

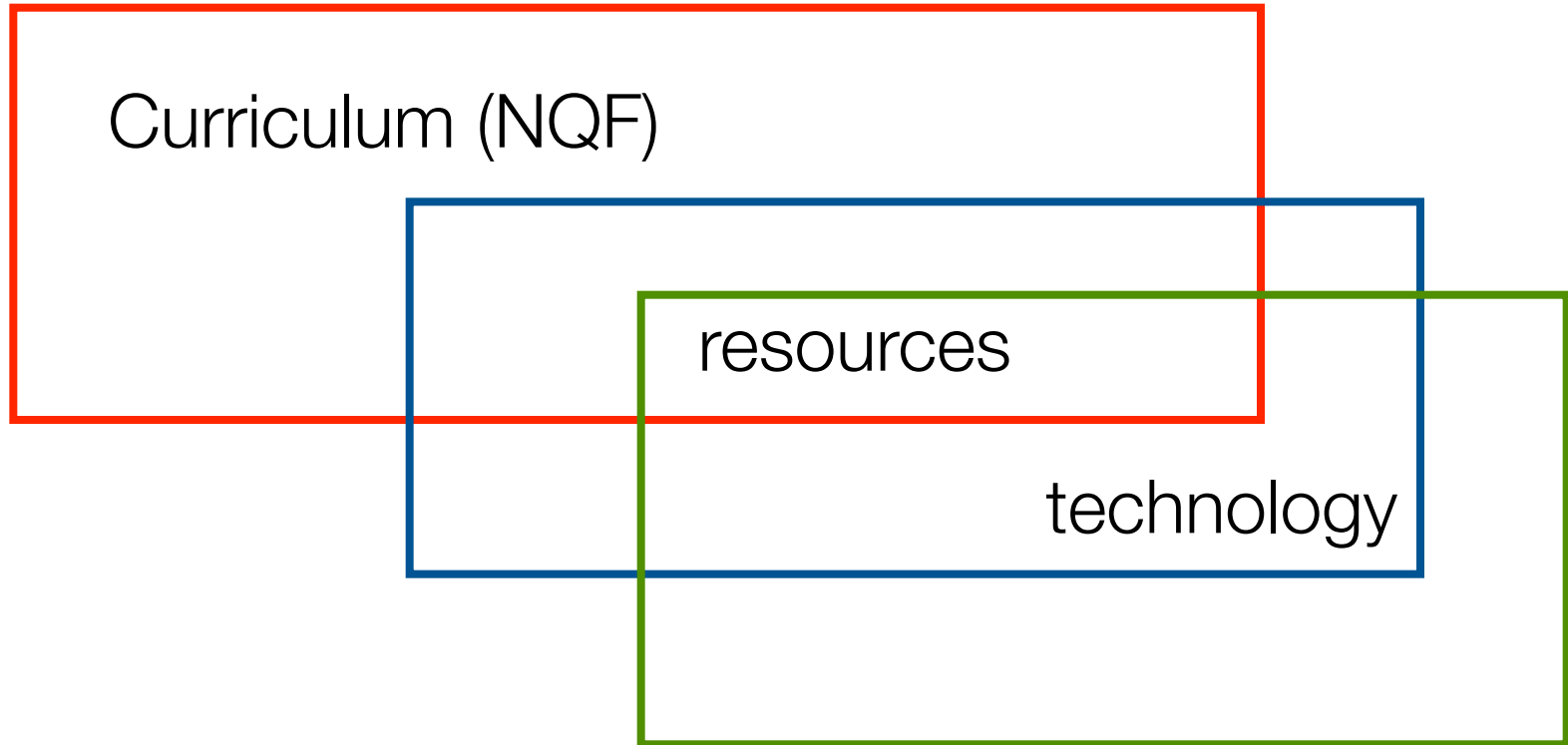
Quality & openness - open academic e-textbook for STEM

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OCWC Global 2014, Ljubljana

Challenges in HE in Poland



Challenges in HE in Poland - curriculum

adjustment of teaching to the requirements of the job market and education for the future (NQF)

NQF requires up-to-date educational materials to be provided (too expensive for students)

Challenges in HE in Poland - resources

students use materials available online
(questionable quality)

lack of high quality materials for teachers
to prepare education resources/OER

Challenges in HE in Poland - ICT skills

Digital School programm (ICT skills
equipped learners become students)

unlimited access to the content

easy use and adaptation

Mission - *openness*

Our mission is to create effective mechanisms for opening educational materials, e-textbooks and other educational resources developed by academic teachers at AGH

