



Humane Slaughter Association

Educational Tool: Course outline for teaching the welfare of food animals during transport, marketing and slaughter

The HSA has created the following course outline with the aim of providing a useful resource for educators wishing to develop tertiary education modules on the welfare of animals during transport, marketing and slaughter. Key relevant educational material developed by the HSA and others can be easily accessed using the hyperlinks provided in the table.

This document may be particularly useful for course co-ordinators in veterinary schools and those teaching animal welfare undergraduate and post-graduate degrees. It could also be tailored to also meet the specific interests/needs of people working directly with the animals for training or CPD purposes.

Topic covered	Specific areas	Relevant HSA material (hyperlinks will be provided in the final version for convenience) Printed publications: orange, online guides: blue, DVD packages: green, posters: red, conference/workshop reports: pink, factsheets: brown, non-HSA documents: purple
1. A) Basic concepts	Animal welfare Technical definitions Biological definitions Signs of an effective stun	Covered in many HSA publications e.g. Captive-Bolt Stunning of Livestock http://www.hsa.org.uk/introduction/introduction Humane Harvesting of Fish http://www.hsa.org.uk/humane-harvesting-of-fish-introduction/introduction-6 Humane Slaughter – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter--taking-responsibility , UFAW Publications: Management and Welfare of Farm Animals: The UFAW Farm Handbook http://www.ufaw.org.uk/ufaw-wiley-blackwell-animal-welfare-series/management-and-welfare-of-farm-animals Understanding Animal Welfare http://www.ufaw.org.uk/ufaw-wiley-blackwell-animal-welfare-series/understanding-animal-welfare

1. B) Importance of maintaining good welfare at slaughter, during transport and/or at markets	Sentience	Covered in many HSA publications e.g. Electrical Stunning of Red Meat Animals http://www.hsa.org.uk/electrical-stunning-of-red-meat-animals-introduction/introduction-1 Electrical Waterbath Stunning of Poultry http://www.hsa.org.uk/electrical-waterbath-stunning-of-poultry-introduction/introduction-7 Humane Slaughter – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter--taking-responsibility
	Duty of care	
	Meat quality as affected by a) physical injuries b) psychological stress	
2. Animal welfare legislation	National, EU, International	Legislation: Welfare at the Time of Killing (WATOK UK nations), EC regulation 1099 https://www.gov.uk/government/collections/welfare-of-animals-at-the-time-of-killing OIE recommendations http://www.oie.int/animal-welfare/oie-standards-and-international-trade/
	Roles and qualifications/ competence required	
	Location of killing: Farm or slaughterhouse Differences in legislation	On-Farm Slaughter or Killing of Livestock for Consumption http://www.hsa.org.uk/shop/publications-1/product/on-farm-slaughter-or-killing-of-livestock-for-consumption-(free-pdf) Legislation: Welfare at the Time of Killing (WATOK UK nations), EC regulation 1099 https://www.gov.uk/government/collections/welfare-of-animals-at-the-time-of-killing
3. Animal behaviour	Species specific behaviour	Humane Handling of Livestock http://www.hsa.org.uk/shop/publications-1/product/humane-handling-of-livestock Cattle Handling in Abattoirs and Markets http://www.hsa.org.uk/shop/publications-1/product/cattle-handling-in-abattoirs-and-markets Improved Handling Systems for Pigs at Slaughter http://www.hsa.org.uk/shop/publications-1/product/improved-handling-systems-for-pigs-at-slaughter Humane Handling of Livestock http://www.hsa.org.uk/humane-handling-of-livestock-introduction/introduction-4 Humane Slaughter – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter--taking-responsibility
	Distinguishing between normal/abnormal behaviour	Approved Types of Handling Aids http://www.hsa.org.uk/shop/publications-1/product/approved-types-of-handling-aids Moving Animals in Raceways http://www.hsa.org.uk/downloads/posters/hsa-market-poster-raceways.pdf Moving Pigs in Raceways http://www.hsa.org.uk/shop/publications-1/product/moving-pigs-in-raceways
4. A) Safe handling of animals (general principles)	Using natural behaviour patterns to make working with them/moving through lairage to kill site easier – concepts of flight zone, point of balance etc	

