

CvB stukken voor agenda Universiteitsraad

Overlegvergadering d.d. : 07-11-2012

Commissievergadering : OOS

Agendapunt: **ATLAS: Monitoring voortgang University College**
(eerste monitor, september 2012)

Bijgevoegde stukken : ATLAS: Monitoring voortgang University College

Betrokken concerndirectie: S&B

paraaf: _____

Secretaris: Van Keulen

paraaf: _____

Portefeuillehouder: Brinksma

paraaf: _____

1. Status agendapunt:

Rol URaad:

- ✓ Ter informatie
- Ter advisering
- Ter instemming
- Anders:

2. Eerder behandeld in:

Naam gremium: URaad

Datum behandeling: 14-12-2011

Naam agendapunt: University College

Conclusie toen: Instemming met start nieuwe opleiding.
Afspraak over drie monitormomenten.

3. Toelichting/samenvatting:

De bijlage betreft de eerste monitor ter informatie aan de Universiteitsraad met betrekking tot de voortgang van ATLAS (Academy of Technology and Liberal Arts & Sciences), het University College dat in september 2013 haar eerste studenten zal verwelkomen op de campus. Deze eerste monitor geeft inzicht in de mijlpalen en activiteiten van ATLAS van december 2011 tot en met september 2012.

English summary:

The appendix is the first of three ATLAS monitors for your information. ATLAS, the Academy of Technology and Liberal Arts & Sciences, is the UT University College that will welcome its first students on Campus in September 2013. This first monitor gives an overview of the ATLAS milestones and activities from December 2011 – September 2012.

4. (Voorgenomen) besluit CvB:

Gezien

Gehoord

Overwegende

Besluit het CvB:

GRIFFIE URaad: (door griffie UR in te vullen)
Eerder in URaad aan de orde geweest?

- Nee.
- Ja, op

Conclusie toen:

Nadere toelichting: (Voor als presidium/griffier vindt dat één van bovengenoemde punten nadere toelichting behoeft)

.....
.....

ATLAS: Monitoring voortgang University College
VOORTGANG VERWEZENLIJKING PLANNEN, eerste rapportage, dec. 2011 – sept. 2012
21-09-2012, t.b.v. UR

Het CvB heeft de UR toegezegd op drie tijdstippen te zullen rapporteren over de voortgang van ATLAS: rond de zomer 2012, in mei 2013 en in januari 2016. Deze notitie is de eerste rapportage. Allereerst wordt een overzicht gegeven van de activiteiten en mijlpalen sinds de instemming door de UR (december 2011). Daarna volgt een korte samenvatting van de activiteiten in het komende halfjaar. Aan het eind wordt expliciet ingegaan op de aandachtspunten uit de overlegvergadering van 14-12-2011.

Mijlpalen en activiteiten sinds vorige agendering in UR (14-12-2011)

1. in januari 2012 is de TNO (Toets Nieuwe Opleiding) aangevraagd bij de NVAO, evenals de toets voor het Bijzonder kenmerk "Kleinschalig en intensief onderwijs";
2. het kernteam van de ATLAS-docenten is samengesteld;
3. tijdens het bezoek van staatssecretaris Zijlstra op 29-02-2012 werd ATLAS gepresenteerd en werd de benoeming van ATLAS Dean prof. dr. Jennifer Herek bekend gemaakt;
4. de opleiding is inhoudelijk verder uitgewerkt. Ter voorbereiding op de visitatie is op verzoek van de NVAO een Examination Board samen gesteld;
5. op 15 juni werd een proefvisitatie uitgevoerd;
6. op 22 juni was de daadwerkelijke visitatie van de nieuwe opleiding;
7. in juli nam de NVAO haar besluiten:
 - de Toets Nieuwe Opleiding resulteerde in een positief besluit voor de start van de nieuwe opleiding *Technology and Liberal Arts & Sciences*. Het rapport van het NVAO-panel was uitermate positief van toon: ook het panel gelóóft in ATLAS;
 - het oordeel over het aangevraagde Bijzonder Kenmerk "Kleinschalig en intensief onderwijs" was ook positief;
8. *Technology and Liberal Arts & Sciences* is geregistreerd in het CROHO;
9. "Gebouw A" aan het O&O-plein is aangewezen als de ATLAS-onderwijslocatie voor de eerste jaren;
10. afspraken met docenten en staf worden vastgelegd;
11. er wordt actief geworven voor ATLAS.

Hieronder volgt een nadere uitleg per mijlpaal of activiteit.

1. in januari is de TNO (Toets nieuwe opleiding) aangevraagd bij de NVAO, evenals de toets voor het Bijzonder kenmerk "Kleinschalig en intensief onderwijs"

Om een nieuwe opleiding te mogen starten moet het CvB allereerst een macrodoelmatigheidstoets aanvragen bij OCW (via de CDHO: Commissie Doelmatigheid Hoger Onderwijs). Deze is in 2011 aangevraagd en positief beoordeeld. Daarna dient een TNO te worden aangevraagd bij de NVAO. Zonder positieve besluiten op deze beide toetsen kan een opleiding niet starten als geaccrediteerde, erkende diplomaverstreckende en bekostigde opleiding.

Daarnaast werd het Bijzonder kenmerk "Kleinschalig en intensief onderwijs" aangevraagd. Dit is een nieuwe NVAO-procedure die nodig is voor opleidingen die willen selecteren aan de poort en een hoger collegegeld willen vragen.

2. het kernteam van de ATLAS-docenten is samengesteld

Na presentaties in de faculteiten, op basis van tips vanuit de UT-gemeenschap en spontane aanmeldingen van belangstellenden is een 'long list' van kandidaten voor het ATLAS-team opgesteld. Op basis van gesprekken van ATLAS-opleidingsdirecteur Kees Ruijter met decanen, hoogleraren van alle faculteiten en potentiële kandidaten werd de lijst ingekort en werd uiteindelijk een 'core team' van tien docenten geselecteerd.

Het succes van ATLAS hangt in grote mate af van het docententeam. Hierbij gaat het om zowel de individuele bekwaamheden van iedere docent als de mate waarin ze gezamenlijk een team vormen dat staat voor ATLAS.

Specifiek voor ATLAS zijn met name de volgende aspecten relevant:

- opereren buiten de grenzen van het eigen vakgebied en kunnen omgaan met multidisciplinariteit;
- abstraheren, generaliseren en contextualiseren, specificeren;
- omgaan met diversiteit, in het bijzonder de verschillende ambities, culturele en persoonlijke bagage van de studenten;
- functioneren in een open leersituatie;
- bijdragen aan een uitdagende en inspirerende studie- en werksfeer;
- omgaan met excellentie.

Hierbij gaat het om zowel de bekwaamheid om een effectieve leeromgeving te ontwerpen als om zelf te kunnen functioneren in een dergelijke omgeving, waarin genoemde kenmerken manifest zijn.

Er is een behoorlijk aantal UT-docenten dat zich aangesproken voelt door het onderwijsconcept van ATLAS en een bijdrage aan het onderwijs wil leveren. Vanuit ATLAS wordt gestreefd naar een team dat een gevarieerde opbouw heeft naar leeftijd, expertises, onderwijservaring, internationale ervaring, gender enzovoorts.

In gesprekken met potentiële docenten kwam aan het licht dat voor veel docenten die relatief aan het begin van hun carrière staan, het vanuit carrièreperspectief niet altijd lucratief is om aan ATLAS mee te doen. Deelname aan ATLAS betekent dat ze lossen komen te staan van hun eigen netwerk, zich niet altijd gesteund weten door hun leidinggevende (de groepen voelen minder verantwoordelijkheid voor ATLAS dan voor het 'eigen' onderwijs en de opbrengsten in potentiële masterstudenten en AIO's wordt geringer ingeschat). De consequentie zou kunnen zijn dat de ATLAS-taken bovenop de bestaande onderwijstaken komen, ten koste van de onderzoektijd. Dat is een risico voor de carrière van de betreffende docent. Daarom wordt onderzocht hoe docenten gecompenseerd zouden kunnen worden in 'onderzoektijd'.

De samenstelling van het kernteam is als volgt (zie bijlage 1 voor meer informatie):

	prof. dr. Jennifer Herek (Dean) (TNW)	
	drs. Kees Ruijter (opleidingsdirecteur)	
dr. Ardion Beldad (GW)		dr.ir. Martin van der Hoef (TNW)
prof.dr.ir. Mieke Boon (GW)		dr.ir. Jasper Homminga (CTW)
dr. Ruud van Damme (EWI)		dr.ir. Klaasjan Visscher (MB)
dr. Fokko Jan Dijksterhuis (MB)		dr. Pascal Wilhelm (GW)
dr. Maaïke Endedijk (GW)		dr.ir. Wessel Wits (CTW)

Iedere docent is verantwoordelijk voor een leerlijn in het programma (onderzoek, ontwerpen, organiseren, leiderschap, leervermogen, leeromgeving, gedragswetenschappen, communicatie, sociale wetenschappen, ingenieurswetenschappen, wiskunde & modelleren, interdisciplinariteit). Naast dit kernteam zijn andere docenten bij ATLAS betrokken die een kleiner deel van het onderwijsprogramma voor hun rekening nemen.

3. tijdens het bezoek van staatssecretaris Zijlstra op 29-02-2012 werd ATLAS gepresenteerd en werd de benoeming van ATLAS Dean prof.dr. Jennifer Herek bekend gemaakt

Prof. Herek volgt prof. Albert van den Berg op, die tot dat moment fungeerde als ATLAS Dean en voorzitter van de ATLAS Programme Council. Prof. Herek studeerde zelf aan een Liberal Arts College (Lawrence University, Appleton, VS) en is sinds 2006 hoogleraar Optical Sciences (TNW). Vanaf de installatie van de Programme Council (29-03-2011) is prof. Herek betrokken bij ATLAS.

4. de opleiding is inhoudelijk verder uitgewerkt

Het kernteam van docenten (zie hierboven) is in kleine teams begonnen met de verdere uitwerking van de modules binnen ATLAS. Binnen een team zijn steeds de bèta- en de gamma-perspectieven vertegenwoordigd.

5. op 15 juni werd een proefvisitatie uitgevoerd

De proefvisitatie werd uitgevoerd door dr. Gerrit van der Hoeven (vz; OLD- Creative Technology), dr. Hans Vossensteyn (UT-CHEPS, instellingstoets / IKS) en drs. Ans Netjes (managing director van het Honours Programme Windesheim, daarvoor betrokken bij de opzet van het University College Maastricht). Het proefpanel oordeelde als volgt over de vier NVAO-standaarden:

- I. Beoogde eindkwalificaties: de doelen van het programma werden positief beoordeeld; de betrokkenen begrepen volgens het panel het unieke profiel van deze opleiding.
- II. Onderwijsleeromgeving: het panel was ervan overtuigd dat de doelen ook worden gehaald in het programma. Wel werd gewaarschuwd niet volledig te vertrouwen op de selectie. Het panel was positief over de betrokkenheid van de staf en het CvB. Het docententeam maakte een ijzersterke indruk. Ook de studentleden van de Programme Council deden het erg goed.
- III. Toetsing: hierover had het panel enige zorgen, omdat de manier waarop ATLAS wil gaan toetsen niet bij alle betrokkenen helder bleek te zijn. Ook was onduidelijk hoe voorkomen wordt dat een student faalt en of er herkansingen mogelijk zijn.
- IV. Afstudeergarantie en financiële voorzieningen: positief. Alle betrokkenen voelden veel steun voor ATLAS. Het panel was positief over de betrokkenheid van de staf en het CvB.

Na de proefvisitatie is intensief met alle betrokkenen gewerkt aan de verbeterpunten (met name toetsing) ter voorbereiding op de "echte" visitatie.

6. op 22 juni was de daadwerkelijke visitatie van de nieuwe opleiding

Het panel bestond uit mw. prof.dr. J.C.M. van Eijndhoven (vz; em.hgl. EUR), prof.dr. M. Somerville (Olin College, Boston, VS), dr. C. van den Bogaert (Universiteit van Antwerpen), drs. M.M. Vermeulen (beleidsmedewerker EUR, voorheen Siriusprogramma (excellentie) bij Platform Bèta Techniek) en E. van Duin MSc (studentlid UvA). De UT had bepleit om iemand vanuit de USA, de bakermat van de liberal art colleges, op te nemen in het panel en was verheugd over de deelname van iemand van het Olin College uit Boston als panellid, omdat dat College in verschillende opzichten een inspiratiebron voor ATLAS vormt.

Alle gesprekken verliepen in een goede sfeer. Veel vragen gingen over de kwaliteitsgarantie (de balans van breedte en diepgang en de consequenties voor toelaatbaarheid tot de masteropleidingen naar keuze) en over de Personal Pursuit. De antwoorden stelden tevreden en de rol van de examencommissie daarbij werd geprezen. Het panel was onder de indruk, ook van de rondleiding (jaarzalen, virtual reality lab).

De mondelinge terugkoppeling was positief in toon en inhoud: het panel had er alle vertrouwen in dat wat misschien op 22 juni nog niet helemaal op orde of vastgelegd was voor de start van ATLAS zou zijn gerealiseerd.

7. in juli nam de NVAO haar besluiten:

- de Toets nieuwe opleiding resulteerde in een positief besluit voor de start van de nieuwe opleiding *Technology and Liberal Arts & Sciences*. Het rapport van het NVAO-panel was uitermate positief van toon: ook het panel gelóóft in ATLAS (zie bijlage 2);
- het oordeel over het aangevraagde Bijzonder kenmerk “Kleinschalig en intensief onderwijs” was ook positief.