Openness = access

for everyone

no fees and login/password required

to high quality resources

for users with special learning needs

to the source of material for adaptation (open formats)

to open tools enhancing learning process

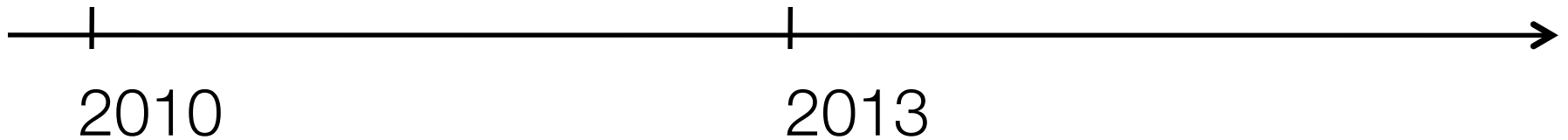
Openness at AGH - how did we start



OER repository



Open academic e-textbooks



OER study of the academic community (2013)

2 682 academic teachers (the complete response rate of 25%)

46% declared recognition of the idea of OER

35% presented fully formed attitude towards OER

5% of academic teachers were not able to assess their knowledge

OER study (2013) - knowlegde on Open AGH

40% of respondents recognised it

21% browsed materials published there

only **4%** used the materials for educational purposes

13% had experience in publishing and sharing their educational resources on the Internet

only **2%** have published own materials in Open AGH repository.