	Dealing with issues that prevent animals from being moved to the kill site easily	<p>Humane Handling of Livestock http://www.hsa.org.uk/shop/publications-1/product/humane-handling-of-livestock</p> <p>Design Specifications – Handling Facilities for Abattoirs and Farms http://www.hsa.org.uk/shop/publications-1/product/design-specifications-handling-facilities-for-abattoirs-and-farms</p> <p>Prevent Slips and Falls by Managing Concrete Floors http://www.hsa.org.uk/shop/publications-1/product/prevent-slips-and-falls-by-managing-concrete-floors</p> <p>Humane Slaughter – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter--taking-responsibility</p>
4. B) Handling requirements of different species	Poultry	<p>Poultry Catching and Handling http://www.hsa.org.uk/shop/publications-1/product/-poultry-catching-and-handling-(free-pdf)</p> <p>Poultry Welfare – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/poultry-welfare--taking-responsibility</p>
	Mammals	<p>Humane Slaughter – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter--taking-responsibility</p> <p>Lifting a Calf or Lamb http://www.hsa.org.uk/shop/publications-1/product/lifting-a-calf-or-lamb</p>
	Fish	<p>Humane Harvesting of Fish http://www.hsa.org.uk/humane-harvesting-of-fish-introduction/introduction-6</p>
5. Restraint methods	In a slaughterhouse: Poultry Mammals	<p>Head Restraint Equipment (cattle) http://www.hsa.org.uk/shop/publications-1/product/head-restraint-equipment-(free-pdf)</p> <p>Humane Handling of Livestock http://www.hsa.org.uk/humane-handling-of-livestock-introduction/introduction-4</p> <p>Poultry Welfare – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/poultry-welfare--taking-responsibility</p>
	On a farm/small holding	<p>Practical Slaughter of Poultry http://www.hsa.org.uk/introduction-1/introduction-3</p> <p>Poultry Welfare – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/poultry-welfare--taking-responsibility</p>

<p>6. Stunning methods</p>	<p>Poultry Mammals Fish</p>	<p>Captive-Bolt Stunning of Livestock http://www.hsa.org.uk/shop/publications-1/product/captive-bolt-stunning-of-livestock-4th-edition</p> <p>Best Practice Guidelines for Group-Stunning Systems http://www.hsa.org.uk/shop/publications-1/product/best-practice-guidelines-for-group-stunning-systems</p> <p>Electrical Waterbath Stunning of Poultry http://www.hsa.org.uk/shop/publications-1/product/electrical-waterbath-stunning</p> <p>Prevention of Pre-Stun Shocks in Electrical Waterbaths http://www.hsa.org.uk/shop/publications-1/product/prevention-of-pre-stun-shocks-in-electrical-waterbaths-(free-pdf)</p> <p>Electrical Stunning of Salmon http://www.hsa.org.uk/shop/publications-1/product/electrical-stunning-of-salmon-(free-pdf)</p> <p>Humane Harvesting of Salmon and Trout http://www.hsa.org.uk/shop/publications-1/product/humane-harvesting-of-salmon-trout</p> <p>Humane Harvesting of Halibut http://www.hsa.org.uk/shop/publications-1/product/humane-harvesting-of-halibut-(free-pdf)</p> <p>Electrical Waterbath Stunning of Poultry http://www.hsa.org.uk/electrical-waterbath-stunning-of-poultry-introduction/introduction-7</p> <p>Captive-Bolt Stunning of Livestock http://www.hsa.org.uk/introduction/introduction</p> <p>Electrical Stunning of Red Meat Animals http://www.hsa.org.uk/electrical-stunning-of-red-meat-animals-introduction/introduction-1</p> <p>Humane Harvesting of Fish http://www.hsa.org.uk/humane-harvesting-of-fish-introduction/introduction-6</p> <p>Poultry Welfare – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/poultry-welfare--taking-responsibility</p> <p>Humane Slaughter – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter--taking-responsibility</p> <p>Humane Slaughter of Cattle http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter-of-cattle</p> <p>Novel or improved methods of detecting un/consciousness in animals after stunning http://www.hsa.org.uk/downloads/hsaworkshop18june14.pdf</p> <p>Electrical Waterbath Stunning Parameters http://www.hsa.org.uk/downloads/info/electrical-waterbath-stunning-parameters.pdf</p>
----------------------------	-------------------------------------	--

<p>7. Stun to kill methods</p>	<p>Gas and electricity</p>	<p>Electrical Stunning of Red Meat Animals http://www.hsa.org.uk/shop/publications-1/product/electrical-stunning-of-red-meat-animals</p> <p>Carbon Dioxide Stunning and Killing of Pigs http://www.hsa.org.uk/shop/publications-1/product/carbon-dioxide-stunning-and-killing-of-pigs-(free-pdf)</p> <p>Gas Killing of Chickens and Turkeys http://www.hsa.org.uk/shop/publications-1/product/gas-killing-of-chickens-and-turkeys-(free-pdf)</p> <p>Gas Killing of Chicks in Hatcheries http://www.hsa.org.uk/shop/publications-1/product/-gas-killing-of-chicks-in-hatcheries-(free-pdf)</p> <p>Humane Slaughter – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter--taking-responsibility</p> <p>Humane Slaughter of Sheep http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter-of-sheep</p> <p>Humane Slaughter of Pigs http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter-of-pigs</p> <p>Stunning Poultry: Mechanical Percussive Devices http://www.hsa.org.uk/shop/publications-1/product/stunning-poultry-mechanical-percussive-devices</p> <p>Humane Killing of Portion-Sized Rainbow Trout Using Electrical Pipeline Stunners http://www.hsa.org.uk/shop/publications-1/product/humane-killing-of-portion-sized-rainbow-trout-using-electrical-pipeline-stunners</p> <p>Low Atmospheric Pressure Stunning (LAPS) http://www.hsa.org.uk/downloads/info/LAPS-Workshop-Report.pdf</p>
--------------------------------	----------------------------	---