In de bijlagen zijn samenvattingen van beide besluiten opgenomen (zie aldaar).

De NVAO formuleerde twee aanbevelingen: ATLAS zou er goed aan doen de samenhang tussen projecten en leerdoelen van de opleiding concreter uit te werken, en ATLAS zou goed moeten toezien op de zorgvuldige inpassing van Personal Pursuit-projecten in de leerdoelen van de opleiding en op een passende beoordeling van de uitkomsten van de projecten.

Het NVAO-panel was ook gevraagd een uitspraak te doen over de naam van de opleiding, vanwege de opmerking van de CDHO daarover bij de macrodoelmatigheidstoets (men wil voorkomen dat er teveel verschillende namen van bacheloropleidingen zijn). Het NVAO-panel was daar zeer uitgesproken over: *Technology and Liberal Arts & Sciences* kreeg alle steun; men adviseerde tegen het verkorten van de naam tot LA&S (de naam die UU, UM, UvA/VU en TiU hanteren).

8. *Technology and Liberal Arts & Sciences* is geregistreerd in het CROHO

Begin augustus is de nieuwe opleiding bij DUO in het CROHO geregistreerd onder een uniek nummer (50427), onder HOOP-gebied “Sectoroverstijgend”/ “subonderdeel Onderwijs/landbouw en natuurlijke omgeving/natuur/techniek/gezondheid”, en hoog bekostigd. Sinds het CROHO-nummer (de ISAT-code) bekend is worden de systemen op de UT voor onder meer de aanmelding en inschrijving van studenten in orde gemaakt.

Per 1 oktober is Studielink online en kunnen studenten zich aanmelden.

9. “Gebouw A” aan het O&O-plein is aangewezen als ATLAS-onderwijslocatie voor de eerste jaren

Voor de huisvesting is het oog gevallen op gebouw A. De ligging op de UT en de geringe investering die nodig is om de eerste lichtingen te kunnen huisvesten maken dit een geschikte optie. Binnen Gebouw A zal een drietal jaarzalen worden ingericht. Op langere termijn heeft ATLAS de ambitie om in het tweede deel van de ‘Etalage’ (“Galaxy”) of in de Technohal gehuisvest te worden.

10. afspraken met staf en docenten worden vastgelegd

Er wordt een kleine staf samengesteld die tezamen zorgt dat – in goede afstemming en samspraak met de diensten en servicecentra van de UT – de communicatie met (potentiële) studenten, de toelating en selectie, de ondersteuning van het kernteam, de opbouw van een netwerk voor internationale uitwisseling en voor de Personal Pursuit, de huisvesting van de studenten en de integratie van de studenten, de onderwijshuisvesting en -faciliteiten, tijdig en effectief zullen worden gerealiseerd.

De docenten worden voor een langere termijn (5 jaar) ingehuurd door ATLAS. De oorspronkelijke gedachte dat het commitment aan ATLAS het best gewaarborgd zou zijn door een afzonderlijke aanstelling bij ATLAS is om praktische redenen verlaten. Vermindering van de hoofdaanstelling in de eigen faculteit is nadelig voor de rechtspositie in die faculteit, terwijl een dubbele aanstelling de administratieve last sterk verhoogt. De afspraken met de docenten, hun direct-leidinggevenden en de decanen worden op dit moment vastgelegd. Aansluitend zal de detaillering van het onderwijsprogramma ter hand worden genomen, opdat de Opleidingscommissie en Faculteitsraad zich tijdig kunnen buigen over het OER van de opleiding en het reglement van het College.

11. Er wordt actief geworven voor ATLAS

Inmiddels is een marketingplan opgesteld om de naamsbekendheid van ATLAS onder de doelgroep te vergroten. Een eerste stap is om scholen (decanen, docenten) die bij het vooronderzoek waren betrokken rechtstreeks te benaderen om ze te bedanken voor hun bijdrage, en om via hen leerlingen te kunnen betrekken bij de verdere ontwikkeling. Een nauw contact met de leerlingen kan ons leren hoe onze boodschap overkomt, en met name hoe begrippen als technology, engineering, excellence, residential on campus, en personal pursuit worden opgevat.

Ook tamelijk direct is de benadering van medewerkers van andere scholen, waarvan personen bij UT-ers persoonlijk bekend zijn. Verder wordt meegedaan met andere UT-activiteiten rond de voorlichting en positionering als 'student fairs', 'schoolbezoeken', 'decanendagen', voorlichtings- en open dagen. Bijzondere aandacht is er voor de International Bachelareate scholen in zowel Nederland, Engeland als Duitsland. Stapsgewijs wordt de website verder ontwikkeld waarbij het eerste jaar de persoonlijke aanpak overheerst; we nodigen de eerste lichting uit om als partner mee te helpen bij de opzet en ontwikkeling van ATLAS.

Bij de uitvoering van activiteiten wordt de samenwerking met studenten van het Honours Programme en hun studievereniging Oxham verder uitgebreid.

Activiteiten voor het komende halfjaar

In de tekst hierboven werd – naast het terugkijken – al ingegaan op de planning voor de komende maanden. In het kort samengevat ligt de prioriteit bij:

- de verdere uitwerking van het onderwijsprogramma (zie 4);
- uitwerken aanbevelingen visitatiecommissie (zie 7);
- in orde maken van de benodigde systemen (zie 8);
- verbouwing van Gebouw A (zie 9);
- vastleggen afspraken staf en docenten (zie 10);
- naamsbekendheid ATLAS vergroten, voorlichten en werven (zie 11);
- selectie van studenten die zich aanmelden, conform procedure die in TNO-document was beschreven.

Hieronder zijn de aandachtspunten uit de UR-overlegvergadering van 14-12-2011 aangaande ATLAS weergegeven.

University College (UR 11 – 280/298)

De Universiteitsraad,

gezien:

- het instemmingsverzoek University College (UR 11-280);

gehoord:

- de beraadslagingen in de commissie OOS en FPB;

overwegende dat:

- Het University College een middel is voor de profilering van de Universiteit Twente als opleidingsinstituut op het snijvlak van technologie en maatschappij;

- De voortgang voor de opzet van en belangstelling van potentiële studenten voor deze opleiding invloed moet hebben op de verdere ontwikkeling;

- Een sterkere focus op het engineering domein gewenst is;

- De inzet van financiële middelen op de UT door externe bezuinigingen onder druk staan waardoor een blijvende afweging t.a.v. de inzet van middelen noodzakelijk is;

- Naar een positieve interferentie met het huidige honoursprogramma gestreefd moet worden;

gehoord de toezeggingen van het college dat:

1) Drie tijdstippen voor monitoring van voortgang en heroverweging University College ingebouwd worden. Deze momenten zullen liggen rond zomer 2012, mei 2013 en januari 2016;

2) Er een versterkte focus zal zijn op de engineering kant;

3) Bij de monitoring in mei 2013 aangegeven zal worden hoe de relatie met honoursprogramma een versterking van zowel het honoursprogramma als het UC gaat opleveren;

4) Bij de monitoring in zomer 2012 aangegeven wordt hoe de monitoring van kosten en financiële verantwoordelijkheid wordt gerealiseerd;

5) Voor het UC maximaal k€ 500 per jaar financiering boven de financiering van andere opleidingen beschikbaar is;

besluit:

in te stemmen met de instelling van het University College.

Hierna volgt nog een korte toelichting bij de vijf toezeggingen door het CvB.

- 1) Deze rapportage betreft de eerste van de drie.
- 2) Er is een versterkte focus op de engineering kant. ATLAS spreekt liever van ontwerpen, technologie, probleem oplossen (onder meer het Platform Bèta Techniek heeft de UT erop gewezen dat het woord “engineering” meiden af zou kunnen schrikken: het zou te saai, moeilijk en disciplinair klinken). In ATLAS wordt gesproken van ‘new engineering’, om de nadruk op de manier van aanpak duidelijk te maken: het ontwerpen van oplossingen waarbij de nadruk ligt op de interactie van het technische en het maatschappelijke perspectief. Door de onderwijsopzet met een thematische opzet met daarbinnen projectonderwijs, met opdrachten die maatschappelijke vraagstukken betreffen, is het risico dat de opleiding geleidelijk een steeds meer science-kleur krijgt ingedamd.
- 3) Volgt in mei 2013.
- 4) In november 2011 werd prof.dr.ir. Ton Mouthaan benoemd tot penvoerend decaan van ATLAS. Dat betekent dat hij de ATLAS Board of Governors – het ATLAS-bestuur, bestaande uit alle UT-decanen – voorziet en dat ATLAS financieel bij EWI is ondergebracht. De monitoring van de kosten en de financiële verantwoordelijkheid gebeurt via de jaarplannen bij het najaarsoverleg en via de verantwoording bij het voorjaarsoverleg, dus via de normale P&C-cyclus, waarin ATLAS wordt meegenomen als aparte eenheid. ATLAS werkt momenteel (september) aan de afronding van de begroting die bij het najaarsoverleg aan het CvB wordt voorgelegd.
- 5) De ATLAS-begroting gaat uit van jaarlijks maximaal k€ 500 aan dekking vanuit de UT, zoals besloten. Wel wordt 2014 een moeilijk jaar; er zijn dan nog nauwelijks inkomsten. De kosten gaan voor de baat uit. Er wordt nog onderzocht hoe dat in 2014 opgevangen kan worden. Net als bij andere nieuwe opleidingen is gebeurd is ook voor ATLAS met het CvB overeengekomen dat de aanloopverliezen door het “t-2”-effect worden voorgefinancierd. Hierdoor bouwt ATLAS aanvankelijk een negatieve bedrijfsreserve op. Na deze aanloopjaren kan ATLAS de exploitatie sluitend krijgen binnen de afgesproken randvoorwaarden (- k€ 500). De grootste onzekerheid wordt bepaald door het aantal toegelaten studenten en hun resultaat.

In mei 2013 volgt de tweede rapportage aan de UR.

Bijlagen:

1. overzicht ATLAS staf
2. besluiten NVAO (TNO en BK, twee brieven en twee rapporten)

ATLAS

The core team members and their learning lines



Ardion Beldad
Communication



Mieke Boon
Interdisciplinarity



Ruud van Damme
Math and Modeling



Fokko Jan Dijksterhuis
Research



Maaïke Endedijk
Learning capacity



Jasper Homminga
Learning environment



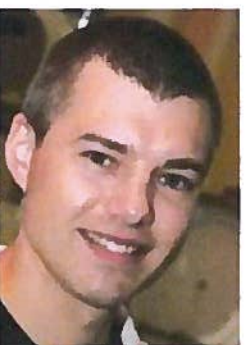
Martin van der Hoef
Research/Science



Klaasjan Visscher
Organisation/Social Sc



Pascal Wilhelm
Design/Behavioral Sc



Wessel Wits
Design/Engineering

Coherence and cohesion of the programme

The coherence and cohesion of the programme is ensured by assigning the learning lines to the core teachers of ATLAS pictured above. The learning lines (TNO-report page 11) are derived from the learning outcomes and are correlated to the components of the continuous development of academic and personal competencies of the students.

Some of the learning lines relate to content-related knowledge and skills, while others relate to more general academic competencies such as *research, design, organisation* or *multi-, inter- and trans-disciplinarity* and to personal competencies such as *learning capacity, communication* and *leadership*.

The core team members will not only be responsible for ensuring coherence but they will have integral teaching roles and also serve as mentors. The mentor supervises the personal development of the students who are assigned to her or him. A senior tutor will secure that all students are always on the ATLAS radar.

Monitoring and assessment of student progress

Selection and intake will result in a contract: to the best knowledge of the student and the admission committee the student fits into the programme and is ready for ATLAS. Personal arrangements with regard to degree and non-degree activities are part of the agreement.

During the first semester intensive guidance and monitoring will reveal whether the match is indeed adequate. In case of an evident mismatch the student will be guided to an alternative programme at the UT or elsewhere.

Academic bachelor programme
Technology and
Liberal Arts & Sciences
University of Twente

Initial accreditation

10 July 2012

Panel report

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1 Executive summary

The Accreditation Organisation of the Netherlands and Flanders (NVAO) has received a request for an initial accreditation procedure, including programme documents, regarding the proposed academic bachelor programme Technology and Liberal Arts & Sciences of University of Twente. In order to obtain an informed advice about the quality of the proposed programme, the NVAO convened an expert panel. The panel has studied the programme's information file and listed a series of questions which the programme has answered in the run-up to the site visit. During the site visit, the panel met with representatives of the university, programme management and teaching staff. Below, the panel presents the considerations which have led to the assessment.

The panel regards the goal of the programme to educate engineers with a broad perspective as appropriate. These engineers will be educated to be able to address topics from the social sciences as well. The intended learning outcomes of the programme are sound. These not only reflect the competences of the specialist engineering programmes but also the interdisciplinary competences, required for the graduates of this programme. The intended learning outcomes meet the 3TU requirements and, therefore, the Dublin descriptors, indicating the level of the programme is a bachelor's level. The learning outcomes reflect the learning objectives drafted for liberal arts and sciences programmes. The panel considers the codes of conduct the graduates have to comply with as being valuable for their personal development.