OER study (2013) - quality

60% recognise the potential of the quality of OER

improving the quality of teaching materials

improving the quality of classes

improving development of better curricula

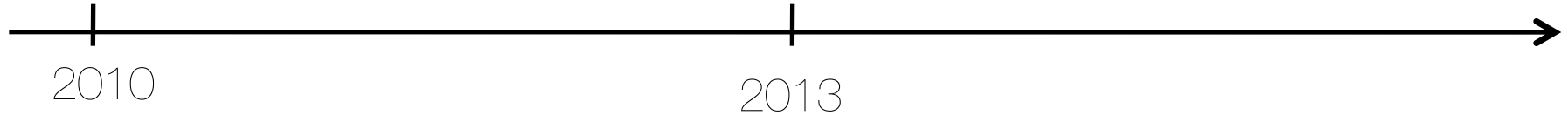
Open academic e-textbooks



OER repository



Open academic e-textbooks



Variety of formats

Closed formats

Difficulties with adaptation

Out-of-dated

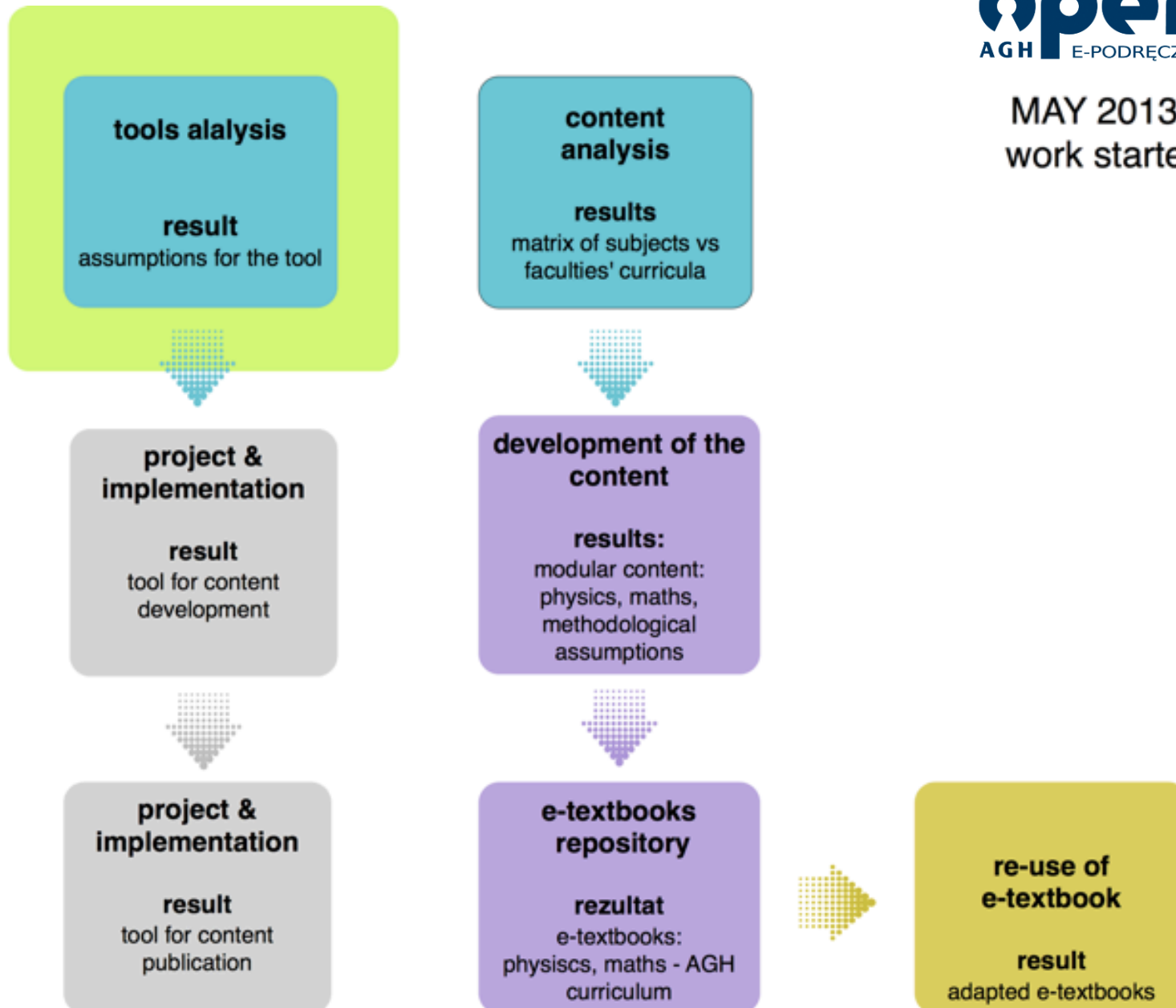


open source platform
(for development, publishing, use)

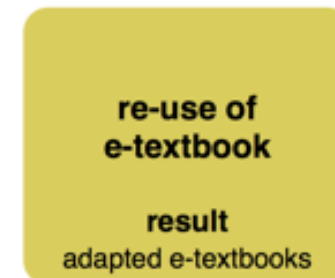
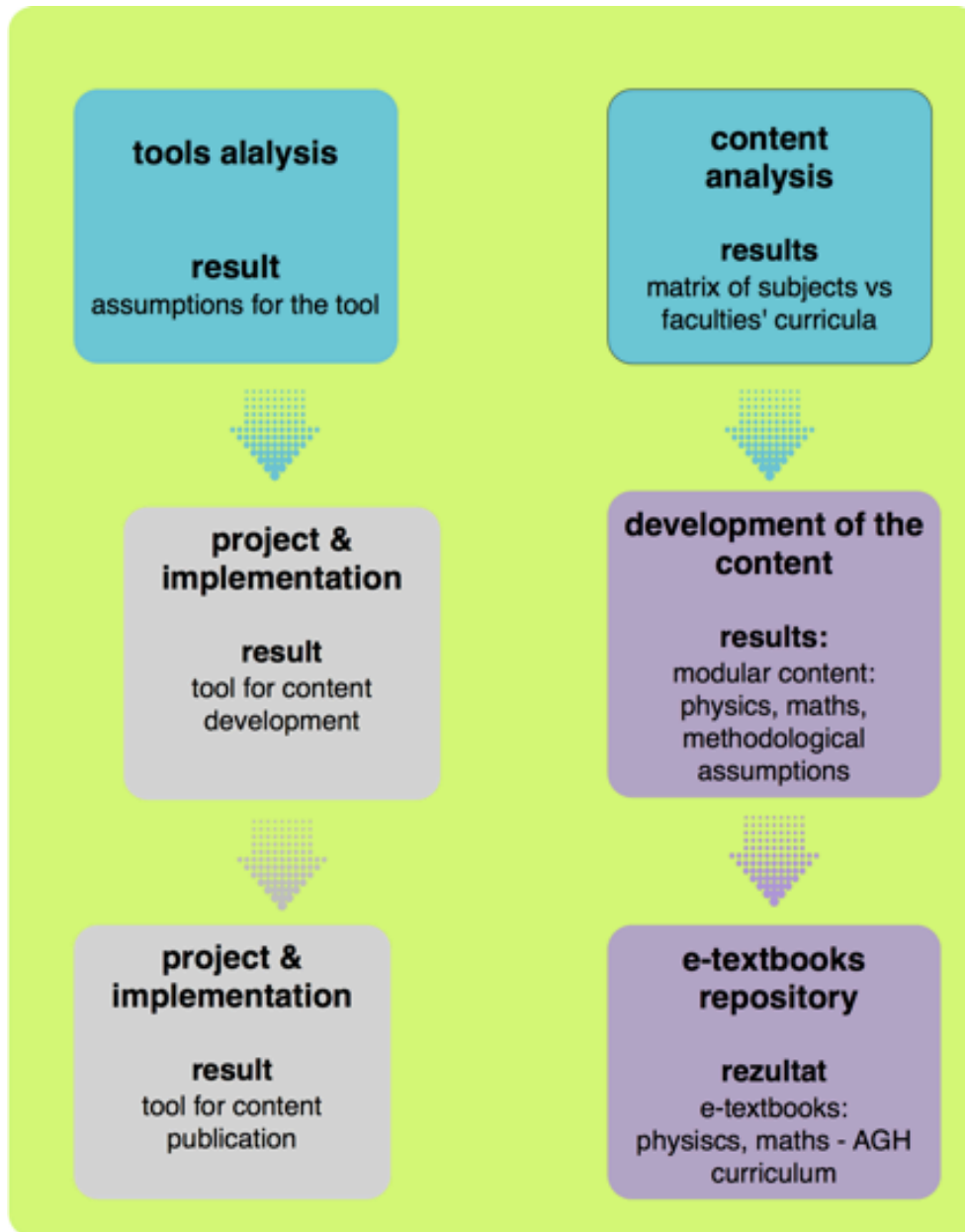


