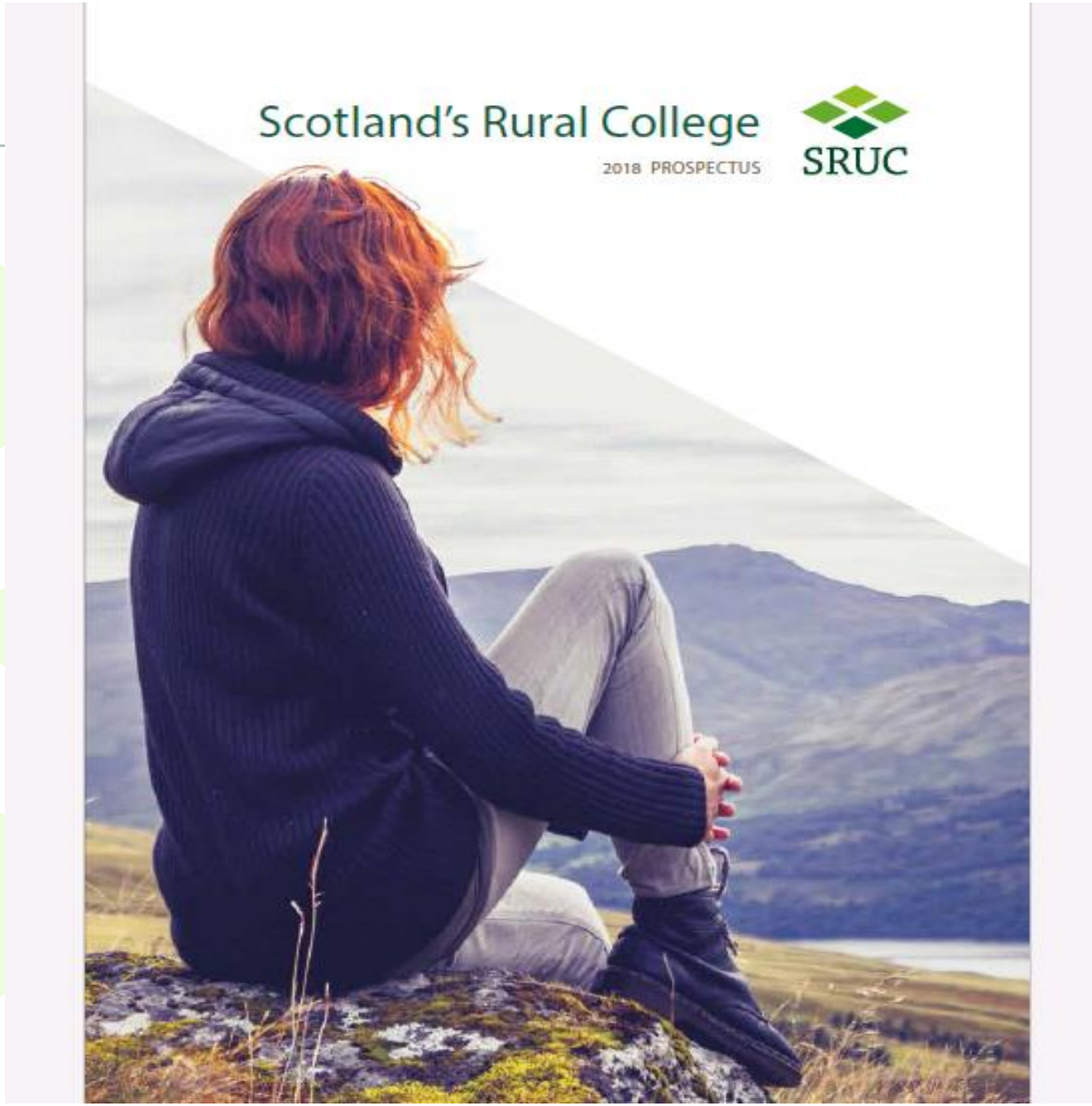
Raising Environmental Awareness

Embedding sustainability within vocational courses

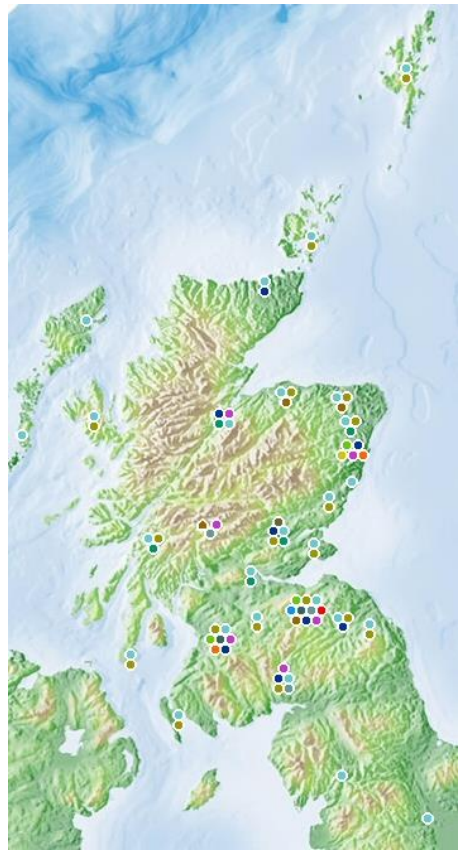
Leading the way in Agriculture and Rural Research, Education and Consulting