The target group of gifted students is the right target group for this programme. The admission procedure is sound, selecting the students who have the abilities to complete the programme. The intended learning outcomes are completely and evenly reflected in the curriculum. The concept of the programme is well elaborated in the curriculum. The courses are appropriate in transferring the disciplinary knowledge which the students need. The theme-related projects provide an interesting structure to implement the interdisciplinary nature of the programme. Still, the projects ought to be elaborated in more detail. The panel recommends to draft the learning objectives of the projects more precisely in order to ensure these to meet the intended learning outcomes. The panel considers the Personal pursuit projects appropriate for the students' personal development. These projects reflect the concept of *Bildung*. As these projects are inherently self-directed, the programme management should ensure the Personal pursuit projects to meet the intended learning outcomes. The panel does not question the willingness and the abilities of the programme management to achieve this. The panel applauds the role of the examination board in approving the plans for these projects. The degree of choice of courses the students have allows them to prepare for the master's programme of their preference. The panel assesses the course material to be appropriate but encourages the programme management to make certain that the choice of texts is aligned with the learning objectives.

The members of the staff core team are all very motivated and enthusiastic teachers. The cohesion of the team is strong. The disciplinary knowledge of the teachers is up to standard. Their didactical abilities meet the requirements of this small-scale, intensive programme. The panel feels the teachers will be able to effectively transfer knowledge and skills.

The didactical concept of project-led education is well-suited for this programme. Teams of 4 to 8 students have to handle ill-defined situations which they have to redefine into a set of

problems for which they conduct research and design solutions. The student-to-staff ratio of 16:1 is appropriate for this small-scale programme. The number of contact hours is adequate as well. The study guidance as represented in the mentoring system is good. The building and the material facilities of the programme enable the staff and students to organize the learning processes effectively.

The panel regards the programme to be very ambitious for the presently available staff, especially in time consuming elements such as the personal pursuit and mentoring. The panel would advise the programme management to adjust the programme to the resources available. The panel has observed awareness on the part of the programme management and the teachers to adjust the plans if the real situation would prove to differ in important aspects from the projections. The panel, therefore, is confident the programme management will be able to execute the programme along the lines now drawn.

The examination board of the programme is an important safeguard for the quality of the assessments as well as for the level of the graduates of the programme. The assessment forms conform to the learning objectives of the courses and the projects, are well elaborated and are appropriate to assess the individual contribution of students in the case of group projects. The panel is positive about the intention of the programme to have the examinations and the assessments reviewed by a second teacher. The panel would, nevertheless, advise the programme management to work out these plans in more detail. The assessment of the Graduation project by two assessors and by means of a report as well as an oral defence is adequate. When this project is a group project, the assessment procedure enables the assessors to identify and rightly assess the individual performance of each of the students. The panel is confident the graduates of the programme will have the capacities to be admitted to a number of demanding master's programmes and will, therefore, be able to pursue their career to become the engineers with the broad perspective the programme management wants to educate. The choices for courses the students can make enable them to prepare for a number of interesting master's programmes. The panel understands that the programme management advises the students to pursue further studies in a challenging master's or graduate programme and not to enter the labour market upon completion of this bachelor's programme.

The guarantee by the University of Twente that students will be able to complete the programme is appropriate. The budget the programme management has drawn up is realistic. The funding by the Faculties and the University of Twente constitutes important financial safeguards, giving the programme ample opportunity to develop and execute the programme in the way the programme management has envisaged. The panel regards the financial basis of the programme to be sound.

The panel acknowledges the intention of the programme to be registered in the Croho domain Sectoroverstijgend, subonderdeel Onderwijs/Landbouw en natuurlijke omgeving/Natuur/Techniek/Gezondheid and the motivation supplied in the information dossier. In view of the multi- and interdisciplinary nature of the programme, which has been established also during the initial review, the panel accepts the programme's intention and advises the NVAO that the programme be registered in the Croho domain mentioned above.

In response to the question put to the panel by the NVAO whether the addition 'Technology' to the name of the programme is appropriate, given that all other University Colleges in the Netherlands are called 'Liberal Arts and Sciences', the panel regards the name Technology

and Liberal Arts & Sciences a good representation of the distinctive nature of the programme within the field of Liberal Arts and Sciences programmes in the Netherlands. It advises against a shortening of the name to 'Liberal Arts & Sciences'.

Given these considerations, the panel advises the NVAO to take a positive decision with regard to the quality of proposed academic bachelor programme Technology and Liberal Arts & Sciences of the University College of University of Twente.

The Hague, 10 July 2012

On behalf of the Initial Accreditation panel convened to assess the quality of proposed academic bachelor programme Technology and Liberal Arts & Sciences of University of Twente,

Prof.dr. J.C.M. van Eijndhoven
(chair)

drs. W.J.J.C. Vercouteren RC
(secretary)

2 Introduction

2.1 The procedure

NVAO has received a request for an initial accreditation procedure including programme documents regarding the proposed academic bachelor programme Technology and Liberal Arts & Sciences. The request was submitted by the University of Twente.

An initial accreditation procedure is required when a recognised institution wants to offer a programme and award a recognised bachelor's or master's degree. To a certain extent, an initial accreditation procedure differs from the accreditation procedure for programmes already being offered. Initial accreditation is in fact an *ex ante* assessment of a programme. A programme becomes subject to the normal accreditation procedures once the initial accreditation has been granted.

NVAO has convened a panel of experts. The panel consisted of:

- Prof. dr. Josee van Eijndhoven (The Netherlands), chair, retired Professor of Sustainability Management, Erasmus University Rotterdam;
- Prof. dr. Mark Somerville (United States of America), member, Professor of Electrical Engineering and Physics, Olin College, Boston, USA;
- Dr. Cis van den Bogaert (Belgium), member, physicist and Head of the Department of Education, University of Antwerp;
- Drs. Marjolijn Vermeulen (The Netherlands), member, Policy Advisor in Institutional development, Erasmus University Rotterdam;
- Esther van Duin MSc (The Netherlands), student member, graduated from the research master programme Brain and Cognitive Sciences-Neuroscience of the University of Amsterdam, currently working at the Nationale Denktank.

On behalf of the NVAO, dr. Th. de Bruijn was responsible for the process-coordination. The panel's report was drafted by drs. W.J.J.C. Vercouteren RC, external secretary.

The composition of the panel reflects the expertise which NVAO deemed necessary. (please refer to Annex 1: Composition of the panel). All the panel members have signed a statement of independence and confidentiality.

The panel has based their assessment on the standards and criteria of the NVAO Initial Accreditation Framework (Stcrt. 2010, nr 21523).

The following procedure has been adopted. The members of the panel studied the documents presented beforehand by the programme management (please refer to Annex 3: Documents reviewed).

On 16 May 2012 the panel held a preparatory meeting. In this meeting the panel members shared their first impressions, based upon the documents the panel had received. Panel member Somerville attended the meeting via a Skype connection. During the meeting on 16 May 2012 the panel drew up a list of questions, some of which were meant to be presented to the programme management before the site visit and some of which were meant to serve as a guide for the discussions with the representatives of the programme during the site

visit. On 14 June 2012 the panel convened again to discuss the answers of the programme to the questions put to them, and to adapt the list of questions for the site visit accordingly.

On 15 June 2012 the panel conducted a site visit at the premises of the programme on the campus of the University of Twente. The site visit was conducted in accordance with the schedule drawn up beforehand (please refer to Annex 2: Agenda of the site visit).

Immediately after the site visit the members of the panel shared their considerations for each of the standards of the NVAO Initial Accreditation Framework. These considerations were based on the findings during the site visit, building upon the evaluation of the documents submitted by the institution. The chair of the panel presented a broad outline of the findings of the panel to the representatives of the programme.

A draft version of this report was finalised by the secretary taking into account the information presented as well as the findings and considerations of the panel. The draft report was then sent to the members of the panel on 3 July 2012. The panel members corrected and amended the draft report. Finally, the secretary drew up the final report on 10 July 2012.

2.2 Panel report

The first chapter of this report is the executive summary, while the current chapter is the introduction.

The third chapter gives a description of the programme.

The panel presents its assessments in the fourth chapter. The programme has been assessed by examining the standards in the Initial Accreditation Framework. For each standard the panel presents an outline of its findings, considerations and a conclusion.

The *outline of the findings* are the facts as found by the panel in the programme documents, in the additional documents and during the site visit. The panel's *considerations* are the panel's evaluations with respect to these findings. The *considerations* presented by the panel logically lead to a concluding assessment.

The panel concludes the report with a table containing an overview of the assessments for each of the standards and for the programme as a whole.

3 Description of the programme

3.1 Overview

Country	The Netherlands
Institution	University of Twente
Programme	Technology and Liberal Arts & Sciences
Level	bachelor
Orientation	academic
Degree	Bachelor of Science
Location	Enschede
Mode of study	Full-time
Field of study	(in Dutch:) Sectoroverstijgend; subonderdeel onderwijs/landbouw en natuurlijke omgeving/natuur/techniek/gezondheid

3.2 Profile of the institution

The goal of the University of Twente is to create a learning and research environment in which the students and the staff may realize their talents to their full potential. Together, 3,300 scientists and professionals carry out research, aim to bring about socially relevant innovation, and provide teaching for more than 9,000 students. Fostering entrepreneurship is an important goal for the university. The campus is home to around 100 businesses, including student-run businesses. The University of Twente has also generated more than 700 successful spin-off companies. The university's business park, Kennispark Twente, encourages and assists entrepreneurs to start new companies.

The proposed academic bachelor programme Technology and Liberal Arts & Sciences is to be part of the new academic institution ATLAS, the University College of the University of Twente. The Board of ATLAS includes the deans of all of the Faculties of the University of Twente. The co-ordinating Faculty is the Faculty of Electrical Engineering, Mathematics and Computer Science. The dean of this Faculty is the chair of the ATLAS Board.

The ATLAS dean is responsible for the ATLAS strategy and internal and external relations. The dean and the director of education make up the ATLAS management team. The director of education is responsible for the quality of the Technology and Liberal Arts & Sciences programme.

3.3 Profile of the programme

ATLAS is a so-called University College offering a liberal arts and sciences programme. These programmes were introduced in the Netherlands some years ago, having been derived from the programmes in the United States. The main feature of these programmes is to combine various academic disciplines.

This programme will, however, be different from the majority of liberal arts and sciences programmes in the Netherlands in the sense that this programme addresses technology and engineering as well as social and behavioural sciences. The University College ATLAS will be the first in the Netherlands to offer an engineering, liberal arts and sciences programme.

The intended learning outcomes of the programme are listed below. These are stated as competences the graduates of the programme should have achieved. The graduate of the programme:

- 1) Has a broad perspective and high level of academic and intellectual development, including a profound understanding of a selection of subjects. Typically, he is able to integrate the insights of different disciplines into a coherent view and approach.
- 2) Is competent to do research, in order to acquire new scientific knowledge. He has excellent analytical skills: he can cope with the complexity by unravelling phenomena, systems or problems into sub-phenomena, sub-systems and sub-problems.
- 3) Is competent in designing. The graduate is able to create value in accordance with the predefined requirements and desires. He can combine various perspectives related to engineering, technology, social and natural sciences, as well as circumstantial information, in the design. The design competence is based on excellent synthesis skills: combining elements into a coherent structure that serves a certain purpose. That result can be an artefact, product or process, and also a theory, interpretation or model.
- 4) Is competent in organising and is able to contribute to realistic, functional and effective solutions. The graduate is able to evaluate the results from prototype testing and small-scale experiments for scaling and re-design and is able to plan and organise an effective implementation process.
- 5) Has an academic approach, shown by a systematic and critical way of using theories, models and coherent interpretations. The ATLAS graduate is excellent in generalising and contextualising.
- 6) Has intellectual skills, as shown in his reasoning, reflecting, forming and defending a judgement. The ATLAS graduate has a flexible mind, can transfer skills from one field or application to another, has the overview without losing the eye for detail, and is outstanding in noticing relevance for new situations and adjusting his knowledge and experience accordingly. He takes the lead.
- 7) Is competent in co-operating and communicating with colleagues and others. This competence is based on a sense of responsibility and respect for colleagues and non-colleagues.
- 8) Takes account of the temporal and the social context and has the competence to integrate these insights into his scientific work.
- 9) Behaves in a socially responsible manner and is inclined to take leadership.
- 10) On graduation he is prepared to make a decision about his future and future studies.

The curriculum has the structure as presented in the table below:

Year 1/semester 1	
Theme	Theme with common project (12 EC)
Foundation	Science/Engineering (10 EC)
Foundation	Social Science (5 EC)
Personal Pursuit	Elective (3 EC)
Year 1/semester 2	
Theme	Theme with common project (12 EC)
Foundation	Science/Engineering (5 EC)
Foundation	Social Science (5 EC)

Integration	Integration/Generalisation (5 EC)
Personal Pursuit	Elective (3 EC)
Year 2/semester 3	
Theme	Choice out of two themes (12 EC)
Foundation	Science/Engineering (5 EC/10 EC)
Extension	Social Science (5 EC/10 EC)
Personal Pursuit	Elective (3 EC)
Year 2/semester 4	
Theme	Choice out of two themes (12 EC)
Foundation	Science/Engineering (5 EC/10 EC)
Extension	Social Science (5 EC/10 EC)
Personal Pursuit	Elective (3 EC)
Year 3/semester 5	
Specialisation	International Exchange, Qualification for Master's programme; Minor (10 EC/27 EC)
Extension	Choice in specialisation area (0 EC/17 EC)
Personal Pursuit	Elective (3 EC)
Year 3/semester 6	
Theme	Graduation Assignment; Capstone (20 EC)
Extension	Courses related to the assignment (Capita Selecta) (7 EC)
Personal Pursuit	Elective (3 EC)

New programme in the Netherlands

The programme as presented in the application is new in the Netherlands as it constitutes the first liberal arts, sciences and engineering programme.