open content for
modules & e-textbooks
(NQF physics and maths)

MAY 2013 -
work started

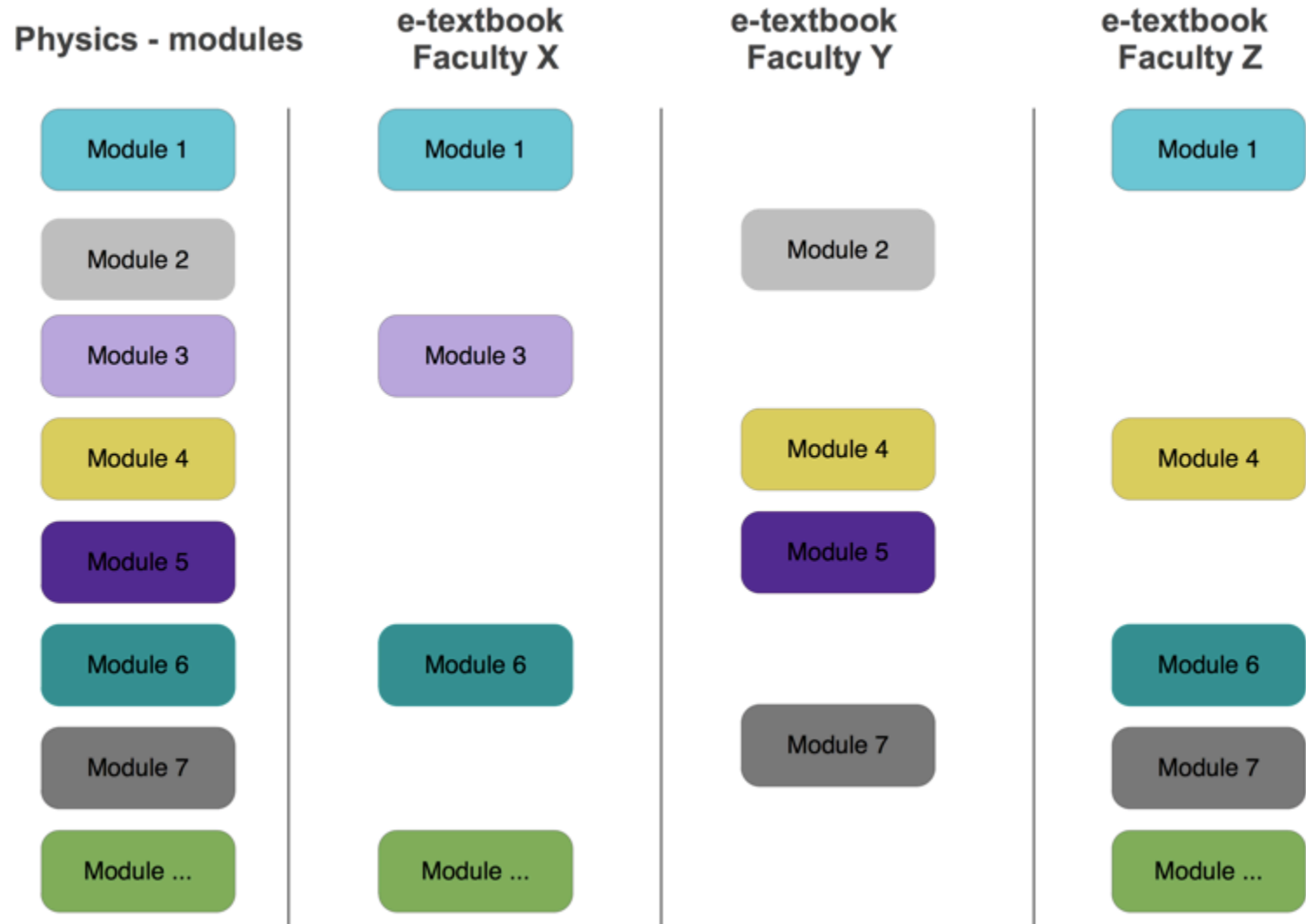


APRIL 2014



1st pilot
modules for
physics

Open AGH e-textbooks - modularity



Open AGH e-textbooks – target group



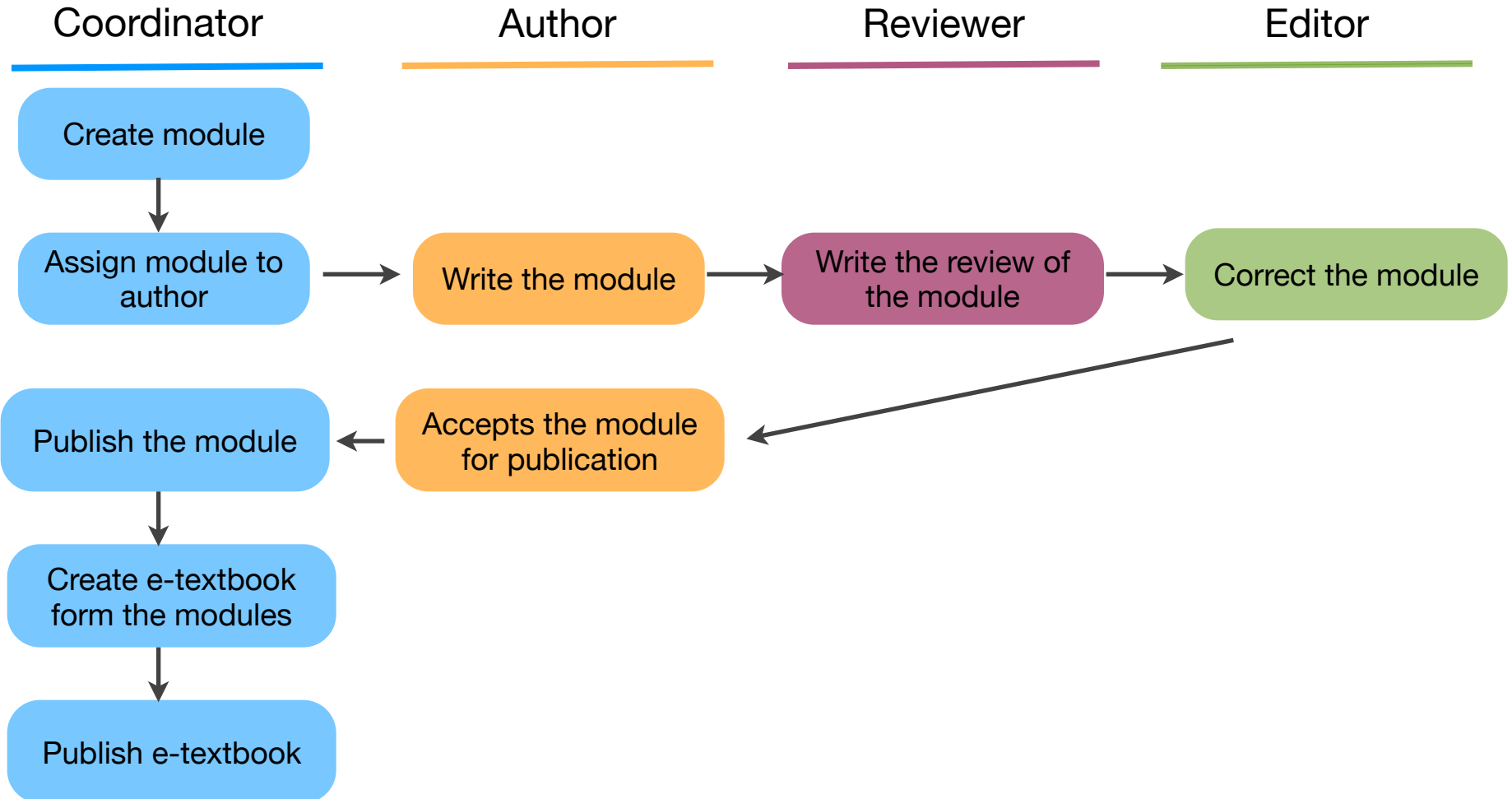
Creators of core content

subject coordinator
author
reviewer
editor

Users of content

academic teacher
student
teacher
school student
learner
.
.
everyone

From module to e-textbook



Working on the content

Online editor (TikiWiki)

Import from LaTeX (plug-in LaTeX2Wiki)

Review and editor's correction process

Working on content - online editor



Edytuj: Praca wykonana przez siłę stałą

Edytuj stronę Bezzakładek

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W najprostszym przypadku, punkt materialny przemieszcza się pod wpływem *stałej* siły F . Traktując przesunięcie \mathbf{s} jako wektor o długości równej drodze jaką przebywa ten punkt i kierunku zgodnym z kierunkiem ruchu, możemy zdefiniować pracę W .





Def
Definicja 1:

Praca W wykonana przez stałą siłę F jest iloczynem skalarnym tej siły F i wektora przesunięcia \mathbf{s} .