<p>8. Killing methods</p>	<p>Poultry (excluding chicks) Mammals (excluding neonates) Fish</p>	<p>Humane Killing of Livestock using Firearms http://www.hsa.org.uk/shop/publications-1/product/humane-killing-of-livestock-using-firearms-2nd-ed</p> <p>Stun-to-Stick Times (Electrical Stunning)</p> <p>Humane Harvesting of Salmon and Trout http://www.hsa.org.uk/shop/publications-1/product/humane-harvesting-of-salmon-trout</p> <p>Humane Harvesting of Halibut http://www.hsa.org.uk/shop/publications-1/product/humane-harvesting-of-halibut-(free-pdf)</p> <p>Practical Slaughter of Poultry http://www.hsa.org.uk/introduction-1/introduction-3</p> <p>Humane Killing of Livestock Using Firearms http://www.hsa.org.uk/humane-killing-of-livestock-using-firearms-introduction/introduction-2</p> <p>Humane Harvesting of Fish http://www.hsa.org.uk/humane-harvesting-of-fish-introduction/introduction-6</p> <p>Poultry Welfare – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/poultry-welfare--taking-responsibility</p> <p>Humane Slaughter – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter--taking-responsibility</p> <p>Humane Slaughter of Cattle http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter-of-cattle</p> <p>Humane Slaughter of Sheep http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter-of-sheep</p> <p>Humane Slaughter of Pigs http://www.hsa.org.uk/shop/publications-1/product/humane-slaughter-of-pigs</p> <p>Effective Neck-Cutting of Poultry http://www.hsa.org.uk/shop/publications-1/product/effective-neck-cutting-of-poultry</p> <p>Humane Killing of Portion-Sized Rainbow Trout Using Electrical Pipeline Stunners http://www.hsa.org.uk/shop/publications-1/product/humane-killing-of-portion-sized-rainbow-trout-using-electrical-pipeline-stunners</p>
---------------------------	---	---

<p>9. Situations specific to on-farm killing</p>	<p>Slaughter of neonate mammals + chicks</p>	<p>Code of Practice for the Disposal of Chicks in Hatcheries http://www.hsa.org.uk/shop/publications-1/product/-gas-killing-of-chicks-in-hatcheries-(free-pdf) Instantaneous Mechanical Destruction http://www.hsa.org.uk/shop/publications-1/product/instantaneous-mechanical-destruction-(free-pdf) Humane Dispatch and Disposal of Kids and Lambs http://www.hsa.org.uk/shop/publications-1/product/humane-dispatch-and-disposal-of-kids-and-lambs-(free-pdf) Humane Dispatch and Disposal of Infant Calves http://www.hsa.org.uk/shop/publications-1/product/humane-dispatch-and-disposal-of-infant-calves-(free-pdf) On-Farm Slaughter of Large Poultry Flocks http://www.hsa.org.uk/shop/publications-1/product/on-farm-slaughter-of-large-poultry-flocks-(free-pdf) On-Farm Slaughter of Poultry for Disease Control http://www.hsa.org.uk/shop/publications-1/product/on-farm-slaughter-of-poultry-for-disease-control-(free-pdf)</p>
<p>10. Emergency killing</p>	<p>What constitutes an emergency?</p>	<p>Guidance for Veterinary Surgeons on the Emergency Slaughter of Cattle http://www.hsa.org.uk/shop/publications-1/product/guidance-for-veterinary-surgeons-on-the-emergency-slaughter-of-cattle The Casualty Sheep http://www.hsa.org.uk/shop/publications-1/product/the-casualty-sheep The Casualty Pig http://www.pigvetsoc.org.uk/files/document/192/Casualty%20Pig%20-%20April%202013-1.pdf Emergency Slaughter http://www.hsa.org.uk/emergency-slaughter-introduction/introduction-5 Emergency Slaughter http://www.hsa.org.uk/shop/publications-1/product/emergency-slaughter The Road Ahead – Livestock Welfare in Transit http://www.hsa.org.uk/shop/publications-1/product/the-road-ahead-livestock-welfare-in-transit</p>