New programme for the institution

The programme as presented in the application form is new for the University of Twente. This is the first liberal arts and sciences programme for this institution.

Credits

The programme consists of three years of full-time study for a total of 180 EC.

4 Assessment per standard

This chapter presents the evaluation by the assessment panel of the four standards.

4.1 Intended learning outcomes (standard 1)

The intended learning outcomes of the programme have been concretised with regard to content, level and orientation; they meet international requirements.

Outline of findings

The mission of ATLAS is to provide learning opportunities for the advancement in technology and liberal arts and sciences for the personal benefits of talented and ambitious students. The programme intends to educate the engineers of 2030, these engineers being able, after having completed this programme and after further study and work experience, to address the challenges of complex and large projects and to solve problems related to these projects. After having completed the programme, the graduates are junior engineers who have systems and process capabilities.

The programme management has performed a survey of literature and other programmes in the world in this field of study. So, the programme has, among other things, studied the book of Duderstadt (2008) and has considered programmes of Olin College (United States) and of the Department of Aeronautics and Astronautics of the Massachusetts Institute of Technology. The management of this programme intends to design the programme using the concepts which are present in this literature and these programmes.

The programme management has drafted the intended learning outcomes of the programme (please refer to section 3.3 for a complete overview). The learning outcomes meet the so-called 3TU requirements, which are generally considered to be an appropriate reflection of the Dublin descriptors. These Dublin descriptors reflect the bachelor's level of the programme.

The learning outcomes meet the requirements of specialist engineering programmes. The intended learning outcomes 4 and 9 listed in section 3.3 have been added to specifically target the Liberal Arts & Sciences character of the programme. The programme has these extra two learning outcomes, to distinguish this programme from the specialist engineering programmes.

The programme is meant to be a liberal arts and sciences programme. This implies the programme meeting the requirements thereof. According to these requirements, the programmes are interdisciplinary, the students of these programmes are able to evaluate in a fundamental way personal, social, scientific and technical developments, the students can assess complex problems from different perspectives and the students have learning skills enabling them to analyse different social and scientific positions and to develop a personal problem-solving ability.

The students of this programme should have an attitude conforming to the ATLAS academic and professional code of conduct, the honour code of conduct for ATLAS students and the

code of social conduct. These codes of conduct specify the requirements regarding their attitude and behaviour the students of this programme will have to meet.

Considerations

The panel regards the goal of the programme to educate engineers being able to manage complex and large projects as sound and appropriate. These engineers are different engineers from the more specialist engineers, as they have the ability to address topics from the social sciences as well. The programme has, rightly, taken into account relevant literature and the design of other programmes to specify the aims and the design of the programme.

The panel considers the intended learning outcomes the programme management has drafted to be sound. These learning outcomes not only reflect the competences of the specialist engineering programmes but also the interdisciplinary competences, required for the graduates of this programme.

The intended learning outcomes meet the 3TU requirements and, therefore, the Dublin descriptors, indicating the level of the learning outcomes is the level of a bachelor's programme.

The learning outcomes reflect the learning objectives drafted for liberal arts and sciences programmes in the Netherlands. Therefore, this programme may be regarded as being a liberal arts and sciences programme.

The panel considers the codes of conduct the graduates have to comply with as being valuable for the personal development of the students.

Conclusion

The panel assesses the standard *Intended learning outcomes* (first standard) to be satisfactory.

4.2 Teaching-learning environment (standard 2)

The curriculum, staff and programme-specific services and facilities enable incoming students to achieve the intended learning outcomes

Outline of findings

The programme management has conducted a market research survey, including visits to about 40 secondary schools. The secondary school students who have been interviewed by the programme management have expressed their interest in this programme, mainly because the programme will be broader than a regular science or engineering programme permitting them to keep more opportunities for future study and work open. The programme aims to attract gifted students. These gifted students are not only students with excellent grades in their secondary school but also students who are gifted but, nevertheless, relatively underperformed in these schools.

The influx of these students is expected to come on top of the students already enrolling in the University of Twente. The programme management does not foresee many students

entering the programme who would otherwise have chosen for one of the existing programmes of the university.

The programme management has set the target for the influx of students at 50 students in the first year, increasing to a number of 70 students in the second year, leading to an influx of 100 students in the steady state, from the third year onwards. Half of the incoming students will be Dutch and the other half will come from abroad. The programme management wants to attract a substantial number of female students, in order to increase the number of female students pursuing a career in the engineering and technical sciences. The programme management also expects this to be realistic on the basis of the above mentioned interviews.

The students who are interested to enrol in the programme have to meet a number of prerequisites. Specifically, these students ought to have a good command of English and mathematics, meaning a grade above 7.0 for English and a grade above 7.5 for mathematics. Students coming from abroad have to meet similar prerequisites.

The students have to apply for admission to the programme by means of sending an application form, a letter by the student with his or her motivation and a letter of recommendation of the school. With candidates who are selected the programme management will conduct a face-to-face interview. The ATLAS dean is the one who formally accepts candidates.

The programme management has drafted a series of programme objectives which meet the intended learning outcomes. These programme objectives direct the contents of the courses and the projects. The programme management has drafted a table in which the relations between the learning outcomes of the programme and the programme components have been demonstrated.

In each of the semesters the students will take courses to be taught the various disciplines the programme has been made up of. These disciplines are, on the one hand, engineering and technical sciences, including natural science, design, engineering, engineering science and mathematics. On the other hand the disciplines are social science, including humanities, business and public administration, governance, economics, behavioural science and philosophy. The courses address either engineering and technical science or social science. In the courses other disciplines may be addressed. The courses in the first year, which are all compulsory, cover the fundamentals of the disciplines and provide the students with the orientation of these disciplines. In the second year the courses are meant to be an extension of the knowledge and insights gained in the first year. The third year courses are intended to enable the students to specialise in the major they have chosen.

In the semesters the students, also, will have an interdisciplinary project of, typically, 12 EC. These projects have interdisciplinary subjects (for instance Human movement and Tracers for personal safety) and are meant to lead to the integration of the aforementioned disciplines, thereby achieving the aim of an interdisciplinary programme. In the projects the students consider the subject from different disciplinary perspectives, analyse topics and solve problems in an interdisciplinary manner. There will always be a teacher from the social science and a teacher of the engineering and technical science for the teaching in these projects.

The University of Twente has ample experience with interdisciplinary programmes such as Advanced Technology, Industrial Design, Creative Technology, Industrial Engineering & Management and Biomedical Engineering. A number of teachers involved in the Technology and Liberal Arts & Sciences programme participate in the aforementioned programmes and will bring their experience to this programme.

During each of the six semesters the students devote a part of their study to their own Personal pursuit project. The number of credits of this project is 3 EC per semester, adding up to 18 EC for the project as a whole, being 10 % of the entire curriculum. The students choose the subject of their Personal pursuit project from a wide variety of topics ranging from projects oriented at social work to musical performance. In these projects the students are responsible for relating their extra-curricular activities to the curriculum by defining its learning outcome. The students build their own project around the topic of their choice. They will be required to undertake the activities in the project, reflect upon these activities, link the project to theoretical notions and present a portfolio with an account of the project. The Personal pursuit project the student has chosen has to be presented to the examination board for approval.

The students may make a number of choices in the programme. They are encouraged to compose their own, personalised programme. The students may, of course, choose the subject of their Personal pursuit. From the second year onwards they, also, may choose some of the courses. The students thereby have the chance to influence the relative weight of engineering and technical science and social science. They may make choices resulting in a ratio of engineering and technical science to social science ranging from 1: 1 to 3:1. By making a choice for a number of specific courses the students may prepare for a specific master's programme.

The programme management has listed the literature and other study material to be used in the courses and the projects.

The programme will be managed by the dean and the director of education. The staff core team consists of 10 teachers which together will make up about 3 full-time equivalents. Each of these teachers will contribute at least one day per week to the programme. They will regularly be present in the buildings of the programme. Other teachers will be involved as well. In the steady state the core team will consist of between 16 and 20 teachers. Another 60 to 70 teachers will teach in the programme.

The teachers in the programme will have to meet a number of requirements. They are required to have obtained a basic teaching qualification (in Dutch: BKO), they will have to be able and willing to transcend their own discipline and they will receive extra training to guide gifted students and to lecture in an international setting. This training will qualify them for a senior teaching qualification (in Dutch: SKO).

The didactical concept of the programme is project-led education. This concept implies a student-controlled form of education. To a group of between 4 and 8 students a problem is presented. The students are required to define the problem, to find and pursue a number of problem-solving strategies, to work together and assign tasks to each of the members of the group and to present a number of solutions. The study methods the programme will include are lectures (teaching theory and concepts), tutorials (teaching analytical skills) and workshops (teaching of practical and academic skills).

The student-to-staff ratio for the programme will be 16:1. This ratio may be compared to the ratio of the University of Twente as a whole which is 26:1. For the social sciences programmes of the university the ratio amounts to 30:1, whereas for the technical programmes the ratio is about 20:1.

The study year has been divided into two semesters, each of which has 20 weeks including a block of two weeks. The courses will not be spread over the entire semester but will be given in a relatively short period of time. The examinations immediately follow the courses, with no extra time to prepare for these examinations.

The number of contact hours in the programme is 500 hours in the first year and 420 hours in the second as well as in the third year. These figures lead to about 14 contact hours per week, not counting the extracurricular activities which may include teacher-student contact and not counting the hours of student counselling and the meetings between students and their mentors. If these hours are taken into account, the number of contact hours will amount to about 20 hours per week between teachers and students and another 10 hours per week of contact between students. Furthermore, the contact hours are more intensive than contact hours in other programmes, since the number of students in the class is relatively small.

A typical course of 5 EC will consist of 10 to 12 hours of lectures for the whole group of students (100 students), 20 to 24 hours of tutorials and seminars for groups of 20 to 25 students, 100 hours of self-study and 6 hours for assessments. A typical project of 12 EC will be divided into a part of 8 EC for project work. This part will consist of about 30 contact hours with the tutor, about 60 hours of group work and about 120 hours of hours of study by the individual students. The remaining part of the project (4 EC) is meant for skills training, reflection, team dynamics and guest lectures. In this part the ratio of guided work to individual study is 1:1.

The students are entitled to individual guidance by a mentor during the whole of the programme. This guidance amounts to 0.5 hours per week. Each of the mentors will have 8 to 10 students to guide. The guidance during the Personal pursuit project is about 20 % of the hours spent on these projects. To monitor the progress the students make, each student is required to maintain a portfolio. In this portfolio the students list their results, feedback given to them and personal planning, reflections and outlook. The student and the mentor will regularly discuss the student's progress, using this portfolio.

The programme management will enforce a binding study advice at the end of the first year. If a student by then does not have 60 EC worth of credits, this student is obliged to leave the programme.

The programme will have its own building in the foreseeable future. This building will be on the University of Twente campus. The students will be provided with housing facilities. In addition, the programme has class rooms for small-scale teaching and for project meetings. The University of Twente has laboratory facilities and library facilities which the students may use.

The teaching-learning environment has now been laid out on paper. In some respects reality may be different from the projections. The programme has a system for quality assurance in

place to cope with situations as these. The quality assurance documentation indicates the ATLAS evaluation committee monitoring the students' evaluations and having regular meetings with the students to hear their views on the programme. The ATLAS core team of teachers meets every two weeks to discuss the evaluations as well as other inputs regarding the quality of the programme.

Considerations

The panel considers the target group of gifted students the programme management has identified for this programme to be the right target group. The admission procedure is sound, selecting the students who have the abilities to complete the programme in an orderly way and without delay.

The programme management has ensured the intended learning outcomes to be completely and evenly reflected in the curriculum. The panel feels the concept of the programme to be well elaborated in the curriculum.

The courses of the programme are appropriate in transferring the disciplines which the students need. The theme projects provide an interesting and appropriate structure to implement the interdisciplinary nature of the programme. Still, the projects ought to be elaborated in more detail. The panel, therefore, recommends the programme management to draft the learning objectives of the projects more precisely in order to ensure these to meet one or more of the intended learning outcomes.

The panel considers the Personal pursuit projects appropriate for the students' personal development. These projects reflect the concept of *Bildung*. As these projects are inherently self-directed, the panel advises the programme management to monitor these projects closely. The programme management should, in the opinion of the panel, ensure the Personal pursuit projects meet one or more of the intended learning outcomes of the programme, to ensure that credits are given for the 'learning' and not for the activities. As the students' Personal pursuit projects are a choice of the students themselves who, also, draft their own criteria, linking the project to the learning outcomes seems to be even more important. The panel does not question the willingness and the ability of the programme management to achieve this. The panel applauds the role of the examination board in approving the plans for these projects.

The degree of choice of courses the students have is satisfactory and provides the students with the means to prepare for the master's programme of their preference.

The panel assesses the course material of the programme to be appropriate in terms of quality and level. Nevertheless, the panel encourages the programme management to make certain that the choice of texts is aligned with the learning objectives.

The members of the staff core team the panel has met are all very motivated and enthusiastic teachers. The cohesion of the team is strong, enabling them to execute the programme in the way the programme management envisages. The disciplinary knowledge of the teachers is up to standard. Their didactical abilities meet the requirements of this small-scale, intensive programme. The panel feels the teachers will be able to effectively transfer knowledge and skills to the students in the programme.