$$W = \mathbf{F} \cdot \mathbf{s} = F s \cos \alpha$$

PrPrzykład 1:
Ciało o masie m (na przykład sanki) jest ciągnięte po poziomej powierzchni stałą siłą F (rysunek poniżej), a sznurek, za który ciągniemy tworzy kąt α z poziomem


List of modules - result of author's work











Panel koordynatoraPanel autoraPanel użytkownikaMój e-podręcznik

Koordynator

































Moduły

E-podręczniki

Zespół



NOWY MODUŁ

<input type="checkbox"/>	Sortowanie	Sortowanie
<input type="checkbox"/>	    Amplituda i faza w ruchu harmonicznym wymuszonym	<div>PublikujOcena negatywna</div> Gotowy do publikacji
<input type="checkbox"/>	    Ciało sztywne i moment bezwładności	Oczekujący na recenzję
<input type="checkbox"/>	    Ciekawe przykłady ruchu obrotowego	<div>PublikujOcena negatywna</div> Gotowy do publikacji
<input type="checkbox"/>	    Ciężar	W trakcie pisania
<input type="checkbox"/>	    Doświadczenie Cavendisha	W trakcie pisania
<input type="checkbox"/>	    Drgania wymuszone i rezonans	Szczotka
<input type="checkbox"/>	    Dynamika ruchu obrotowego	Oczekujący na recenzję
<input type="checkbox"/>	    Energia ruchu harmonicznego	Szczotka

