into his/her research and behaviour. Likes to assist others.

Aspect Execution

< 5.5 (Insufficient)	5.5 – 6.9 (Sufficient)	7.0 – 8.4 (Good)	8.5 – 10 (Excellent)
Work pace and planning			
Student has difficulties to keep up with the planning. Does not signal if plans need to be adjusted and is not able to make new plans. Experiences problems because of this.	Student keeps up with the planning and is flexible enough to make new plans when necessary.	Student is a good planner and well able to combine, plan, and adjust different tasks.	Student is well able to plan and perform work as scheduled and finds time to reflect on the work done and to adjust the planning as necessary.
Practical research skills			
Student works careless and cannot plan his/her work or reproduce methodological steps. The student works unorganized and must be regularly reminded of the importance of working with precision. Data collection may be understandable to student, but not to others.	Student collects the data necessary in a comprehensive way. Data processing needs some guidance and the methods are mostly chosen by the supervisor.	Student works precisely and decently and understands why certain methods are chosen. He/she understands generally when and how to apply these methods. Data-collection and processing is well-organized.	Student is precise, uses direct applied research skills that have been acquired in a previous phase of his/her education and quickly learns new skills. Rarely requires an explanation about the relevance of procedures. Very well-organized.
Safety and accuracy			
Student works unsafely and without accuracy.	Student works safely and is capable to work accurate.	Student works safely and is capable to work accurate and in time.	Student works safely and is capable to work accurate and in time. Experiments are very carefully performed at a good speed.
Quality of lab journal			
Lab journal hardly readable, student cannot explain what is written down and why.	Journal contains necessary data to follow experimental line, but could be more comprehensive at times.	Experiments described carefully and completely.	Experiments described carefully and completely, annotations show later reflection on the work.

Aspect Report

< 5.5 (Insufficient)	5.5 – 6.9 (Sufficient)	7.0 – 8.4 (Good)	8.5 – 10 (Excellent)
<i>Problem and context analysis (setting out framework, background –literature, formulating research problem)</i>			
The relevance of the research problem and the scientific background are mentioned but the student is not capable to explain the scientific hypothesis. The structure of the introduction is not coherent.	Describes the context and enfoldes the corresponding scientific backgrounds to support the relevance of the research problem, but in a rather superficial manner. Student concludes with a well-defined research question.	The theoretical context and analysis of the problem is clearly presented. From this the research questions are developed and an experimental design is presented. Relevant literature is incorporated.	Thorough and creative presentation of the context and problem. Research questions and hypotheses are developed coherently and experimental design and expectations are presented concisely. References of high quality and well-interpreted.
<i>Methods used, design and choice of variables</i>			
The student demonstrates a crude understanding of the chosen methodology. Variables are not well chosen. No justification of methods.	Justifies the methodology and understands the effect of the chosen methods on the quality of data, but shows minor flaws in applying this understanding to his/her own project. Student gives explanations of relevant (interim) analyses.	Student is capable of a critical and thorough description and justification of the methods used. Study is repeatable without much further information. Clear description of treatments and sample sizes. Proper use and justification of statistical techniques.	Student grasps the link between the used methodology and data quality and acknowledges any limitations therein. Student defends and supports adjustments in methodology to increase data quality. Study immediately repeatable. Proper use and justification of statistical techniques.
<i>Data collection, processing and presentation</i>			
The presentation of the data is imprecise or incomplete. The analyses are questionably deficient. The results paragraph is not well organized. Results shown differ from what is written in the methodology paragraph.	The results are complete and adequate, but cannot be used for further research unless thoroughly checked and corroborated.	Resulting data are well presented and can be useful as a starting-point for publication, but must be validated. Tables and figures are presented in proper layout.	Student shows a complete and thorough analysis of data, with an excellent presentation thereof. Can be used for publication almost immediately.
<i>Discussion (structure of argument, conclusions, link to research problem, context with literature)</i>			
Arguments are sometimes flawed. Insufficient correspondence to relevant literature in the field of research. The structure of the discussion is mediocre. The conclusion faintly answers the research question. No attention for the strengths of the study and often exaggerated attention for limitations of methods. No evidence of understanding.	Student answers the research questions, possesses sufficient knowledge of the field to discuss the results, and uses relevant literature. Student is able to draw a sound conclusion but has a limited ability to discuss the findings in a broader context. Strengths and imitations of the study are mentioned and implications for results are clarified.	Student answers the research questions clearly, possesses sound knowledge, employs recent literature, and deals with information in a critical manner. Is able to place the findings in a theoretical context in order to answer the research question. Student draws convincing conclusions and summarizes the work in a clear take home message.	Student demonstrates a deep understanding of the value of the study for the scientific field. Student presents a concise but accomplished evaluation of his/her findings in the light of the theoretical background and the state-of-the-art literature. The student suggests new hypotheses and research plans on the basis of his/her work.
<i>Summary</i>			
Too wordy or too short and sometimes	The abstract comprises the context, the research	The abstract comprises the context, the research	The research is summarized in an excellent