This didactical concept of project-led education is well-suited for this programme. Teams of 4 to 8 students have to handle ill-defined situations that they have to redefine into a set of problems for which they conduct research and design solutions. The didactical concept has been elaborated well in the interdisciplinary projects in the curriculum.

The student-to-staff ratio of 16:1 is appropriate for this small-scale programme and compares favourably to the ratios in the other programmes of the university. The number of contact hours is adequate as well. The study guidance as represented in the mentoring system is good.

The building and the material facilities of the programme enable the staff and students to organize the learning processes effectively.

The panel regards the programme to be very ambitious with respect to the workload for its staff. The panel would advise the programme management to be careful in adjusting the programme to the resources available and to identify the priorities. One of the examples of this may be found in the study guidance. If the study guidance by the mentor takes about 0.5 hours per week per student, with 300 students in the programme (steady state) this would amount to 150 hours per week. The panel questions the feasibility of the study guidance in this form, recommending the programme management to look for less labour-intensive methods.

The panel has observed awareness on the part of the programme management and the teachers to adjust the plans if the real situation would prove to differ in important aspects from the plans. The programme management and the staff are well aware of the process they are in and the problems they may encounter. The panel, therefore, is confident the programme management will be able to execute the programme along the lines now drawn.

Conclusion

The panel assesses the standard *Teaching-learning environment* (standard 2) as being satisfactory.

4.3 Assessment (standard 3)

The programme has an adequate assessment system in place.

Outline of findings

The programme has an examination board. This board will operate in accordance with the applicable Dutch law. The examination board determines the academic progress made by the students in the programme, approves the grades of the students for the examinations they have taken, appoints the examiners and the members of the assessment committee for the graduation assignment and awards the title to the students. The board has three full professors as their members and meets at least four times per year.

The assessment of the courses includes assignments, written examinations as well as oral examinations. Some of these examinations may be half way the course. The projects are assessed on the basis of the project report. In addition, each of the students, individually, has to present part of the project results and will be, again individually, be questioned on the project and the project results. The assessment procedure is meant to ensure each of the

students has achieved the learning objectives of the project. In the workshops the practical skills of the students are assessed. The Personal pursuit project will be assessed using the evidence the student has assembled, including the assessment by an external teacher. The final assessment will be performed by a staff member of the programme.

The programme management intends to assess the examinations and assessments before they will be taken by the students. The examinations are not only meant to assess the progress the students have made in the programme but also to provide feedback to the students. Results of examinations will only be approved in extraordinary circumstances.

For a theoretical course one assessor examines the students. The reports of the projects and the oral presentations by each student of the team will be assessed by at least two assessors. The programme management intends to evaluate draft versions of all examinations and assessments by a second assessor.

In the final semester the students will complete their Graduation project. This project may be an individual or a group project. The topic to be addressed in this project ought to be the logical outcome of the courses the student has taken and the projects the student has executed. The project will normally be completed in a university laboratory or company in the Netherlands. The assessment procedure of the project ensures most of the learning outcomes to be met. The Graduation project will be assessed by two teachers. The assessment procedure includes a written report, a presentation and a defence in a closed session.

Graduates of the programme will have the competences to enter the labour market. However, they will be advised to continue their studies in a master's programme. The programme management estimates 1/3 of the students to continue their studies at the University of Twente and 2/3 to do their master's at another university. A number of students will proceed to obtain a PhD. This, however, will not be the majority.

The graduates of the programme are broad-based engineers with a profile different from the traditional specialist engineer. The graduates may take courses preparing them for specific master's programmes. So, the programme management has indicated the courses students should take in the second and third year to be able to pursue their studies in master's programmes like Mechanical Engineering or Psychology.

During the site visit directors of education of a number of selective high level master's programmes have indicated students who have completed this programme to be suited to be admitted to their master's programmes.

The programme management expects about 20 % of the students to drop out after the first year. The programme management believes this drop-out rate to be feasible, mainly because of the strict selection procedure for incoming students.

Considerations

The examination board of the programme will work in accordance with applicable Dutch law and is an important safeguard for the quality of the assessments in the programme as well as for the level of the graduates of the programme.

The assessment methods the programme management intends to adopt conform to the learning objectives of the courses and the projects, are very well elaborated and are appropriate to assess the individual contribution of students in the case of group projects.

The panel is positive about the intention of the programme to have all examinations reviewed by a second examiner. The panel felt, nevertheless, these plans not yet fully elaborated and would advise the programme management to work out these plans in more detail. Especially, the plans for the assessment of the personal pursuit projects need to be formulated thoroughly.

The panel considers the assessment of the Graduation project by two assessors and by means of a report as well as an oral defence to be adequate. When this project is a group project, the assessment procedure enables the assessors to identify and rightly assess the individual performance of each of the students.

The panel is confident the graduates of the programme will have the capacities to be admitted to a number of demanding master's programmes and will, therefore, be able to pursue their careers to become the engineers with the broad perspective the programme management wants to educate. The choices for courses the students can make allow them to prepare for a number of interesting master's programmes. The panel agrees with the programme management to advise the students not to enter the labour market upon completion of this bachelor's programme.

Conclusion

The panel assesses the standard Assessment (standard 3) to be satisfactory.

4.4 Graduation guarantee and financial provisions (standard 4)

The institution guarantees students that they can complete the entire curriculum and makes sufficient financial provisions available.

Outline of findings

In the information dossier the programme management has confirmed that students entering the programme will be given the opportunity to complete their studies.

The programme management has drawn up a budget for the programme. The budget has been calculated on the basis of 100 incoming students in the steady state, a projected drop-out rate of 20 % in the first year and a student-to-staff ratio of 16:1. The staff to be involved in the programme will mainly come from the existing programmes of the University of Twente. Some 20 % of the teachers will be recruited from outside the university.

On top of the regular tuition fee in the Netherlands (€ 1,750 per year) the students will be charged an extra tuition fee of € 1,700 per year, leading to a total fee of about € 3,500 per year. The main revenues of the programme will come from funding by the Dutch government. The costs for the development and the execution of the programme are estimated to be about € 3,000,000 per year. Overhead costs of the programme will be borne by the Faculties which participate in the programme. The budget figures show a loss in the years to come. The University of Twente is prepared to finance the investments in the

programme in the first years and to cover the losses in the years to come for an amount of about € 500,000 per year.

Considerations

The panel considers the guarantee by the University of Twente that students will be able to complete the programme to be appropriate.

The panel, also, considers the budget the programme management has drawn up to be realistic. The funding by the Faculties and the University of Twente constitutes important financial safeguards, giving the programme ample opportunity to develop and execute the programme in the way the programme management has envisaged. The panel regards the financial basis of the programme to be sound.

Conclusion

The panel assesses the standard Graduation guarantee and financial provisions (standard 4) to be satisfactory.

5 Overview of the assessments

The panel presents their assessments for each of the standards and for the programme as a whole, as outlined in chapter 4, in the following table.

Standard	Assessment
1 Intended learning outcomes	Satisfactory
2 Teaching-learning environment	Satisfactory
3. Assessment	Satisfactory
4 Graduation guarantee and financial provisions	Satisfactory
Conclusion	Satisfactory

Annex 1: Composition of the panel

- Prof. dr. Josee van Eijndhoven (The Netherlands), chair, is retired Professor of Sustainability Management, Erasmus University Rotterdam; She has a PhD in the Natural Sciences from Leiden University in the Netherlands. Her original education was in chemistry. She is a member of the Netherlands Academy for Technology and Innovation. She has worked at Utrecht University in the area of Science and Society. She conducted projects on risk assessment and risk communication around the chemical industry, for the EU and several Dutch ministries. From 1991-2001 she was the director of the Rathenau Institute in The Hague. From 2001-2006 she was the President of the Executive Board of Erasmus University Rotterdam.
- Prof. dr. Mark Somerville (United States of America), member, Professor of Electrical Engineering and Physics, Olin College, Boston, USA. He joined Olin College from Vassar College, where he had been an Assistant Professor of Physics since 1998. He holds M.S. and Ph.D. degrees in electrical engineering from MIT, as well as an M.A. (first class honors) in physics from Oxford University. He did his undergraduate work at the University of Texas at Austin, where he earned a bachelor of science (highest honors) in electrical engineering as well as a bachelor of arts (special honors) in liberal arts (English concentration). His academic honors include the Joint Services Electronics Program Doctoral and Post Doctoral Fellowship, the Office of Naval Research Graduate Fellowship, and the Rhodes Scholarship.
- Dr. Cis van den Bogaert (Belgium), member, received a PhD in elementary particle physics from the University of Antwerp. He worked at the Belgian Consumer Association in the unit for comparative quality assessment and at the Flemish Interuniversity Council (VLIR) as project leader for educational professionalization. He taught and organized bridging courses for freshmen and coordinated tutoring activities at the University of Antwerp. He is the secretary of the university's Education Council and heads the Department of Education in the university's central administration. The tasks of his department are situated in the domains of educational policy, lifelong learning, doctoral schools, quality assurance and educational innovation, education and examination regulations, and educational administration (study programmes, enrolment, diplomas).
- Drs. Marjolijn Vermeulen (The Netherlands), member, was trained as a physicist at the Radboud University Nijmegen. She was a board member of the Interstedelijk Studenten Overleg (ISO). She worked at Platform Bèta Techniek as a programme manager for several projects aimed at stimulating excellence in higher education (Sirius) or the increase of the intake in science and technology programme. She was Policy Advisor in Institutional development at Erasmus University Rotterdam and is currently working at Radboud University Nijmegen as liaison officer for external relations. In 2012, she participated in the NVAO-panel that assessed applications for the Distinctive feature 'Small-scale and intensive education'.

- Esther van Duin, MSc (The Netherlands), student member, has a Bachelor's degree in Psychobiology at the University of Amsterdam and graduated from the Research Master Brain and Cognitive Sciences-Neuroscience. She is currently working as a research-assistant in genetics at the Psychiatry Department of the Amsterdam Medical Center (AMC). She has been selected as member of the Nationale Denktank for 2012, a think tank of young professional and intellectuals who advise on national and global societal issues and challenges.

Annex 2: Schedule of the site visit

The panel undertook a site visit on 15 June 2012 as part of the external assessment procedure regarding the Academic bachelor programme Technology and Liberal Arts & Sciences submitted by the University of Twente. The schedule of the visit was as follows.

- | | |
|---------------|---|
| 08.30 – 09.00 | Arrival of panel and deliberations (internal) |
| 09.00 – 09.30 | Meeting with representatives of University management team and programme management <ul style="list-style-type: none">▪ Prof. E. Brinksma, rector of University of Twente▪ Prof. T. Mouthaan, dean of Faculty of Electrical Engineering, Mathematics and Computer Science, chair ATLAS Board▪ K. van Ast MSc, vice-president of the Executive Board |
| 09.30 - 10.30 | Meeting with programme management <ul style="list-style-type: none">▪ Prof. J. Herek, ATLAS dean▪ K. Ruijter MSc, programme manager▪ L. Krab PhD, project manager |
| 10.30 – 10.45 | Panel deliberations (internal) |
| 10.45 – 11.45 | Meeting with representatives of the Programme Council and Curriculum Development Group <ul style="list-style-type: none">▪ Prof. J. Herek, chair Programme Council and ATLAS dean▪ Prof. M. Elwenspoek, Programme Council▪ Prof. A. Need, Programme Council▪ Prof. P. Brey, Programme Council and chair ATLAS Examination Board▪ W. Wits PhD, Programme Council▪ S. Van Balen BSc, student member Programme Council▪ F. Janssen BSc, student member Programme Council▪ J. Flokstra PhD, Curriculum Development Group |
| 11.45 – 13.00 | Lunch and panel deliberations (internal) |
| 13.00 – 13.30 | Visit to the ATLAS programme's prospective premises |
| 13.30 – 14.30 | Meeting with teaching staff <ul style="list-style-type: none">▪ W. Wits PhD▪ K. Visscher PhD▪ R. Van Damme PhD▪ A. Beldad PhD▪ Prof. M. Boon▪ P. Wilhelm PhD▪ J. Homminga PhD▪ M. van der Hoef PhD |

- 14.30 – 15.15 Meeting with representatives of the programmes where ATLAS graduates may continue their studies
- J. Flokstra PhD, programme director Nanotechnology, member Curriculum Development Group
 - Prof. A. de Boer, programme director Mechanical Engineering, member ATLAS Examination Board, member Curriculum Development Group
 - Prof. S. Kuhlmann, programme leader Twente Graduate School Programme GKI, member Programme Council, member ATLAS Examination Board
 - H. Boer PhD, programme director Psychology
 - M. Letteboer PhD, programme director Applied Physics
 - Prof. V. Subramaniam, scientific director MIRA, Institute for Biomedical Technology and Technical Medicine
 - K. Eijkel PhD, director Kennispark
- 15.15 – 15.45 Panel deliberations (internal)
- 15.45 – 16.00 Second Meeting with programme management
- Prof. J. Herek, ATLAS dean
 - K. Ruijter MSc, programme manager
- 16.00 – 16.45 Panel deliberations (internal)
- 16.45 – 17.15 Close of visit with presentation of preliminary findings by the panel's chair

Annex 3: Documents reviewed

Programme documents presented by the institution before the site visit

- Report for application for initial accreditation of the new Bachelor of Science degree (BSc) programme, including appendices, 25 January 2012
- Complementary information on ATLAS, on request of the NVAO panel, 4 June 2012

Documents made available during the site visit

- Examination Regulations by the ATLAS Examination Board
- Verwachte instroomvolume in University College (market research document), 2011
- Minutes of Programme Council ATLAS
- Internal Quality Assessment of ATLAS
- Curriculum vitae staff ATLAS
- Study Materials (books)

Annex 4: List of abbreviations

EC	European Credits
ECTS	European Credit Transfer Scheme
NVAO	Accreditation Organisation of the Netherlands and Flanders

The panel report has been ordered by NVAO for the initial accreditation of the academic bachelor programme Technology and Liberal Arts & Sciences of the University of Twente.