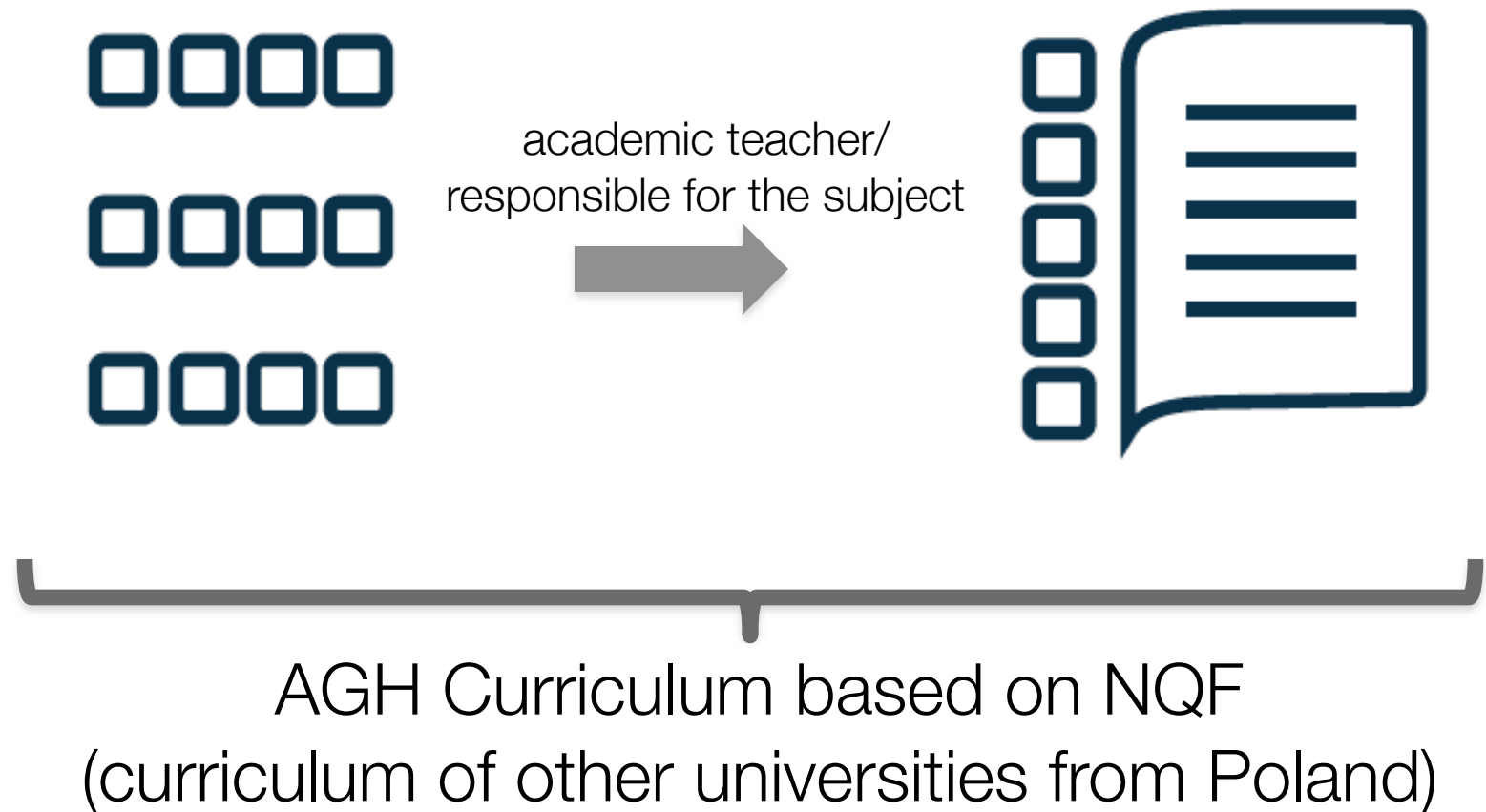
Building e-textbooks from modules




academic teacher/
responsible for the subject







Building e-textbooks from modules



Exemplary e-textbook







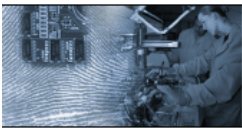
Panel koordynatora Panel autora Panel użytkownika Mój e-podręcznik

Fizyka


Fizyka

 E-podręczniki

 Moduły



WYDZIAŁ: WFIS
KIERUNEK: Fizyka Medyczna
SEMESTR: 2
AUTOR:



MECHANIKA I FIZYKA STATYSTYCZNA

△ Ruch obrotowy

Ciało sztywne i moment bezwładności

Ciekawe przykłady ruchu obrotowego

Dynamika ruchu obrotowego

Kinematyka ruchu obrotowego

Moment pędu (przeniesiony)