SRUC

About SRUC

- Education, Research and Consultancy
- Unique in Scotland and one of the largest organisations of its kind in Europe
  - Teaching Campuses at Edinburgh, Ayr, Aberdeen, Oatridge, Barony & Elmwood
  - Horticulture and Garden Design courses at Glasgow Botanic Gardens
  - Farm Business Services, Rural Business Units, Organic Consultants, Conservation Units
  - Disease Surveillance Centres
  - Research Centres, Experimental Farms



About SRUC

- Four partner Colleges merged to become SRUC in 2012
  - SAC (Scottish Agricultural College)
  - Oatridge College
  - Elmwood College
  - Barony College

- The first Scottish institution to offer courses from foundation & access level through to postgraduate

Range of qualifications – and levels

- Foundation (Certificates and Diplomas)
- Further Education (NC, SVQ)
- Higher National (HND, HNC)
- Degree (BA, BSc)
- Postgraduate (MSc, PhD)

- Training and Vocational Courses
- Flexible Learning
- Professional Development

SRUC

Our Vision

Leading innovation and sustainable development in agriculture, land and the rural sector.

Global Aims

To be a sustainable, well-resourced organisation with exemplary environmental credentials and real ownership amongst students, staff and stakeholders

Courses offered

SRUC

Agriculture
Animal and biological science
Environmental Resource Management
Rural Business Management
Countryside Management
Animal Care
Veterinary Nursing
Environmental Management and Renewables
Engineering
Forestry and Arboriculture
Golf Management and Greenkeeping

So – as an institution our students have……

Wide range of courses / career paths in mind

From specific interest in sustainability to no interest

Understand the benefits, to denying the need

Difficulty seeing the relevance in vocational courses

Wish sustainability to be embedded in specific units

Limited interest in integrated units across faculties

Sectoral opposing views

Students should not have to study sustainability in stand alone units – the concept should be applied where relevant within existing vocational subjects and contextualised

Or

Specific concepts such as global citizenship, sustainability principles, ethics, behaviour change, etc. can be best targeted by mixing student cohorts and shared learning to promote understanding

Who needs environmental awareness?

SRUC

Practitioners?
Planners?
Designers?
Service providers?
Educators?
Financial services?
Engineers?
Farmers?

1990's

Need for institutional environmental management recognised

Environmental Policy adopted

Distinct environmental modules within degree awards – i.e. Land Based Environmental Issues in Agriculture Honours year, Waste Management and Environment unit in HND

Early 2000's

Joint environmental unit introduced at SAC (now SRUC) as mandatory for all HNC (first year degree) courses

This included:

- **Agriculture**
- **Animal Science**
- **Business Management**
- **Countryside Management**
- **Animal Science**
- **Food Science and Technology**
- **Environmental Protection**

Development

Initially all taught as group lectures – in class power-points /overheads

Developed for distance learning using electronic materials in 2005

Articulate files now used to supplement in-class materials – lecture “bites” limited to 20 minutes

https://moodle.sruc.ac.uk/course/view.php?id=2064

Useful exercises

Sustainable island

- Mix classes randomly
- Students present
- Link to real life issues
- Encourage unusual and leisure content

Useful exercises

Sustainable Christmas, Easter, etc.

Students bring in sustainable presents

Slow food etc.

Lecture themed on packaging, local food, seasonality, etc.

Useful exercises

Top 10 tips

Group exercise

Randomly allocate themes from transport, food, water, electricity, energy, holidays, shopping, clothes, etc.

Students make up list and present with reasoning

Lists posted as study aids for action plan

Environmental Awareness 2009-10

TOP TIPS

From student excercises on day one – some good pointers here.

Team Big Hug (Machinery)

1) Fuel consumption – reducing fuel use means less finite resources used. Reduction in greenhouse gases and climate change.
2) Servicing – if everything works efficiently this will lead to reduced fuel consumption and emissions.
3) Choose the correct tractor size for the job. A better matched tractor will save fuel wastage. (Like this one – John McD)
4) Age of tractor – older tractors are more likely to have leaks, broken gauges, etc. which also cause waste.
5) Noise pollution – personal health.
6) Tyres – use correct tyres and pressures – more efficient.

Green Army (Transport)

1) Higher tyre pressures – global warming.
2) Less revs. – global warming
3) Regular servicing – global warming (Excellent John McD)
4) Electric cars
5) LPG cars
6) Car sharing - reduced emissions.
7) Better Public Transport – reduced emissions.
8) Biofuels
9) Reduced taxes for eco-friendly cars.
10) Holidays at home – staycations – global warming.