Accreditation Organisation of the Netherlands and Flanders (NVAO)

Parkstraat 28

P.O. Box 85498 | 2508 CD DEN HAAG

T 31 70 312 23 30

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Application number: 000227

Besluit Besluit strekkende tot een positieve beoordeling van een aanvraag toets nieuwe opleiding van de opleiding wo-bachelor Technology and Liberal Arts & Sciences van de Universiteit Twente

Gegevens

datum	Instelling	: Universiteit Twente
18 juli 2012	Opleiding	: wo-bachelor Technology and Liberal Arts & Sciences
onderwerp	Variant	: voltijd
Besluit	Locatie	: Enschede
Toets nieuwe opleiding	Studieomvang (EC)	: 180
wo-bachelor	Datum macrodoelmatigheidsbesluit	: 30 september 2011
Technology and Liberal Arts & Sciences van de Universiteit Twente	Datum aanvraag	: 30 januari 2012
(000227)	Datum locatiebezoek(en)	: 15 juni 2012
ons kenmerk	Datum paneladvies	: 10 juli 2012
NVAO/20122387/LL	Instellingstoets kwaliteitszorg	: aangemeld en geaccepteerd voor het invoeringsregime (artikel 18.32c van de WHW)
bijlage		

Beoordelingskader

Beoordelingskader voor de beperkte toets nieuwe opleiding van de NVAO (Stcr. 2010, nr 21523).

Bevindingen

De NVAO stelt vast dat in het paneladvies deugdelijk en kenbaar is gemotiveerd op welke gronden het panel de kwaliteit van de opleiding voldoende heeft bevonden.

Samenvatting bevindingen en overwegingen panel.

The Accreditation Organisation of the Netherlands and Flanders (NVAO) has received a request for an initial accreditation procedure, including programme documents, regarding the proposed academic bachelor programme Technology and Liberal Arts & Sciences of University of Twente. In order to obtain an informed advice about the quality of the proposed programme, the NVAO convened an expert panel. The panel has studied the programme's Information file and listed a series of questions which the programme has answered in the run-up to the site visit. During the site visit, the panel met with representatives of the university, programme management and teaching staff. Below, the panel presents the considerations which have led to the assessment.

The panel regards the goal of the programme to educate engineers with a broad perspective as appropriate. These engineers will be educated to be able to address topics from the social sciences as well. The intended learning outcomes of the programme are sound. These not only reflect the competences of the specialist engineering programmes but also the interdisciplinary competences, required for the graduates of this programme. The intended learning outcomes meet the 3TU requirements and, therefore, the Dublin descriptors, indicating the level of the programme is a bachelor's level. The learning outcomes reflect the learning objectives drafted for liberal arts and sciences programmes. The panel considers the codes of conduct the graduates have to comply with as being valuable for their personal development.

The target group of gifted students is the right target group for this programme. The admission procedure is sound, selecting the students who have the abilities to complete the programme. The intended learning outcomes are completely and evenly reflected in the curriculum. The concept of the programme is well elaborated in the curriculum. The courses are appropriate in transferring the disciplinary knowledge which the students need. The theme-related projects provide an interesting structure to implement the interdisciplinary nature of the programme. Still, the projects ought to be elaborated in more detail. The panel recommends to draft the learning objectives of the projects more precisely in order to ensure these to meet the intended learning outcomes. The panel considers the Personal pursuit projects appropriate for the students' personal development. These projects reflect the concept of *Bildung*. As these projects are inherently self-directed, the programme management should ensure the Personal pursuit projects to meet the intended learning outcomes. The panel does not question the willingness and the abilities of the programme management to achieve this. The panel applauds the role of the examination board in approving the plans for these projects. The degree of choice of courses the students have allows them to prepare for the master's programme of their preference. The panel assesses the course material to be appropriate but encourages the programme management to make certain that the choice of texts is aligned with the learning objectives.

The members of the staff core team are all very motivated and enthusiastic teachers. The cohesion of the team is strong. The disciplinary knowledge of the teachers is up to standard. Their didactical abilities meet the requirements of this small-scale, intensive programme. The panel feels the teachers will be able to effectively transfer knowledge and skills.

The didactical concept of project-led education is well-suited for this programme. Teams of 4 to 8 students have to handle ill-defined situations which they have to redefine into a set of

Pagina 3 van 7 problems for which they conduct research and design solutions. The student-to-staff ratio of 16:1 is appropriate for this small-scale programme. The number of contact hours is adequate as well. The study guidance as represented in the mentoring system is good. The building and the material facilities of the programme enable the staff and students to organize the learning processes effectively.

The panel regards the programme to be very ambitious for the presently available staff, especially in time consuming elements such as the personal pursuit and mentoring. The panel would advise the programme management to adjust the programme to the resources available. The panel has observed awareness on the part of the programme management and the teachers to adjust the plans if the real situation would prove to differ in important aspects from the projections. The panel, therefore, is confident the programme management will be able to execute the programme along the lines now drawn.

The examination board of the programme is an important safeguard for the quality of the assessments as well as for the level of the graduates of the programme. The assessment forms conform to the learning objectives of the courses and the projects, are well elaborated and are appropriate to assess the individual contribution of students in the case of group projects. The panel is positive about the intention of the programme to have the examinations and the assessments reviewed by a second teacher. The panel would, nevertheless, advise the programme management to work out these plans in more detail. The assessment of the Graduation project by two assessors and by means of a report as well as an oral defence is adequate. When this project is a group project, the assessment procedure enables the assessors to identify and rightly assess the individual performance of each of the students. The panel is confident the graduates of the programme will have the capacities to be admitted to a number of demanding master's programmes and will, therefore, be able to pursue their career to become the engineers with the broad perspective the programme management wants to educate. The choices for courses the students can make enable them to prepare for a number of interesting master's programmes. The panel understands that the programme management advises the students to pursue further studies in a challenging master's or graduate programme and not to enter the labour market upon completion of this bachelor's programme.

The guarantee by the University of Twente that students will be able to complete the programme is appropriate. The budget the programme management has drawn up is realistic. The funding by the Faculties and the University of Twente constitutes important financial safeguards, giving the programme ample opportunity to develop and execute the programme in the way the programme management has envisaged. The panel regards the financial basis of the programme to be sound.

The panel acknowledges the intention of the programme to be registered in the Croho domain Sectoroverstijgend, subonderdeel Onderwijs/Landbouw en natuurlijke omgeving/Natuur/Techniek/Gezondheid and the motivation supplied in the information dossier. In view of the multi- and interdisciplinary nature of the programme, which has been established also during the initial review, the panel accepts the programme's intention and advises the NVAO that the programme be registered in the Croho domain mentioned above.

In response to the question put to the panel by the NVAO whether the addition 'Technology' to the name of the programme is appropriate, given that all other University Colleges in the Netherlands are called 'Liberal Arts and Sciences', the panel regards the name Technology

Pagina 4 van 7 and Liberal Arts & Sciences a good representation of the distinctive nature of the programme within the field of Liberal Arts and Sciences programmes in the Netherlands. It advises against a shortening of the name to 'Liberal Arts & Sciences'.

Given these considerations, the panel advises the NVAO to take a positive decision with regard to the quality of proposed academic bachelor programme Technology and Liberal Arts & Sciences of University of Twente.

Aanbevelingen

De NVAO onderschrijft de aanbevelingen van het panel om:

- de samenhang tussen projecten en de leerdoelen van de opleiding concreet uit te werken;**
- toe te zien op een zorgvuldige inpassing van Personal pursuit projecten in de leerdoelen van de opleiding en een passende beoordeling van de uitkomsten van de projecten.**

Pagina 5 van 7 **Besluit**

De NVAO besluit de aanvraag Toets nieuwe opleiding wo-bachelor Technology and Liberal Arts & Sciences van de Universiteit Twente positief te beoordelen. Bij e-mail van 18 juli 2012 heeft het college van bestuur van de gelegenheid gebruikt gemaakt om te reageren. Dit heeft geleid tot enkele tekstuele aanpassingen.

Graad: Bachelor of Science.

Gelet op het bepaalde in artikel 5a.11, vijfde lid, van de WHW in verbinding met artikel 3.1 van het Uitvoeringsbesluit WHW 2008 acht de NVAO onderdeel Sectoroverstijgend, subonderdeel Onderwijs / Landbouw en natuurlijke omgeving / Natuur / Techniek / Gezondheid van het Croho-register passend voor de opleiding.

Van kracht tot en met: 17 juli 2015.¹

Den Haag, 18 juli 2012

Nederlands-Vlaamse Accreditatieorganisatie



Lucien Bollaert
(bestuurder)

Tegen dit besluit kan op grond van het bepaalde in de Algemene wet bestuursrecht door een belanghebbende bezwaar worden gemaakt bij de NVAO. De termijn voor het indienen van bezwaar bedraagt zes weken.

¹ Gelet op het bepaalde in artikel 18.32c, derde lid, van de Wet op het hoger onderwijs en wetenschappelijk onderzoek (Wet WO) bedraagt de geldigheidsduur van de accreditatietermijn van de opleiding maximaal drie jaar zolang de instelling nog niet beschikt over een positieve instellingstoets kwaliteitszorg. Zodra de instellingstoets is verkregen, wordt de accreditatietermijn verlengd naar zes jaar.

Pagina 6 van 7 **Bijlage 1: Schematisch overzicht oordelen panel:**

Onderwerp	Standaarden	Oordeel
1 Beoogde eindkwalificaties	De beoogde eindkwalificaties van de opleiding zijn wat betreft inhoud, niveau en oriëntatie geconcretiseerd en voldoen aan internationale eisen	V
2 Onderwijsleeromgeving	Het programma, het personeel en de opleidingsspecifieke voorzieningen maken het voor de instromende studenten mogelijk de beoogde eindkwalificaties te realiseren	V
3 Toetsing	De opleiding beschikt over een adequaat systeem van toetsing	V
4 Afstudeergarantie en financiële voorzieningen	De instelling geeft aan studenten de garantie dat het programma volledig kan worden doorlopen en stelt toereikende financiële voorzieningen beschikbaar	V
Algemene conclusie		V

V = voldoende O = onvoldoende

Pagina 7 van 7 **Bijlage 2: Samenstelling panel**

- Prof.dr. J.C.M. van Eijndhoven, (voorzitter) emeritus hoogleraar in Sustainability Management aan de Erasmus Universiteit Rotterdam;
- Prof.dr..Mark Somerville, (lid), Professor of Electrical Engineering and Physics aan Olin College, Boston, USA en Associate Dean for Faculty Affairs and Research aldaar;
- Dr. C. van der Bogaert, (lid), fysicus en Departementshoofd van het Departement Onderwijs van de Universiteit van Antwerpen;
- Drs. M.M. Vermeulen, (lid), natuurkundige en beleidsmedewerker Institutional Development Office van de Erasmus Universiteit Rotterdam;
- E. van Duin MSc, (student-lid), in 2012 afgestudeerd aan de Research Master Brain and Cognitive Sciences-Neuroscience aan de Universiteit van Amsterdam.

Het panel werd bijgestaan door dr. Thomas de Bruijn, beleidsmedewerker NVAO, procescoördinator en drs. W.J.J.C. Vercouteren RC, extern secretaris.

**Academic bachelor programme
Technology and
Liberal Arts & Sciences
University of Twente**

10 July 2012

Distinctive feature 'Small-scale and intensive education' Panel report

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1 Procedure

On 1 February 2012 the NVAO received from the University of Twente the request for an initial accreditation procedure of the academic bachelor programme Technology and Liberal Arts & Sciences as well as for the Distinctive feature of 'Small-scale and intensive education'. The NVAO composed an international panel of experts to advise on both applications. This panel report deals with the second part, the Distinctive feature 'Small-scale and intensive education'. A separate panel report is provided for the initial accreditation of the programme. The panel consisted in both cases of:

- Prof. dr. Josee van Eijndhoven (The Netherlands), chair, retired Professor of Sustainability Management, Erasmus University Rotterdam;
- Prof. dr. Mark Somerville (United States of America), member, Professor of Electrical Engineering and Physics, Olin College, Boston, USA;
- Dr. Cis van den Bogaert (Belgium), member, physicist and Head of the Department of Education, University of Antwerp;
- Drs. Marjolijn Vermeulen (The Netherlands), member, Policy Advisor in Institutional Development, Erasmus University Rotterdam;
- Esther van Duin, MSc (The Netherlands), student member, graduated from the research master programme Brain and Cognitive Sciences-Neuroscience of the University of Amsterdam.

The panel was aided by drs. W.J.J.C. Vercouteren RC, external secretary. Dr. Th. de Bruijn, policy advisor NVAO, coordinated the application procedure.