Obliczanie momentu bezwładności


Ruch obrotowo-postępowy


Ruch precesyjny bąka


Ruch przyspieszony po okręgu


Zasada zachowania momentu pędu



















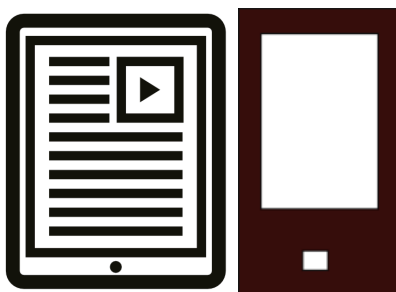




Flexibility of e-textbook use and adaptation



PDF, DjVu

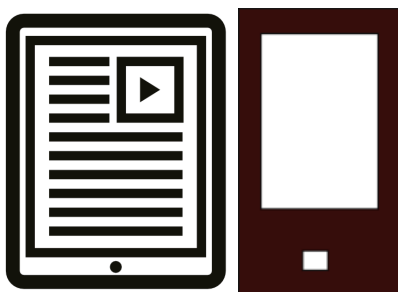


ePUB, MOBI, AZW3

Flexibility of e-textbook use and adaptation



PDF, DjVu

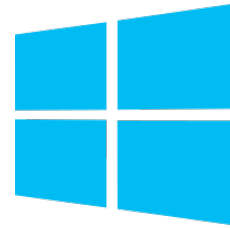


ePUB, MOBI, AZW3

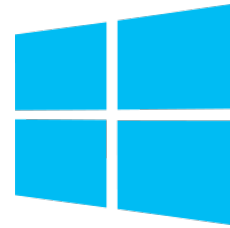


ODT, LaTeX

Flexibility of e-textbook use



Flexibility of e-textbook use



Open AGH e-textbooks



use published e-textbooks



adapt published e-textbooks

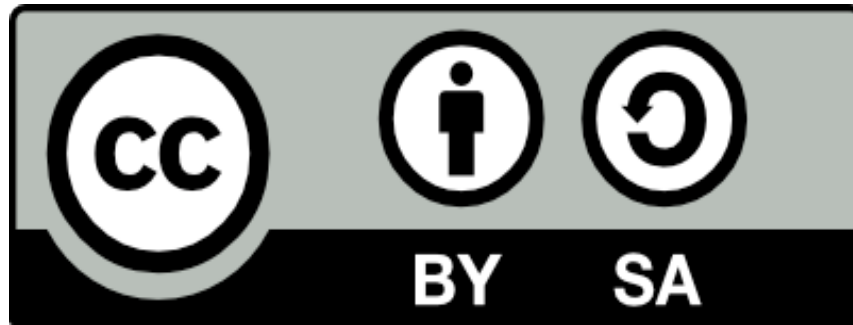


create your own e-textbooks



share (published/own) e-textbooks

Open academic e-textbooks



Creative Commons
Attribution - Share Alike 3.0 Poland

Benefits from CC BY-SA

adapted and modified e-textbooks will be always available for all users as well for the authors of the original works (AGH)

high quality resources are good starting point for adaptation = more open good quality resources available (CC -> SA)

constant up-to-date e-textbook according to AGH Curriculum

protection from use by commercial publishers

Metadata standards

Learning Resources Metadata Initiative
Dublin Core Metadata Initiative

OAI-PMH for sharing metadata with other universities' libraries (catalogue, digital libraries)

Open academic e-textbooks AGH



created by the AGH community
for the whole academic community

Open AGH e-textbooks - outcomes

Open AGH e-textbooks - outcomes



open source platform for developing, publication
and use

Open AGH e-textbooks - outcomes



open source platform for developing, publication and use



open modules and e-textbooks + archive in Univ. Library catalogue

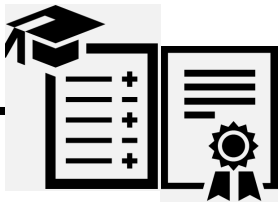
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University Curriculum plug-in

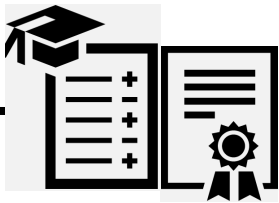
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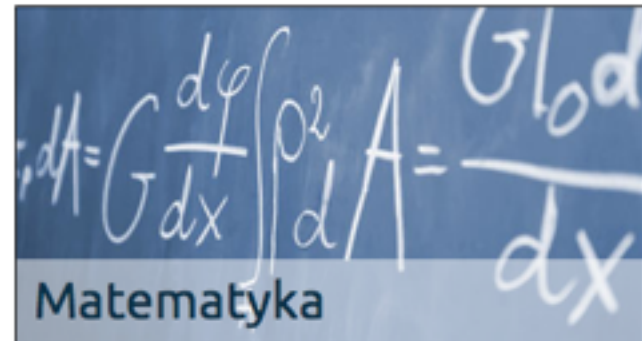
University Curriculum plug-in



increase of IPR awareness among academic community



First pilot open e-textbooks - academic year 2014/2015



<http://epodreczniki.open.agh.edu.pl>
(early beta version)

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