	<p>Options</p> <p>a) on farm b) in a slaughterhouse c) during transport</p>	<p>Guidance for Veterinary Surgeons on the Emergency Slaughter of Cattle http://www.hsa.org.uk/shop/publications-1/product/guidance-for-veterinary-surgeons-on-the-emergency-slaughter-of-cattle</p> <p>The Casualty Sheep http://www.hsa.org.uk/shop/publications-1/product/the-casualty-sheep</p> <p>The Casualty Pig http://www.pigvetsoc.org.uk/files/document/192/Casualty%20Pig%20-%20April%202013-1.pdf</p> <p>Emergency Slaughter http://www.hsa.org.uk/emergency-slaughter-introduction/introduction-5</p> <p>Emergency Slaughter The Road Ahead – Livestock Welfare in Transit http://www.hsa.org.uk/shop/publications-1/product/the-road-ahead-livestock-welfare-in-transit</p>
11. Religious and cultural issues surrounding slaughter	Specific methods for killing according to Shechita and Halal	Religious slaughter – the Facts (Factsheet) http://www.hsa.org.uk/downloads/related-items/religious-slaughter.pdf
	Equipment required	Legislation: Welfare at the Time of Killing (WATOK UK nations), EC regulation 1099
	Legislation	See https://www.gov.uk/government/collections/welfare-of-animals-at-the-time-of-killing
12. Horses	Options for slaughter Site Methods	<p>Making the Right Decision - A guide for horse owners on the humane destruction of aged or injured horses http://www.hsa.org.uk/downloads/publications/farewell-leaflet-for-web-march-2014.pdf</p>

Specific module on transport

Topic covered	Specific areas	Relevant HSA material (hyperlinks will be provided in the final version for convenience) Printed publications: orange, online guides: blue, DVD packages: green, posters: red, conference/workshop reports: pink, factsheets: brown, non-HSA documents: purple
1. Transport	Handling	Transport of Farm Animals and Horses
	Loading	http://www.hsa.org.uk/shop/publications-1/product/transport-of-farm-animals-and-horses
	Unloading	Transport of Poultry
	The journey	http://www.hsa.org.uk/shop/publications-1/product/transport-of-poultry-(free-pdf)
	Legislation Time restrictions Space allowances	Transport of Farmed Fish http://www.hsa.org.uk/shop/publications-1/product/transport-of-farmed-fish-(free-pdf) Transport of Livestock http://www.hsa.org.uk/transport-of-livestock-introduction/introduction-8 The Road Ahead – Livestock Welfare in Transit http://www.hsa.org.uk/shop/publications-1/product/the-road-ahead-livestock-welfare-in-transit Poultry Welfare – Taking Responsibility http://www.hsa.org.uk/shop/publications-1/product/poultry-welfare--taking-responsibility To Market To Market. http://www.hsa.org.uk/shop/publications-1/product/to-market-to-market-film Loading Livestock http://www.hsa.org.uk/shop/publications-1/product/loading-livestock Unloading Livestock http://www.hsa.org.uk/shop/publications-1/product/unloading-livestock Fish Welfare During Transport http://www.hsa.org.uk/downloads/info/fish-transport-proceedings.pdf The Transport of Livestock for Market and Slaughter Post FMD http://www.hsa.org.uk/downloads/info/transport-and-FMD.pdf

Specific module on market places

Topic covered	Specific areas	Relevant HSA material (hyperlinks will be provided in the final version for convenience) Printed publications: orange, online guides: blue, DVD packages: green, posters: red, conference/workshop reports: pink, factsheets: brown, non-HSA documents: purple
1. Markets	Unloading and lairage	To Market To Market – A Practical Handling Guide for Livestock Drivers http://www.hsa.org.uk/shop/publications-1/product/to-market-to-market-book Cattle Handling in Abattoirs and Markets http://www.hsa.org.uk/shop/publications-1/product/cattle-handling-in-abattoirs-and-markets Prevent Slips and Falls by Managing Concrete Floors http://www.hsa.org.uk/shop/publications-1/product/prevent-slips-and-falls-by-managing-concrete-floors Design of Facilities at Livestock Markets http://www.hsa.org.uk/downloads/publications/market-design-compendium.pdf To Market To Market http://www.hsa.org.uk/shop/publications-1/product/to-market-to-market-film Moving Animals In/Around/Out of the Sale Ring http://www.hsa.org.uk/shop/publications-1/product/moving-animals-inaroundout-of-the-sale-ring
	Moving animals	
	Behaviour in the market ring	
	Preparation before leaving market	
	Layout of market facilities and impact on welfare	