The application file consisted of a main document with the title '*Argument for Special feature "Small-scale and intensive education"*' supplied in Dutch and English. The application refers to the application file for the initial review entitled: '*Report for application for initial accreditation of the new BSc degree programme Technology and Liberal Arts & Sciences*'. The panel received the documents on paper and in digital format. On 16 May 2012 the panel discussed the dossier and defined a request for some additional information. The panel also decided on the agenda of the site visit to the ATLAS programme. The institution was informed of the request for additional information. This information was received by the NVAO on 5 June 2012,

The site visit took place on 15 June 2012 at the University of Twente in Enschede. The programme of the site visit is included in appendix a of this report. The panel formulated its preliminary conclusions per standard immediately after the site visit. These are based on the findings of the site visit and on the assessment of the programme documents and oral exchange. On 3 July 2012, the draft version of this report was finalised taking into account the available information and relevant findings of the assessment. Where necessary the panel corrected and amended the report. The chair of the panel and the secretary finalised the report on 10 July 2012.

1.1 Panel report

The report gives a short introduction of the programme in section 2. Section 3 presents findings and considerations for each of the standards, leading to an assessment of the standards and of the application as a whole.

2 Description of the programme

2.1 General characteristics

Institution	University of Twente
Programme	Technology and Liberal Arts & Sciences
Level	bachelor
Orientation	academic
Grade	Bachelor of Science
Location	Enschede
Variant	fulltime
Croho domain	(in Dutch:) Sectoroverstijgend; subonderdeel Onderwijs/landbouw en natuurlijke omgeving/natuur/techniek/gezondheid

2.2 Profile of the programme

The academic bachelor programme Technology and Liberal Arts & Sciences is to be part of the new academic institution ATLAS, the University College of the University of Twente, co-ordinated by the Faculty of Electrical Engineering, Mathematics and Computer Science. The dean of this Faculty is the chair of the ATLAS Board.

With the ATLAS programme, the University of Twente envisages to offer a Liberal Arts and Sciences programme oriented towards the nexus between society and technology. It has a clear academic orientation and prepares for admission to relevant Master's programmes, or for occupations that require a general academic degree.

The mission of the programme is related to the notion that the limits of planet Earth and its resources are becoming visible. The various scarcities that arise require solutions that cut through the borders of traditional disciplines in science, engineering and social science. ATLAS intends to educate the 'Engineer of 2030'. It targets talented and motivated students and presents them a broad programme that combines the technical and the social sciences.

The combination of technology in a social environment fits the University of Twente's focus on 'High Tech, Human Touch'. This balance is reflected in the thematic structure of the programme, which is aligned according to the so-called 'big challenges'. ATLAS students live on campus, surrounded by educational, cultural and sports facilities.

3 Assessment

This assessment is based on section 7.3 of the NVAO accreditation framework, entitled "Bijzonder kenmerk kleinschalig en intensief onderwijs" of the Beoordelingskader accreditatiestelsel hoger onderwijs (Stcrt. 2012, nr. 4962). For small-scale, intensive and residential programmes (hereinafter referred to as: small-scale and intensive), and for such courses of study that fall within a programme, under certain conditions the institution's board can select students and in combination with this charge tuition fees that are higher than those set down by law for standard programmes. The Minister of Education, Culture and Science must grant approval for this. The Accreditation Organisation of the Netherlands and Flanders (NVAO) advises the Minister on granting approval in accordance with Articles 6.7, 6.7a, 6.7b and 6.7c of the Dutch Higher Education and Research Act (WHW).

The assessment of an application concerns eight standards, which are concordant with the standards of the regular accreditation framework, but present a specific elaboration on the regular standards.

- A: Intended learning outcomes;
- B: Relationship between the goals and content of the programme;
- C: Structure and didactic concept;
- D: Intake;
- E: Quality of staff;
- F: Number of staff;
- G: Available facilities;
- H: Level realised.

The assessment is based on the proposal put forward by the institution as documented in the application file and the comments made during the site visit. The institution should allow NVAO, on a one-off basis, to assess whether or not the ambitions (on which the conclusion of the assessment is to a large degree based) have been met (practice-based assessment by NVAO). For that reason, standard H: Level realised will be assessed prospectively based on the ambitions of the programme. The panel assesses each of the standard as either satisfactory or non satisfactory with a qualified judgment. The panel also assesses the whole application as either satisfactory or non satisfactory with a qualified judgment.

3.1 Standard A: Intended learning outcomes

The intended learning outcomes are not only aimed at achieving a high level in the relevant academic discipline and/or professional practice, but also have a broader aim: to train socially skilled and initiative-rich scholars and/or professionals with a wide interest in social developments and issues within a multidisciplinary and/or interdisciplinary context.

Outline of findings

According to the application report of the ATLAS programme, students learn to tackle the grand challenges of tomorrow by working on multidisciplinary and interdisciplinary perspectives and approaches. An important principle for ordering the thematic context of the programme is the concept of project-led education. In each project a 'challenge' is looked at from different disciplinary angles, and assessed in various dimensions: does it affect an individual or the global society, is it a problem on nano- or giga-scale?

The programme builds a sound understanding of technology and technological development, as well as a correct comprehension of the relevant social, economic, cultural, ethical and political context. It also encourages a strong interaction between these diverse perspectives. Teaching is shared in each thematic component between a science or engineering and a social sciences teacher. Key elements of the programme are learning how to design, combine and integrate knowledge and insights from various disciplines while considering differences in values and attitudes.

The learning outcomes mention a broad perspective and a high level of intellectual development; research, design and organizational competences; skills in communicating and co-operating; awareness of the social context; socially responsible behaviour and an inclination for leadership, and a vision for a future career. The programme prepares students also for admission to selective graduate programmes of high level. During the site

visits the Directors of Education of a number of Master's programmes of the University of Twente confirm that they deem ATLAS students fit for admission into their programmes.

Considerations

The panel considers that the intended learning outcomes of the ATLAS programme are aimed at achieving a high academic level as well as a broad awareness and knowledge of the application of technology in the societal context. It also recognizes that elements in the programme, such as the Personal pursuit, assist in broadening its scope beyond that of a regular programme. The intended learning outcomes of ATLAS testify to the inter- and multidisciplinary nature of the programme, which is also worked out convincingly in the concept of the thematic projects, based on 'big challenges'.

The panel is satisfied with the learning outcomes as specified in the dossier and in the conversation with the teachers and programme managers. It recommends to specify in greater detail how the various projects connect with the learning outcomes and how they are coherent with the thematic and disciplinary learning lines in the programme. The panel also advises the programme to specify in greater detail what they consider to be a social responsible student and how this outcome will be achieved. This is important to safeguard that each of the learning outcomes will be realized. The panel is confident, given the development of the programme at the moment of its site visit that this will be achieved in the further preparation.

Conclusion: the panel assesses this standard as satisfactory.

3.2 Standard B: Relationship between the goals and content of the programme

The content of the programme is inseparably connected to relevant extra-curricular activities, which ensures a high level and broadening of interests as set down in the intended learning outcomes.

Outline of findings

The panel has seen a detailed elaboration of the various ATLAS learning outcomes and the programme objectives. The panel sees that the first year is common for all students and consists of a broad orientation in which the domain 'Engineering in a societal context' is addressed as a single coherent field of study. During the second year students can partly direct the programme according to their own choices and choose between an emphasis on either social sciences or engineering. On average the ratio of the study load of social sciences to that of engineering will be one to two, with a minimum of one to three and a maximum of one to one, depending on the options chosen.

Besides the general orientation of the programme towards the societal context of technology, ATLAS has opted for a link between the curriculum and extra-curricular activities in the Personal pursuit, which comprises 10% of the 180ec curriculum. Students can choose to take personal interest or talents as focus of the Personal pursuit and build a 'curriculum' around it. They will undertake extracurricular activities in connection with the Personal pursuit, such as extra hours on training their talents, development projects in society, studying music or learning a foreign language.

The student selects a topic for this element in consultation with his or her tutor and defines the learning outcome for the project. Each package for the Personal pursuit has to be approved by the Examination Board before it can be awarded with ec's. The programme intends to embed the Personal pursuit also in shared extracurricular campus activities

organized in the evenings. Other possible extracurricular activities coupled to this programme are the 'honours programme' and the 'excellence stream' in the context of the regular Bachelor programmes of the university.

Considerations

The panel is convinced that the Personal pursuit provides a valuable and valid way of connecting the curriculum and extra-curricular activities. In the practical implementation attention has to be paid to the way a personal project can be connected with one or more learning outcomes in order to prevent the impression that credits are awarded for extracurricular activities as such. The panel has seen that the programme management is aware of this problem. The fact that the Examination Board has to approve of the projects for the Personal pursuit gives the panel assurance with regards to the academic level and content value of this element. It has based this on its conversation with members of the Examination Board of ATLAS who have sufficient expertise in this domain.

The panel considers that the combination of social science and technology throughout the curriculum and the theme-oriented structure ensures that the high level and broad orientation of the learning outcomes will be realized for each student. It considers that the proposed Personal pursuit of 18ec provides ample room for the broadening of interests defined in the learning outcomes.

Based on the proposal that was assessed the panel is convinced that the programme will in its implementation meet the requirements for this standard.

Conclusion: the panel assesses this standard as satisfactory.

3.3 Standard C: Structure and didactic concept

The concept of the programme is aimed at creating an academic and/or professional community. Key terms are small-scale and intensively organised education, leading to a high number of hours of face-to-face teaching, close involvement between students and teachers and between students among themselves and socially relevant extra-curricular activities.

Outline of findings

The panel observes that the project-led educational concept makes that students will work together in project-teams of about 4-8 students. The foundational courses will take place in lectures of 100 students, accompanied by smaller group sessions of 20-25 students to allow the use of more active learning techniques. ATLAS students will have approximately 14 contact hours, but this concerns teaching with a much higher level of intensity than in regular programmes. Students are expected to be eager and have more interaction with their teachers during contact hours.

Students will have contact with their tutors and supervisors during approximately 20 hours per week and have a further 10 hours of weekly mutual contact. They will spend almost all their study hours in the ATLAS building. The teaching is built around the tasks and roles in the thematic projects and is small-scale and highly contact-intensive.

ATLAS requires its students to live as a community on campus at least during the first two years. This means that their interaction will extend beyond the curricular activities. They will cook and eat together, attend presentations and participate in discussions. This will broaden the students' perspective and given the international composition of the cohort, acquaint them with diversity of all sorts. Depending on the way individual students will choose to fill in

their Personal pursuit project, this may also involve activities in the community of students or joined societal activities.

Considerations

The panel is convinced that the project-led educational concept encourages small-scale and intensive work forms. It is pleased that the programme has high ambitions towards building a community of tutors, supervisors and students in the project. The number of study hours is high, which ensures the intensity of the programme. The panel has some reservations as to whether the intended level of intensity in the guidance (0,5 hours per week per student) and tutoring and in the building of a community will be sustainable given the size of the core team. It expects that a trade-off will have to be made between the availability of the staff and the intensity of the guidance and the community building. The panel is confident that a manageable degree of intensity will be found which will be within the requirements for this standard.

As far as this can be inferred from the current plans, the panel is convinced that the nature of the planned extra-curricular activities is in line with the intended contribution to the programme.

On both aspects of this standard the panel is convinced that the programme meets the requirements.

Conclusion: the panel assesses this standard as satisfactory.

3.4 Standard D: Intake

The programme has a sound selection procedure in place, aimed at admitting motivated and academically and/or professionally talented students.

Outline of findings

The panel observes that the intake procedure targets motivated and academically and/or professionally talented students who fit in with the educational concept of ATLAS. The programme requires that students have a good level in Maths and English (GPA of 7 or higher). The first screening of applicants will be based on an application form, a letter of motivation and a letter of recommendation from the school. Selected candidates will be interviewed in a face-to-face interview and a team assignment. The Dean of ATLAS makes a decision on acceptance. The programme ensures that a similar selection setting will be created for non-Dutch students. ATLAS intends to select 50 to 70 students in the first years, rising to 100 in the steady state.

Considerations

The panel considers that the selection procedure as it exists on paper at the moment of assessment is adequate and targets the right kind of students for this programme. The requirements regarding Maths and English are in line with the nature of the programme. The selection procedure also looks at the students' skills in communication and co-operation, elements that come back in the projects in the curriculum. The procedure is well designed and has safeguards to ensure an honest assessment of the applicants.

The programme aims at a high number of female students entering the College. The panel has not been fully convinced this can be achieved, given the difficulties in attracting female students to the field of sciences and engineering. However, the panel expects that the broad profile will be effective in this regard and applauds the ambitions of ATLAS.

Conclusion: the panel assesses this standard as satisfactory.

3.5 Standard E: Quality of staff

The teachers have high-quality knowledge of the relevant subject and feel involved in the distinctive nature of the programme.

Outline of findings

The panel observes that ATLAS has selected the tutors for the initial phase of the programme on the basis of their proficiency for the educational concept and their compatibility with the teaching staff. Tutors are supposed to work together to guide the students' education and development. They must be open to contributions from other disciplines than their own. The teachers for the core subjects will be chosen from the regular staff at the university but receive extra training for their specific tasks, such as educational development for excellent students, looking over the boundaries of their own discipline and teaching in an international classroom. With this training they will qualify for a senior teaching qualification (SKO).

The educational concept of ATLAS will figure as a pioneering project for a restyling of the didactic approach of the universities' bachelor programmes. As a result more teaching staff will get acquainted with the notion of inter- and multidisciplinary teaching.

The programme has provided a list of the core team and of the teachers involved in teaching courses in core subjects. All teachers are experienced researchers with a PhD. The staff includes a large number of senior researchers at the level of professor.