Anonymous (Home)

1) Turn off the lights when the room is not in use (Global warming)
2) Switch things off at the plug (Global warming)
3) Grow your own food (reduced travel and packaging)
4) Re-use water (water pollution)
5) Have a showerrather than a bath (water pollution)
6) Install solar panels (Global warming)
7) Wear more clothes (Global warming) (Easy peasy John McD)
8) Well insulated houses (Global warming)
9) Recycle (reduces waste)
10) Low energy light bulbs (Global warming)

Top 10 (Leisure)

1) Use public transport (carbon emissions, finite resource)
2) Walk more (less cars, less pollution)
3) Glasses instead of bottles (less landfil, lower carbon footprint)
4) Don't leave things on standby (less fossil fuels, lower emissions) (Collette top tip!)
5) Eat from takeaway carton (less water pollution)
6) Less flying (Carbon emissions, finite resources)
7) Lowcarbon destination/accomodation (raises awareness, resources)
8) Locally sourced produce (lower carbon footprint, less fossil fuel)
9) Loose produce instead of pre-packed (fossil fuel, landfill)
10) Re-use plastic bags (less waste, kinder to natural order)

SAC

1) Encourage car sharing and use of public transport and cycling (reduced emissions and congestion)
2) Power down PC's – not standby (reduced energy consumption)
3) Recycle waste (reduced landfill and conserving resources)
4) Walk between buildings on campus (Global warming) (You might even enjoy it! John McD)
5) Maximise natural light (Global warming)
6) Energy saving lighting (Global warming)
7) Underfloor heating (more efficient than radiators)
8) Refill printer toner cartridges (reduces landfill)
9) Switch off air conditioning in boardroom (ridiculous waste of energy (You have been in the boardroom?)
10) Insulation on walls and roof (reduce energy consumption)

Agriculture

1) Permanent pasture (good for birds and soil)
2) Plant hedges (wildlife)
3) Plant trees on rough ground (oxygen)
4) Use natural manure (less use of fossil fuels)
5) Going organic (less chemicals)
6) Conservation headlands (wildlife/biodiversity)
7) Permanent pasture by rivers (erosion)
8) Crop rotation (keeps high level of soil nutrients)
9) Better disposal of farm waste (less pollution, re-use)
10) Clean guttering (ensure clean water goes in drains) (Top tip John McD)

CO Coos (Transport)

1) Car share (reduced CO2 emissions)
2) Avoid excessive braking and acceleration (reduced CO2 emissions)
3) Correct tyre pressures (reduced CO2 emissions)
4) Use public transport (reduced CO2 emissions)
5) Travel with a full trailer (reduced CO2 emissions)
6) Make vehicles from recyclable/recycled materials (reduced CO2 emissions)
7) Walk livestock to market (reduced CO2 emissions) (Panto? John McD)
8) Use a bike (reduced CO2 emissions)
9) Use a dynamo on your bike (reduced CO2 emissions)
10) Use a flintstone style car – stone wheels.

Last group (Leisure)

1) Minimise standby (finite resources)
2) Turn volume down (finite resources)
3) Back to basic – board games (finite resources) (Love it John McD)
4) Think before you shop (social responsibility)
5) Car share/public transport (climate change)
6) Leave the countryside as you found it (Contamination water and land)
7) Try not to drink from bottles (finite resources)
8) Shop at second hand – charity shops (finite resources)
9) Use things to full capacity (finite resources)
10) Fix, don't throw (finite resources)

Main content – class test

Water quality/ land use

Climate change / fossil fuels

Air quality / transport

Landfill /Leachate

Population / quality of life

Globalisation / economics

Sustainability definitions

Principles of sustainability

Sustainability action plans

https://moodle.sruc.ac.uk/course/view.php?id=4625

Problems with tests.....

Initial 1.5 hour format too stressful – too many new concepts – high resit rates

By 2010 changed to 4 fortnightly essay questions – better results, but very high marking load over sustained period – complicated mop-up

2017 – trial of electronic assessment with personal action plan retained

Topic areas

Assessment 1

- Action plans
- Sustainability
- Principles
- SDG's

Assessment 2

- Global issues
- Population

Logistics
Two sets of 45 questions
Random allocation of 15
Question order and answer order also randomised

Promising signs

Students very keen on instant feedback

Questions double as assessment and learning tool

Flexibility of assessment timings due to randomisation

Staff time for marking almost eliminated

Assessment time for students greatly reduced

Result recorded automatically

Still developing assessment after pilot year

Main content – personal action plan

Project format (assessment)

Students identify what changes they can make to work/study – leisure and home life that can contribute to sustainability

Table format.

Action and specific impact to be identified

Personal Action Plans

Advantages

- Not restricted to vocational aspects
- Recognise needs of society - they will be citizens
- when not at work
- Integrate and personalise their interests and ideas
- Allow imaginative submissions
- Can use internet study as resource

Personal Action Plans

Issues

- Students can prevaricate as it is their first assessment
- Marking is time consuming
- Often ideas are great – connection to impacts poor

Thanks!

Please contact me on john.macdonald@sruc.ac.uk if you have any questions or wish to discuss anything further.