incomprehensible. The abstract is deficient in one or more of the following items: the context, the research question, the methodology, the results and/or conclusion. The conclusions are unclear or not supported by the data.	question, the methodology used, it summarizes the results and it ends with the answers on the research question.	questions, the methodology used and it summarizes the results and it ends with a conclusion that answers the research questions. Attention for the general relevance of the study.	way, and meets criteria of a thorough scientific article. Excellent short description of methods, results, discussion and relevance of the study.
Readability and use of English language			
English is poor. Grammatical and punctuation errors. Paragraphs are not well written and/or connection between paragraphs not clear.. Statistics and relevance are poorly presented.	The structure of the report is acceptable. Text might contain some language errors; some sentences are ambiguous..	The structure of the report is adequate. Use of language, grammar and spelling sufficient.. English is good.	The structure of the report is adequate and concise. Virtually no language or spelling errors. High level of readability. English is of excellent quality.
Layout			
Poor lay-out. Figures and tables are missing or are inadequate.	Lay-out is tidy. Figures and tables are clear. Text could be more organized.	Appropriate lay-out. Figures, tables and references are clearly presented and in correct format.	Good layout that improves readability. Figures, tables and references are clearly presented and in correct format.

Aspect Oral Presentation

< 5.5 (Insufficient)	5.5 – 6.9 (Sufficient)	7.0 – 8.4 (Good)	8.5 – 10 (Excellent)
Presentation skills: narrative technique, use of media, time management			
Difficult to understand and follow because of rhythm (too slow or too fast) and/or sound of voice. English as well as lay out of slides is poor.	Presentation is in time. Rhythm and tone of voice are clear. Lay-out of slides is sufficient.	Presentation is in time. Rhythm and tone of voice are pleasant. Lay-out of slides is good and discussion is informative.	Excellent presentation, informative slides, lively presented and a pleasure for the audience.
Scientific content, structure, build up, thread of argument, clarity of conclusion			
Structure is unclear and the presentation of question, results and conclusions is present but fragmented.	Clear structure with question, methods, results and discussion nicely summarized and logical thread of arguments.	Content of presentation is well structured and content of slides is compact and logical. Conclusion is clear and convincing. Limitations of study are well presented.	Well structured presentation with sound arguments, conclusion and discussion.
Discussion and ability to deal with questions			
Does not respond to questions or answers remain unclear and not to the point.	Responds on questions and gives answers using arguments based on data and literature and is to the point.	Responds on questions and gives answers by arguments from own data and literature. The answer is to the point and shows a broad view on the subject.	Responds on questions in convincing way and explores the answers in broader a context and shows thorough understanding of the subject.

It goes without words that this list can never be complete. It is rather meant to provide a framework of examples that are frequently encountered in practice. All parts of the report should meet the requirements set out in the *Guidelines of the Report* section in part 4 of this manual.

Appendix 9. Time schedule for students

<h1>Actions</h1>	
Get acquainted with the <i>Student Placement (Internship) and Research Project Regulations</i> and this <i>Placement Manual</i> .	
Find an internship place, an on-site and a VU supervisor in case the internship is external and the on-site supervisor is not the VU supervisor.	
Send the master or placement coordinator of the specialization the Research Proposal (see Appendix 2) as soon as possible.	
In case of an internship abroad, also visit the international office FALW.	
Send the master coordinator a signed Application and Agreement form (see Appendix 3) (signed by the the VU supervisor, the on-site supervisor if not VU supervisor, and the student) two weeks before the start of the internship together with a VUnet overview stating results of the Master courses followed and the signed research proposal.	
When you have all the approvals: start your internship.	
After a maximum of six weeks, evaluate the internship with (the on-site supervisor and) the VU supervisor, resulting in a Go or No Go for the internship (see Appendix 4). Send the signed form to the master coordinator.	
Write a scientific report in English during the internship.	
For one, maximally two correction rounds send draft manuscripts of the report to on-site (if not VU supervisor) and VU supervisor.	
Send the VU supervisor and the on-site supervisor (if not VU supervisor) the final report/on-time for assessment (in accordance to the agreed dates/number of drafts) and the Assessment form Part 1 (see Appendix 5).	
At the end of the internship, give an oral presentation. The presentation is assessed by the VU supervisor on the Assessment form Part 1 (see Appendix 5).	
Send the final report digitally to the programme secretariat FALW, unless this is not permitted due to confidentiality of the results.	