Considerations

The panel considers that the teaching staff of ATLAS, both the core team and the teachers in the core subjects, are fully qualified in their own field and are very enthusiastic about participating in the ATLAS programme. The university is aware of the special skills for inter- and multidisciplinary teaching in an intensive programme and trains the ATLAS teachers in these aspects. The panel remarks that the academic level of the staff is high and commensurate with the requirements of the programme. It considers that the quality of staff at ATLAS fully meets the requirements of this standard.

Conclusion: the panel assesses this standard as satisfactory.

3.6 Standard F: Number of staff

There is sufficient staff available to provide small-scale and intensive education and to ensure and develop individual contact between teachers and students.

Outline of findings

The panel observes that the teacher to student ratio in ATLAS is 1:16, while it is 1:26 at the University of Twente in general. The core team consists of ten staff members and the Dean. The programme expects that with the rise of the number of students, the demands for more teaching staff will increase. The deans of all six faculties of the university together form the programme's Board of Governors and guarantee to supply personnel when needed.

Considerations

The panel considers that the programme has a sufficient number of staff available to start the programme. They have some doubts as to the ambitions regarding the level of individual

attention and guidance for the students with the number of staff in the core team at the moment. It is convinced that the programme management is aware of this and that the support from the Board ensures that there will be sufficient staff to realize the intensive and small-scale educational concept. The panel is impressed by the enthusiasm and support throughout the university for the programme. It considers that ATLAS meets the requirements for this standard.

Conclusion: the panel assesses this standard as satisfactory.

3.7 Standard G: Available facilities

The programme has its own infrastructure with facilities for small-scale and intensive education and common extra-curricular social activities.

Outline of findings

The panel observes that the programme will in the near future have its own accommodation on the UT campus. Each year of ATLAS will have its own classrooms. The ATLAS student can make use of the extensive campus facilities and housing. The panel has seen during the site visit that the university has facilities for small-scale teaching and the project groups. The university has elaborate and advanced facilities for teaching and research in sciences and technology, which are assessed positively in various assessments.

Considerations

The panel considers that the university has adequate facilities for realising the educational concept of ATLAS. The university will expand these further in the near future.

Conclusion: the panel assesses this standard as satisfactory.

3.8 Standard H: Level realised

The content and the level of the final projects are in line with the level and the broadening of interests as set down in the intended learning outcomes. Graduates are admitted to prestigious postgraduate programmes and/or jobs. The success rates are substantially higher than those of other relevant programmes.

Outline of findings

The panel observes that the realization of the level of the graduates and the retention rate will have to be assessed when the programme has been active for a number of years. The programme has defined indicators for the intended levels. It expects to be able to exchange students with renowned partner universities abroad. The level of achievement of this exchange will be an indication of the perceived quality of the graduates. The programme regards the admission into the university's own master's programmes as an indicator for the achieved output levels. The panel has interviewed a number of the Directors of Education of these programmes and they were confident that students could also qualify for disciplinary master's programmes.

The programme is aware of the fact that its intended retention rates are considerably higher than the current numbers for most bachelor's programmes in the University of

Twente. It believes selection and the high level of dedication of the students will produce better results.

Considerations

The panel considers that the programme has set itself ambitious targets both for the academic level and for the retention rate. It is convinced that these targets are comparable to results from other University Colleges. The context of science and technology is different, though. The panel believes that with the right population of students the ATLAS programme can and will perform well. Given the prospective assessment of this standard the panel can only express its confidence that the programme is at this stage of preparation in a good position to achieve the intended results and do well in a future practice-based assessment.

Conclusion: the panel assesses this standard as satisfactory.

Overall assessment

On the basis of the assessment on each of the standards of the framework, the panel considers that the overall assessment of the application by the University of Twente is satisfactory. The panel advises the NVAO to award the Distinctive feature 'Small-scale and intensive education' to the academic bachelor programme Technology and Liberal Arts & Sciences of the University of Twente.

The panel considers that the programme has set learning outcomes of a high level and at the same time ensures that students will be broadly educated, with sufficient insight into the societal context and application of technology. It has observed that the programme leads to the intended learning outcomes in a convincing manner, although the link between the learning lines, learning outcomes and the projects should be made more explicit, preferably in a matrix.

The Personal pursuit element of the curriculum is an innovative way to integrate the extra-curricular activities of students into the programme. It can also stimulate more extra-curricular activities that have a link with the programme's objective. The panel regards that the implementation of the Personal pursuit is work in progress, but it is assured that there are enough safeguards for a valid integration into the learning outcomes. The programme sets itself high goals in the level of guidance and tutoring, given the number of staff available for these tasks, especially when student numbers rise. It cautions the programme staff to set itself realistic goals in that respect.

The panel is very positive about the ambition of the university to draw more students to the science and engineering field and use a broad programme as a spearhead. It values the support for this programme from the university as a whole and considers this an important prerequisite for its future success. This will become evident when the need for more staff will present itself.

The selection procedure is adequate at this stage and will be refined with experience. The panel is positive that the programme has defined clear indicators for the realization of outcomes both in terms of academic level and retention rate. The panel considers that finding the right kind of student will prove crucial in that respect.

Panel report drafted 10 July 2012

Prof.dr. J.C.M. van Eijndhoven
(chair)

Drs. W.J.J.C. Vercouteren RC
(secretary)

Table of assessments

Standard A: Intended learning outcomes	Satisfactory
Standard B: Relationship between the goals and content of the programme	Satisfactory
Standard C: Structure and didactic concept	Satisfactory
Standard D: Intake	Satisfactory
Standard E: Quality of staff	Satisfactory
Standard F: Number of staff	Satisfactory
Standard G: Available facilities	Satisfactory
Standard H: Level realised	Satisfactory
Overall assessment	Satisfactory

Annex a. Schedule of the site visit

The panel undertook a site visit on 15 June 2012 as part of the external assessment procedure regarding the Academic bachelor programme Technology and Liberal Arts & Sciences submitted by the University of Twente. The schedule of the visit was as follows.

- | | |
|---------------|---|
| 08.30 – 09.30 | Arrival of panel and deliberations (internal) |
| 09.00 – 09.30 | Meeting with representatives of University management team and programme management <ul style="list-style-type: none">▪ Prof. E. Brinksma, rector of University of Twente▪ Prof. T. Mouthaan, dean of Faculty of Electrical Engineering, Mathematics and Computer Science, chair ATLAS Board▪ K. van Ast MSc, vice-president of the Executive Board |
| 09.30 - 10.30 | Meeting with programme management <ul style="list-style-type: none">▪ Prof. J. Herek, ATLAS dean▪ K. Ruijter MSc, programme manager▪ L. Krab PhD, project manager |
| 10.30 – 10.45 | Panel deliberations (internal) |
| 10.45 – 11.45 | Meeting with representatives of the Programme Council and Curriculum Development Group <ul style="list-style-type: none">▪ Prof. J. Herek, chair Programme Council and ATLAS dean▪ Prof. M. Elwenspoek, Programme Council▪ Prof. A. Need, Programme Council▪ Prof. P. Brey, Programme Council and chair ATLAS Examination Board▪ W. Wits PhD, Programme Council▪ S. Van Balen BSc, student member Programme Council▪ F. Janssen BSc, student member Programme Council▪ J. Flokstra PhD, Curriculum Development Group |
| 11.45 – 13.00 | Lunch and panel deliberations (internal) |
| 13.00 – 13.30 | Visit to the ATLAS programme's prospective premises |
| 13.30 – 14.30 | Meeting with teaching staff <ul style="list-style-type: none">▪ W. Wits PhD▪ K. Visscher PhD▪ R. Van Damme PhD▪ A. Beldad PhD▪ Prof. M. Boon▪ P. Wilhelm PhD▪ J. Homminga PhD▪ M. van der Hoef PhD |

- 14.30 – 15.15 Meeting with representatives of the programmes where ATLAS graduates may continue their studies
- J. Flokstra PhD, programme director Nanotechnology, member Curriculum Development Group
 - Prof. A. de Boer, programme director Mechanical Engineering, member ATLAS Examination Board, member Curriculum Development Group
 - Prof. S. Kuhlmann, programme leader Twente Graduate School Programme GKI, member Programme Council, member ATLAS Examination Board
 - H. Boer PhD, programme director Psychology
 - M. Letteboer PhD, programme director Applied Physics
 - Prof. V. Subramaniam, scientific director MIRA, Institute for Biomedical Technology and Technical Medicine
 - K. Eijkel PhD, directeur Kennispark
- 15.15 – 15.45 Panel deliberations (internal)
- 15.45 – 16.00 Second Meeting with programme management
- Prof. J. Herek, ATLAS dean
 - K. Ruijter MSc, programme manager
- 16.00 – 16.45 Panel deliberations (internal)
- 16.45 – 17.15 Close of visit with presentation of preliminary findings by the panel's chair

Besluit

Besluit strekkende tot toekenning van het bijzonder kenmerk 'Kleinschalig en Intensief onderwijs' aan de opleiding wo-bachelor Technology and Liberal Arts & Sciences van de Universiteit Twente, die wordt aangeboden in het ATLAS, het University College van de Universiteit Twente

datum

18 juli 2012

onderwerp

besluit

Toekenning Bijzonder Kenmerk

'Kleinschalig en intensief

onderwijs' aan wo-bachelor

Technology and Liberal Arts &

Sciences

Universiteit Twente

(000227)

ons kenmerk

NVAO/20122388/LL

bijlage

1 Inleiding

Op 30 januari 2012 heeft de Universiteit Twente een aanvraag ingediend voor toekenning van het bijzonder kenmerk 'kleinschalig en intensief onderwijs' aan de nieuwe opleiding wo-bachelor Technology and Liberal Arts & Sciences, aan te bieden in ATLAS, het University College van de Universiteit Twente. De instelling beoogt met dit bijzonder kenmerk het verkrijgen van toestemming tot het toepassen van selectie en van collegegeldverhoging.

Ter ondersteuning van deze aanvraag heeft de universiteit een aanvraagdossier overgelegd overeenkomstig het Beoordelingskader voor het bijzonder kenmerk (Stcrt 2012, nr. 4962). Een door de NVAO ingesteld panel heeft een beoordeling uitgevoerd van de aanvraag in samenhang met de beoordeling van de opleiding in het kader van de Toets Nieuwe Opleiding en op 10 juli 2012 een advies aan de NVAO uitgebracht. Het panel had de volgende samenstelling:

Voorzitter:

- Prof.dr. J.C.M. van Eijndhoven, (voorzitter) emeritus hoogleraar in Sustainability Management aan de Erasmus Universiteit Rotterdam;

Leden:

- Prof.dr..Mark Somerville, (lid), Professor of Electrical Engineering and Physics aan Olin College, Boston, USA en Associate Dean for Faculty Affairs and Research aldaar;
- Dr. C. van den Bogaert, (lid), fysicus en Departementshoofd van het Departement Onderwijs van de Universiteit van Antwerpen;
- Drs. M.M. Vermeulen, (lid), natuurkundige en beleidsmedewerker Institutional Development Office van de Erasmus Universiteit Rotterdam;
- E. van Duin MSc, (student-lid), is in 2012 afgestudeerd aan de Research Master Brain and Cognitive Sciences-Neuroscience aan de Universiteit van Amsterdam.

2 Beoordelingskader

Paragraaf 7.3, geheten "Bijzonder kenmerk kleinschalig en intensief onderwijs", van het Beoordelingskader accreditatiestelsel hoger onderwijs (Stcrt. 2012, nr. 4962).

Inlichtingen

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Pagina 2 van 2 **3 Advies van de commissie**

De commissie adviseert positief ten aanzien van de toekenning van het bijzonder kenmerk 'Kleinschalig en intensief onderwijs'. Het integrale advies is in een bijlage bij dit besluit gevoegd.

4 Besluit

De NVAO besluit het bijzonder kenmerk 'Kleinschalig en intensief onderwijs' toe te kennen aan de opleiding wo-bachelor Technology and Liberal Arts & Sciences van de Universiteit Twente, aan te bieden in ATLAS, het University College van de Universiteit Twente. Bij e-mail van 18 juli 2012 heeft het college van bestuur van de gelegenheid gebruikt gemaakt om te reageren. Dit heeft geleid tot enkele tekstuele aanpassingen in het besluit en advies.

De NVAO besluit tevens de minister van Onderwijs, Cultuur en Wetenschap te adviseren de opleiding toestemming te geven tot het selecteren van studenten en het heffen van een verhoogd collegegeld op grond van de artikelen 6.7, 6.7a, 6.7b en 6.7c van de Wet op het hoger onderwijs en wetenschappelijk onderzoek.

De looptijd van het bijzonder kenmerk aan de opleiding wo-bachelor Technology and Liberal Arts & Sciences is gekoppeld aan de accreditatietermijn van de opleiding. Voor verlenging van het bijzonder kenmerk dient in het kader van de accreditatie te worden vastgesteld dat de opleiding nog voldoet aan paragraaf 7.3 van het accreditatiekader.

De NVAO wijst de Instelling op de In artikel 6.7c van de WHW omschreven verplichting om zes jaar na de door de minister verleende toestemming voor het selecteren van studenten en het heffen van een verhoogd wettelijk collegegeld de realisatie van het kleinschalig en intensief onderwijs éénmalig door de NVAO aan de praktijk te laten toetsen.

Den Haag, 18 juli 2012

Nederlands-Vlaamse Accreditatieorganisatie



Lucien Bollaert
(bestuurder)